BATTERY ENERGY STORAGE SYSTEM ON LAND NEAR THE EAST CLAYDON SUBSTATION, BUCKINGHAMSHIRE

Landscape and Ecological and Management Plan

Client:
East Claydon Storage Ltd

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This report has been prepared by Sightline Landscape with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between Sightline Landscape and the Client.

CONTENTS

1. INTRODUCTION

1.1. This is the Landscape and Ecological Management Plan (LEMP) for a proposed Battery Energy Storage System (BESS) on farmland near the East Claydon National Grid Substation. The Site is accessed from Hogshaw Road to its south. The main permanently operational Site comprises four fields, under arable rotation. The Site is located on Figures 1 and 2 within Appendix A.

1.2. The structure of the LEMP is as follows:

a. Description and evaluation of features to be managed.

b. Landscape and ecological factors that might influence management.

c. Aims and objectives of management.

d. Appropriate management strategies for achieving aims and objectives.

e. Prescriptions for management actions.

f. Work schedule

g. Details of the body or organisation responsible for implementation of the plan.

h. Details of monitoring and future surveys.

1.3. The LEMP sets out how the landscape and ecological components of the proposed development are to be managed immediately after planting and sowing, through the establishment phase and through to decommissioning. It describes the key landscape and ecological issues relating to the site that have been determined from a range of studies that have been undertaken to inform the planning process. A series of landscape and ecological objectives has been determined and strategies and management prescriptions set out to achieve these to a set to a timetable. The LEMP is intended to be a flexible document where the proposed management operations are to be reviewed following feedback from monitoring and adjusted where possible to better meet the objectives or evolve to meet changing circumstances and challenges.

1.4. The baseline ecological survey plans are presented in Appendix B, the proposed planting and ecological enhancement are presented in Appendix C and a timetable of management prescriptions is presented in Appendix D. Criteria by which habitats are to be assessed as they develop to are presented in Appendix E.

2. GUIDANCE

2.1. The LEMP has been produced with reference to the Biodiversity – Code of Practice for Planning and Development British Standard: BS 42020:2013 (BSI Standards Limited, 2013) and in particular, Section 11.1, which provides details on the content of the management plans.

3. DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1. The Proposed Development involves construction of the following:

- Two compounds containing the BESS infrastructure.
- The platforms will be finished in a loose permeable gravel with access tracks built from compacted stone providing vehicle circulation and parking within the compounds.
- Eight hundred and eighty-eight battery units comprising a steel box equivalent to a half size standard shipping container.
- Thirty-seven steel framed buildings containing inverter units, each with a floor area 12m x 9.5m and 3m to eaves, with a biodiverse flat roof.
- Seventy-four small transformers, set in the open, one either side of each house.
- Seven control room kiosks, each with a floor area 14m x 4.5m, with a 2.9m high flat roof.
- Infrared CCTV cameras mounted on 4m high poles around the perimeters of the compounds.
- a customer substation, with internal equipment typically below 9m high but some elements up to 10.72m high.
- an underground electrical connection will be laid between the customer substation and the East Claydon Substation.
- extensive landscape works will be undertaken throughout the development as landscape and visual mitigation and to achieve Biodiversity Net Gain. These areas will include wetland and ponds to attenuate storm water runoff from the Proposed Development. The landscaping has been designed in conjunction with Future Nature, a Wildlife Trust Consultancy.

4. ECOLOGICAL BASELINE INFORMATION

Ecological Baseline information

4.1. The proposed development does not lie within the boundary of any statutory or non-statutory sites designated for nature conservation or within any ecological buffer zones.

4.2. The ecological opportunities and constraints within the Sites have been identified from an Ecological Impact Assessment undertaken by Site visits conducted by MKA Ecology Limited in July 2022. A Habitat Survey Plan is presented in Appendix B. Reptile surveys were undertaken between 18 April 2023 and 17 May 2023 and a breeding bird survey between March-July 2023.

4.3. No internationally statutorily designated sites were identified within 10km of the Site as part of the desktop study.

Key findings of the ecological survey

4.4. The following ecological constraints were identified at the Site with recommendations made as set out below.

Habitats

4.5. The hedgerows and pond, both Habitats of Principal Importance (NERC Act, 2006) should be retained and enhanced within the Site design. The hedgerows and pond should be protected during construction, and a 5m buffer natural buffer should be retained post-development. In line with Local Policy NE2 – River and stream corridors, a 10m ecological buffer should be retained along the stream running along the western border of the Site.

Invertebrates

4.6. The hedgerows present onsite provide suitable habitat for black hairstreak butterfly, a species listed on Schedule 5 of the Wildlife and Countryside act (1982, as amended). There are opportunities to enhance its habitat.

Amphibians

4.7. There is suitable terrestrial habitat for great crested newt onsite and a pond is present with previous records of the species. Therefore, the likelihood of presence is deemed to be high.

Reptiles

4.8. Grass snake and common lizard were found during the survey effort with a peak count of 14 grass snake and one common lizard across all seven visits. Reptiles were found adjacent to hedgerows. According to Froglife (1999) the population size class of grass snake is considered to be 'Exceptional' and common lizard is considered to be 'Low'. As a result, the Site meets the criteria to qualify as a Key Reptile Site.

4.9. The development footprint will predominately impact the existing arable fields which are not considered suitable to support reptiles. The stream and network of hedgerows which supported reptiles will be retained, with the exception of approximately 20m of hedgerow which will be removed to facilitate access.

4.10. The proposed soft landscaping includes the creation of species-rich grassland, woodland, scrub and ponds, where arable field is currently present. This is considered to likely result in a significant enhancement for the local reptile population through improved opportunities for foraging, shelter and hibernation.

Breeding birds

4.11. A total of 50 species were recorded during the breeding bird surveys of which 20 species were confirmed or probably breeding. The assemblage is typical of farmland and hedgerow habitats. Of the species recorded at the Site, a total of 28 met the assessment criteria as species of conservation concern. Two of these species were confirmed breeding (red kite and yellowhammer), eight species were probably breeding and a further nine species were possibly breeding. Species confirmed or probably breeding

include species listed under Schedule 1 of the Wildlife and Countryside Act (1981) (red kite), five Species of Principal Importance (skylark, dunnock, song thrush, linnet and yellowhammer) and species on the Birds of Conservation Concern Red and Amber lists (mallard, woodpigeon, skylark, whitethroat, wren, song thrush, dunnock, linnet and yellowhammer). No significant breeding populations (at a county level or higher) were recorded.

4.12. The majority of the breeding assemblage was associated with the hedgerows, line of trees and adjacent woodland copses. These habitats are predicted to be retained within the site design (with the exception of a very short length of hedgerow removal), which will avoid potential impacts upon these species. The BESS footprint will require the removal of arable farmland, which will likely lead to the loss of some individual skylark territories, but not in significant numbers. It is recommended skylark plots are included within areas of retained grassland within the site boundary to compensate for the loss of any territories.

Roosting bats

4.13. A number of trees on Site have potential to support roosting bats, due to the presence of knotholes, woodpecker holes and cavities. Furthermore, the line of trees along the stream were also identified as supporting bat roost potential. If these trees are scheduled to be removed, full inspections and/or aerial tree inspections of these trees will be recommended to fully assess these features. This inspection will be undertaken by a licenced ecologist using a ladder and torch/endoscope or tree climbing equipment to better assess the identified features for their suitability to support roosting bats. These tree inspections can be undertaken at any time of year. If the trees cannot be fully assessed during the inspections, further nocturnal surveys may still be required. Trees with moderate suitability for supporting roosting bats require two separate survey visits between April and October.

4.14. It is concluded that the Proposed Development will not result in the loss of any habitats of significance apart from the loss of small sections of hedge to create greater permeability in terms of pedestrian and vehicle access. The conversion of arable land to more biodiverse habitats will adequately compensate for the loss of land to electrical infrastructure.

5. LANDSCAPE BASELINE INFORMATION

5.1. A Landscape and Visual Impact Assessment has been undertaken by Sightline Landscape with site visits in 2022 and 2023. There are no international or national landscape designations relating to the application site or its immediate surroundings. The site is not in a National Park or an AONB and is classified as Countryside within the Local Plan.

5.2. The existing hedges around the fields which comprise the Site are substantial and will significantly reduce the visibility of the Proposed Development from viewpoints which are at a similar level to the Site. The compounds have been offset from these hedges to ensure their protection, with substantial buffers to allow additional mitigation. The existing tree cover along the brook is substantial and provides a level of screening to views from the more elevated ground to the north, but it is proposed to augment this with additional tree planting. Substantial tree planting is proposed to the southeast to screen the proposed facility from high ground around Granborough. Substantial tree planting to the northeast will screen the

proposed facility to long distance views from the edge of Winslow and, on the northwest side, the high ground around Botolph Claydon and Quainton Hill.

5.3. Even in the long-distance elevated views the existing hedgerows will substantially screen the majority of the equipment without requiring new hedge planting to be effective. The inverter houses have been designed with green roofs to minimise their visibility within the long oblique views from the distant high ground.

5.4. It is necessary to achieve a level of screening above the hedge line to fully screen the equipment from the elevated views. It is proposed to achieve this by planting heavy standard tree stock which comprises a mix of fast-growing species suited to the wet clay of the valley floor, such as poplars, willow and alders; all characteristic of the area. These will be interspersed with slower growing but longer-term species, such as oak and hornbeam.

6. LANDSCAPE AND ECOLOGICAL OBJECTIVES AND STRATEGIES

6.1. This section sets out the objectives that are to be achieved through the management of the landscape and habitat features and other provisions designed to enhance biodiversity within the Site. The realisation of the objectives is through the implementation of strategies, which in turn are implemented by carrying out a series of prescriptions/tasks.

Objectives

Objective 1: Retain habitats with the potential to support protected and notable species.

Objective 2: Enhance retained and created habitats in accordance with the ecological recommendations to increase the biodiversity potential of the site and to achieve the Biodiversity Net Gain target.

Objective 3: Minimise the adverse effects of the Proposed Development on landscape character.

Objective 4: Minimise the adverse effects of the Proposed Development on visual amenity, particularly residents within the distant villages which occupy the high ground around the site.

Objective 5: Increase ecological corridors across the Site, particularly for commuting bats.

Objective 6: Create appropriate habitats for biodiverse grassland through soil management in the construction process.

Objective 7: Drain the development in a sustainable manner.

Objective 8: Create a visually attractive and safe 'green areas' for casual recreational use by members of the public.

Objective 9: Create an area which encourages skylark nesting.

Strategies

6.2. The following strategies will be adopted to meet the objectives:

Strategy 1: Protect the habitats to be retained with fencing prior to the start of construction works. Strategy 1 contributes to meeting Objectives 1 and 2.

Strategy 2: Establish species rich meadow grassland on the ground disturbed by the construction works, adjustment of soil fertility and a long-term management strategy. Strategy 2 contributes to meeting Objectives 2, 6, and 9.

Strategy 3: Plant trees, scrub and hedges to integrate the Proposed Development into the landscape and screen the electrical infrastructure from those using the 'green' areas within the Proposed Development and within the surrounding landscape. Strategy 3 contributes to meeting Objectives 2, 3, 4, 5 and 8.

Strategy 4 Employ horticultural techniques to maximise the rate of growth of trees and develop a good structure to the woodlands. Strategy 3 contributes to meeting Objectives 2, 3, 4, 5 and 8.

Strategy 5: Provide hibernacula and enhanced habitat for invertebrates such as beetle banks and solitary bee habitats. Strategy 4 contributes to meeting Objective 2.

Strategy 6: Encourage use of the Site by local people though clear signage, information boards and use of social media and by keeping footpaths clear of encroaching hedging and tall herbaceous vegetation. Strategy 5 contributes to meeting Objective 8.

Strategy 7: Field 4 can be gated during the bird nesting season to restrict public access. This is likely to be particularly beneficial to skylarks, which as ground nesting birds are vulnerable to disturbance, particularly from dogs. Skylark plots can be mown in the meadow at the start of the nesting season. Strategy 7 contributes to meeting Objective 9.

Strategy 8: Pond creation and management to provide new habitats, increase biodiversity and to form a sustainable drainage system that functions at all times Strategy 6 contributes to meeting Objectives 2,3,4, 7 and 8.

Strategy 9: Periodically monitor the effectiveness of the landscape and ecological mitigation including changes in biodiversity and the effectiveness of the screening and make adjustments to the LEMP if there are more practical ways to achieve the objectives.

Monitoring of extent and condition of retained and created habitats will be undertaken to assess if habitats meet condition targets necessary to deliver the predicted Biodiversity Net Gain. This will require assessments of various habitat attributes in Years 5,10,15 and 20. Strategy 8 contributes to meeting Objectives 2 to 8.

7. MANAGEMENT TASKS

7.1. The following tasks within Table 1 are required to achieve the objectives of the LEMP.

Table 1: Management Tasks

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Existing trees	Maximise growth and screening function. Maintain existing value to nesting birds, foraging bats and invertebrates. Enhance value to nesting birds, foraging bats, invertebrates, amphibians and reptiles.	• Inspect at each maintenance visit for issues such as disease, damage due to gales etc. • Where damage/disease take appropriate action to ensure the tree line is safe (e.g., no danger to people on site due to falling limbs etc.), undertaking remedial pruning where necessary. • Trim back any branches which are resulting in excessive shading. • Prior to any works taking place a suitably qualified ecologist shall survey the tree to check for roosting bats. If bats are found the ecologist shall make recommendations on how to proceed (or not) with the works. • Continue to pollard trees which have previously been pollarded, typically on a three year cycle.	• Any removed branches should be left on site for their invertebrate value e.g., small piles can be stacked along the hedgerow margins • The management of trees will be minimal, and the crown allowed to spread in order to maximise leaf cover which will be used as a navigational aid by commuting bats. • Continuous tree cover will maintain connectivity with adjacent tree cover.	• Pruning, if required must be undertaken outside of the nesting bird season which runs from March to August inclusive. • Dead/dying/ damaged limbs shall only be removed if they pose a danger to public health and safety. • Pollards to be pruned every three years.
Existing hedges	Maximise growth and screening function while maintaining a good structure	• Allow existing hedges to grow to a height of 3-5m, but trim sides to ensure a dense structure is maintained. • Trim the sides of the hedges, particularly to ensure that they do not encroach on the surrounding highways, obscure sight lines or impede access for pedestrians and vehicles. Encourage or maintain a twiggy structure to enhance screening, especially in winter.	• Trim 30% of the hedges in one year and a different 30% in the following year to provide increased cover and food in winter.	• Trim in winter, ideally late January/early February (outside the breeding bird season).
New hedges	To screen the BESS compounds from existing PRoW and the proposed permissive footpath. To provide a linear	• Ensure new plants are regularly watered during extended periods of dry weather. • Check that the plants/shelters are upright and secure. • Maintain weed free within at the base of new plants and inside the shelters by hand weeding. Maintain a zone of bare mulch to 0.75 m beyond the	• Lengthening the time between hedge cutting increases the production of hard and soft mast resulting in an increased foraging resource for wildlife to exploit.	• Regular watering for the first 2 years. • Checking plants are upright and secure, annually or as required i.e. Particularly

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
	wildlife corridor feature. To increase biodiversity potential on site through the creation of new habitat and strengthened habitat connectivity for dispersal. Enhance value to nesting birds, foraging bats, invertebrates, amphibians and reptiles. Reduce the visibility of the electrical infrastructure to those within permissive access areas and from within the wider landscape.	outer stems of the hedge. After 5 years allow the strip to colonise naturally, but for the next two years remove by hand pernicious weeds which may hinder the growth of the hedge such as dock, bramble, bindweed and nettles. • Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn. This process is to be repeated each year until a 100% canopy cover is achieved. • The new hedgerow is to be trimmed at the end of year 2 to establish form and promote bushy growth. Ultimately managed at a winter cut height of at least 3.0 m. • Trim the sides of the hedges, particularly to ensure that they do not encroach on the adjacent compounds, highways, obscure sight lines or impede access for pedestrians and vehicles. Encourage or maintain a twiggy structure to enhance screening, especially in winter. • After five years consider removing tree shelters.	• Hedgerows provide habitat for nesting birds as well as cover for foraging amphibians. • Linear habitats provide commuting resources to bats. • The use of native species which produce seeds, nectar and berries at different times of year provides food resources to birds throughout the year and also maximises invertebrate potential within the hedgerow which in turn increases the value of the hedgerow to other wildlife such as foraging bats.	after storms, remove stakes and guards after 5 years. • Maintain weed free at the base for the first 5 years. • Hedgerow trimming will be undertaken outside the nesting bird season which runs from March to August inclusive. Ideally trim late January/early February • Keep permissive footpath routes clear of encroaching hedges at all times.
Woodland planting	Maximise screening and provide a habitat.	• Ensure new plants are regularly watered during extended periods of dry weather. • Check that the plants/shelters are upright and secure. • Maintain weed free within at the base of new plants and inside the shelters by hand weeding. Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn. This process is to be repeated each year until a 100% canopy cover is achieved. • After five years consider coppicing species such as hazel and dogwood to maximise the production of dense, twiggy screening growth. • After five years consider removing tree shelters. • Cut back branches which hinder safe passage along the Permissive Paths. • After 10 years consider thinning some species to favour the growth of long-term species such as oak and hornbeam. • Cut back or fell any trees which start to adversely affect the functioning or	• Planting provides habitat for nesting birds as well as cover for foraging amphibians.	• Maintain weed free at the base for the first 5 years. • Consider coppicing some species after 7 years. • Keep Permissive Paths clear of overhanging branches at all times.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
		security of the electrical infrastructure.		
Scrub	To provide a different habitat type which will favour certain species. Provide an additional layer of screening and enhance the setting to the permissive access areas.	• Ensure new plants are regularly watered during extended periods of dry weather • Check that the plants are upright and secure. • Allow the wildflower sward among the shrubs to flower and set seed. Allow it to evolve its own composition/structure as the scrub establishes. • Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn. This process is to be repeated each year until a 100% canopy cover is achieved. • After seven years consider coppicing species such as hazel and dogwood to maximise the production of dense, twiggy screening growth. • Cut back branches which hinder safe passage along the Permissive Paths. • Consider thinning and further coppicing after Year 14. • Cut back or fell any trees which start to adversely affect the functioning or security of the electrical infrastructure (scrub shall not be allowed to encroach closer than 10m to a battery container to minimise fire risk).	• Scrub provides habitat for nesting birds as well as cover for foraging amphibians. • Linear habitats provide commuting resources to bats. • The use of native species which produce seeds, nectar and berries at different times of year provides food resources to birds throughout the year and also maximises invertebrate potential within the hedgerow which in turn increases the value of the hedgerow to other wildlife such as foraging bats.	• Establishment management in the first 5 years. • Consider coppicing after seven years and further coppicing and thinning after 14 years.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Fruit Trees	To provide an attractive landscape feature of benefit to the community. A further habitat type of benefit to wildlife.	• Management of the fruit trees is to be a collaboration with the community/wildlife trust but the grounds maintenance company employed by the facility operator will undertake tasks such as maintaining the wildflower grassland under the trees and removing excess dropped fruit and leaf debris from under the trees. • Ensure new trees are regularly watered during extended periods of dry weather. • Ensure that the stakes are upright and firm, and the ties are secure. Remove weeds. • Maintain weed free under the trees (1.5 m dia. circle) by hand weeding and mulching. • Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn until 100% success. • As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc. • Where damage/disease take appropriate action to ensure the tree line is safe (e.g. no danger to people on site due to falling limbs etc.), undertaking remedial pruning where necessary. • Cut back branches which hinder safe passage along Permissive Paths.	• The combination of fruit trees growing within a species rich meadow is highly beneficial to wildlife. • The meadows will enhance the quality of the habitat for bats.	• Regular watering for the first 2 years. • Check plants are upright and secure, annually or as required i.e. particularly after storms. Remove stakes and guards after year 5 • Maintain weed free in the first 5 years through an application in spring. • Replace dead plants annually until 100% survival established along the hedge, November-December. • Pruning, if required must be undertaken outside of the nesting bird season which runs from March to August inclusive. • Meadow to be mown in accordance with management for G2 grassland.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Newly sown grassland type G1 (meadow areas)	Increase biodiversity value of the habitat. Create foraging, overwintering and refuge opportunities for invertebrates, amphibians and reptiles. Create structurally and species diverse habitat.	• Allow to grow up and the Yellow Rattle to flower and set seed. Strim down, typically in August in dry weather. Leave the arisings for one week, then rake up, collect, and remove from site. • Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling. • Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by mowing or hand pulling. • It is to be cut in sections leaving a week to a fortnight between cuts. Arisings are to be collected two weeks after being cut. A fifth of the sward will be left to stand uncut through the winter and cut down in March the following year, this will provide a habitat for invertebrates and some vertebrates over the winter. Rotate this area so a different section is left uncut each year. Lightly mow the sward down to 70 -100 mm as required throughout the winter months until March and collect the clippings. • Once a month between April and August close mow along the lines of PRoW and along footpaths that have been created through wear by users of the greenspace (or mow paths through the areas along perceived desire lines to encourage use). • Close mow a metre wide strip either side of the gravel path that parallels Coldharbour.	• Meadow grassland has the potential to support a range of invertebrates which in turn will provide a food source to foraging species such as birds. • Mowing/strimming (except in close mown areas) must result in a sward height no shorter than 100mm to avoid killing/injury to amphibians/reptiles that may be present.	• The meadow grassland will be subject to a single annual cut in the summer. The cutting month should be varied between August and September to maintain a diverse balance in the sward. • Close mown paths to be cut once a month between April and August.
	Restrict access to Field 5 during the bird nesting season (April to late August) to limit disturbance to ground nesting birds.	• Lock the gates providing access to these fields but erect weatherproof signs on the gates explaining why access is restricted. • Skylark Plots: In late March create 5 no 5m x 5m areas, for skylarks by cutting the sward very short and scarifying. Plots to be a minimum of 15metres apart and 20m away from hedges or overhead lines. Do not mow for the rest of the nesting season.	• To minimise disturbance to ground nesting birds • To create optimum conditions for skylark nesting.	Create plots late March, Lock gates to nesting areas form 1st April to 15th August.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Tussocky Grassland G2	Provide a habitat for wildlife and slow greenfield surface run off	• The tussock grassland will be cut once in August in the first year and then cut twice more until March of the second year. • After the fourth year, cut/trim one half of the area in August or September in dry weather, standing. Leave the arisings for one week, then rake up, collect, and remove from site. Leave the remaining half untouched. • Cut the remaining half in four years later leaving the rest untouched. Then repeat the cycle. • Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling. • Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by hand weeding.	• Develops a good structure providing shelter for wildlife, particularly small mammals and reptiles.	• Cut on a three year cycle.
Pond draw down areas Grassland G3, G5 and G6	To provide a damp meadow with species that can withstand fluctuating water levels.	• Allow to grow uncut until late August when it is to be strimmed down in dry weather and the arisings collected and used to create a compost heap just outside the area, for use by reptiles etc.	• Provides long grass cover around the pond margin and a habitat for species which benefit from a damper habitat with fluctuating water levels.	• Mow every year in August.
Pollinator grass mix within scrub areas G4	A temporary sward to encourage pollenating insects to the Site and provide a less competitive ground cover within the scrub. Also an attractive feature within areas with permissive public access.	• Control undesirable plants such as thistle, ragwort and bindweed by hand weeding/selective strimming. • Strim down in August, allow the material to dry for two weeks, then collect the arisings. Take care not to damage woody scrub plants. • Allow the sward to grow up in the second year and repeat strim each August. • Continue the cycle until the scrub has started to shade out the meadow. After 7 years stop managing the sward.	• Provides a nectar rich source	• Mow every year in August.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Existing pond	Improve water quality and pond profile	• On completion of construction take photographs to record the existing condition. Present in ecology reports. • Existing overhanging canopy to be thinned/coppiced to create 60% open to the sky. • In October/November scrap out the base of the pond to remove debris. Stack arisings on the side of the pond for a week before removing to allow wildlife to migrate. • Create shallow margins. • Control any undesirable/pernicious/invasive growth. • Retake photographs every five years to illustrate condition and present in ecology reports.	• The pond is currently almost completely shaded and have not been managed for decades. It will benefit from clearance of slit and debris and reprofiling.	• Clean out in October/November • Consider reducing over hanging canopy growth every seven years. Consider desilting/debris clearance every seven years.
New ponds and marginal edges	To provide sustainable drainage and increase habitat diversity.	• Allow the newly excavated area to settle and lie fallow for a couple of months. This will also allow the typical water regime to settle. • In early spring scrape emerging vegetation from the sides (taking any necessary precautions regarding protected species, which will depend on how long the pond has lain fallow) and plant marginal plants around the waterline. Seed the side slopes and areas surrounding the pond with the wet meadow seed mix. • In the first year monitor the establishment of the marginal vegetation. Adjust or replant if necessary to suit typical water levels. Ideally the marginal plants should be spreading naturally to seek out suitable conditions. • Check that the marginal plants are not impeding the drainage function of the pond, such as blocking inlets or outlets or reducing capacity. If so take remedial measures, such as clearing plants or detritus from pipework. If it is necessary to re-excavate the pond to maintain capacity, this should be undertaken in winter and the arisings left on the side of the pond for a week, before being removed from site.	• Provides a valuable new habitat. • Increased food source, such as insects for bats. • A water source for animals.	• Undertake establishment in early spring. • Monitor to ensure the establishment of a good marginal habitat for the first two years and adjust planting or carry out new planting if necessary. • Once established check at each visit that the sustainable drainage aspect is functioning. • Only undertake major restoration works in winter.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Refugia for reptiles and amphibians	To increase refuge opportunities and create hibernation potential.	• To be located close to the pond. • Augment with additional deadwood	• Refuge piles will comprise a combination of logs and branches stacked 600mm high and covering an area of 1.25 x 1.25 m. • Refuges will be created near to the site's boundary in the locations shown.	• Refuge piles could be occupied by protected species at any time of year and must not be moved at any time. • New logs/brash can be added to existing refuge piles in September/Oct every 5 years.
Bird boxes	Erect in accordance with Appendix F. Maintain in good order	• Each year inspect for use and clear out any old nests and debris. Repair or replace damaged boxes. • Spot treat any pernicious weeds. • In subsequent years strim down the half the bank	• To maximise and maintain nesting opportunities on the Site.	• Inspected for loss/damage each year. • All works to be outside the nesting season.
Bee Banks	To maintain the substrate in an optimum condition for colonisation by bees	• A certain amount of collapse or erosion of the bank is beneficial since it exposes fresh substrate for the bees to burrow into. • Areas subject to excessive collapse or due to erosion or vandalism are to be built back up. • Manage the vegetation growing on the bank to maximise flowering but also maintain at least 25% of the bank as exposed substrate. • Strim the sward down tightly in August and remove arisings after one week. • Control colonisation by undesirable/invasive species such as thistles, nettles, bindweed	• There is a need to maintain a careful balance of a floriferous sward and exposed substrate where there are some steep exposed faces.	• Inspect annually inn spring and undertake any remediation. • Strim down and collect arisings in August. Consider more frequent cuts if appropriate.
Beetle Banks	To establish the optimum conditions for invertebrates	• In first year cut the sward several times so that it forms a thick covering. • In subsequent years cut down 50% of the sward and remove arisings. Cut the other 50% in the second year.	• Cutting only 50% each year will retain a refuge for invertebrates	• Cut annually on a 50/50 cycle. Only cut outside of the bird nesting season.
Biodiverse roofs on the inverter houses	To establish the optimum conditions for invertebrates and ephemeral plants	• The substrate is not to be seeded but allowed to naturally develop its own ecosystem. • Once a year in late autumn cut down any growth to below 100mm and remove arisings. Pull out and dispose of any tree and shrub seedlings. Pull out and remove any undesirable plants such as bramble, bind weed, ragwort, nettles.	• The fluctuating wet and dry conditions will create a varied habitat	• Cut down and weed in late autumn each year during the operational period.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
		• Check that the roof drainage system is functioning and make any repairs as necessary.		
Fencing, ditch crossings, gravel paths, gates signage	Maintain in good order to protect the public from the electrical apparatus, exclude deer and livestock. Ensure safe, free movement along the PRoW and permissive paths within the Site.	• All internal and perimeter fencing for the development will be regularly checked to ensure it is safe and fit for purpose. Repairs and replacement of fencing will be made as soon as practically possible as and when required. • Check footpath direction signs, stiles, gates and information boards are in good working order and make any necessary repairs as promptly as possible. • Inspect the condition of the walking surface and consider remedial action to improve excessively wet or muddy areas, particularly around kissing gates. • Make good any damage to signs and gates. • Trim back hedges so that they do not encroach on the paths, particularly where paths pass through hedges.		• At each visit
Litter and vandalism	Maintaining the Site in good order.	• Report any fly tipping or vandalism. • Grounds maintenance will be delivered throughout the operational phase. • The facility will be kept clean and litter free. Response to acts of vandalism or graffiti will be dealt swiftly with repair or replacement implemented as soon as practically possible.		• At each visit

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Ecological monitoring	To ensure that the biodiversity of the site is being maximised. To identify potentially new ecological constraints (such as a badger sett opening up on the site). To ensure that habitats and species are protected during decommissioning.	• Undertake a walkover survey after the first 5 years after the construction and then in Year 10 and then once every 10 years to assess whether the ecological objectives are being met. • Undertake bat surveys every five years and include findings in the ecology report. The survey shall include a survey of lux levels along commuting corridors plotted on a plan to identify any changes, if any. • Make recommendations for altering the management regime or undertaking additional works and alter the LEMP accordingly. • Prior to decommissioning an ecologist shall undertake a walkover survey to identify habitats to be retained and protected and identify other ecological constraints and make recommendations for protection works during the dismantling process. • The findings of the surveys shall be presented in an Ecological Monitoring Report completed not more than 3 months after the survey work has been completed. The report shall be presented to an appropriate officer within Dorset Council and agreement on the recommendations made. If appropriate, representatives of Dorset Council will be invited to the site to inspect the landscape areas to understand how the landscape is evolving and achieving the target conditions. Management recommendations following the visit are to be implemented in accordance with an agreed timetable.	• The ecological walkover must be carried out by a suitably qualified ecologist. • Collaboration with Buckinghamshire Council will ensure that the ecological objectives are being met.	• 5 years from the completion of the facility and then every 10 years throughout the life of the facility. • Immediately prior to decommissioning the facility.

7.2. The management tasks over the operational life of the facility are summarised in Appendix C.

8. AVOIDING POTENTIAL THREATS TO THE NATURAL ENVIRONMENT

8.1. The main potential threat is fire within the BESS compound (although a remote possibility). A fire control protocol is in place which will ensure that any fire is contained within the BESS compound. The compounds have also been designed to contain any potential pollution run off into the surrounding landscape areas. Concrete channels will contain any potentially contaminated water within the compounds and hold back any potential run off.

8.2. Nevertheless, as secondary back up during an incident, the penstocks on the outfalls of the attenuation ponds would be closed/raised to prevent any egress of water beyond the Site boundaries. If the

attenuation features are predicted to become full with the danger of over topping, then the water is to be tested for contaminants. If the tests state that the water is environmentally acceptable, then the pen stocks can be adjusted to allow an appropriate discharge rate off site. If the tests show that the water is contaminated or there is insufficient time to undertake tests, then procedures are to be implemented to remove the contaminated water in a safe manner, for example by pumping into a tanker for disposal in an approved manner.

8.3. Once pumped dry the soils within and around the ponds are to be tested for contamination. If contaminated, then the substrate is to be removed from site and disposed in an appropriate manner. The ponds are then to be reconstructed using clean substrate and refilled with clean water.

9. ACHIEVING BIODIVERSITY NET GAIN AND HABITAT MONITORING TASKS

9.1 In order to determine whether habitats are achieving the condition necessary to deliver the Biodiversity Net Gain target a programme of habitat monitoring is to be undertaken. Each of the existing and proposed habitat types are to be periodically assessed using criteria set out in the Biodiversity Metric 4.0 Auditing and Accounting for Biodiversity Technical Supplement Natural England Joint Publication JP039 or any updated version of this document (a version of Annex 1 which sets out the criteria to be used is presented in Appendix E and has been abridged to refer only to the habitat types relevant to this project).

9.2 The monitoring required to assess whether BNG target conditions for each habitat are being achieved is set out in Table 2. This is in addition to other monitoring required in this LEMP to ensure that the habitats establish in the first place, with any dead or dying areas made good by new seeding and sowing (as set out in Table 1: Management Tasks).

Table 2. Ecological Monitoring Schedule

HABITAT	YEAR TARGET HABITAT CONDITION SHOULD BE ACHIEVED	YEARS AFTER CONSTRUCTION IN WHICH MONITORING SURVEY IS TO BE UNDERTAKEN	NOTES
New Species Rich Grassland Medium to High Distinctiveness	20	5, 10, 15	Undertake a detailed assessment using quadrats and species counting for at least four locations, including two within the BNG grassland area.
New Woodland	30+	5, 15, 30	Each woodland block to be assessed separately.
New Scrub	10	5, 10, 15	Each area of scrub to be assessed separately
Hedgerows with and without trees (existing and new)	10	5, 10	Each hedgerow to be assessed separately.
Ponds and ditches	5	5, 10	Each to be assessed separately.

9.3 Following a habitat extent and condition monitoring event a report shall be compiled that sets out current biodiversity value compared with target biodiversity value.

9.4 If monitoring indicates that target condition / extent is not being met for any of the assessed habitats, remedial works to address this will be developed, agreed and implemented by the organisation responsible for implementation of the LEMP.

10. DECOMMISSIONING

10.1 At the end of the operational period of the facility the fencing and electrical infrastructure shall be removed. Ideally removal operations should take place in dry conditions to minimise disruption and compaction of the existing sward and soil profile.

10.2 All underground cables should be removed, and any disturbed ground made good. Finally, the aggregate and ground stabilisation fabric within the tracks and hardstanding's shall be removed (unless required for a permitted agricultural use).

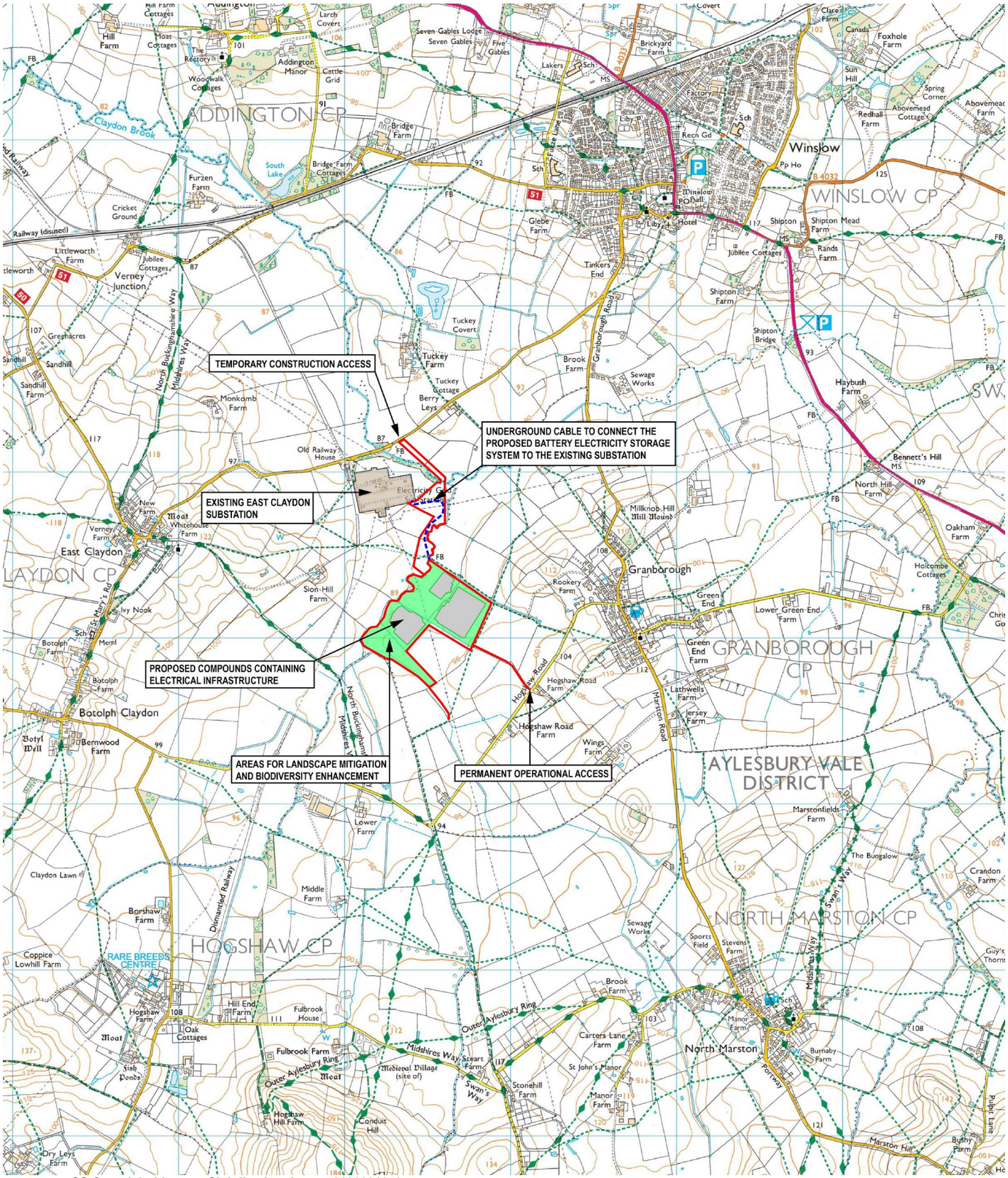
10.3 All trees, hedges and shrubs planted as part of the mitigation shall be retained but the treatment of the compounds will depend on any future use of the Site, that is either returned to agriculture or repurposed, subject to planning approvals.

11. IMPLEMENTATION OF THE LEMP AND RESPONSIBLE ORGANISATION

11.1. The Site will be managed by the company which builds out and operates the facility (currently East Claydon Storage Ltd.). For the first year after completion of the landscaping works the landscaping will be managed by the implementing landscape contractor in accordance with the LEMP and under the terms of the first year Defects Liability Period clause within the landscape contract. In subsequent years the landscape maintenance shall continue in accordance with the LEMP but may be awarded to a third-party landscape contractor by the organisation responsible for the management of the facility. This arrangement may periodically change subject to commercial terms and the performance of the landscape contractor; however, the operating company will always ensure that a landscape maintenance contract is in place for the duration of the operational life of the facility and implemented in accordance with the LEMP. The arrangement of ecological monitoring, and payment of associated fees, will be the responsibility of the management company operating the Facility.

APPENDIX A: LOCATION PLANS

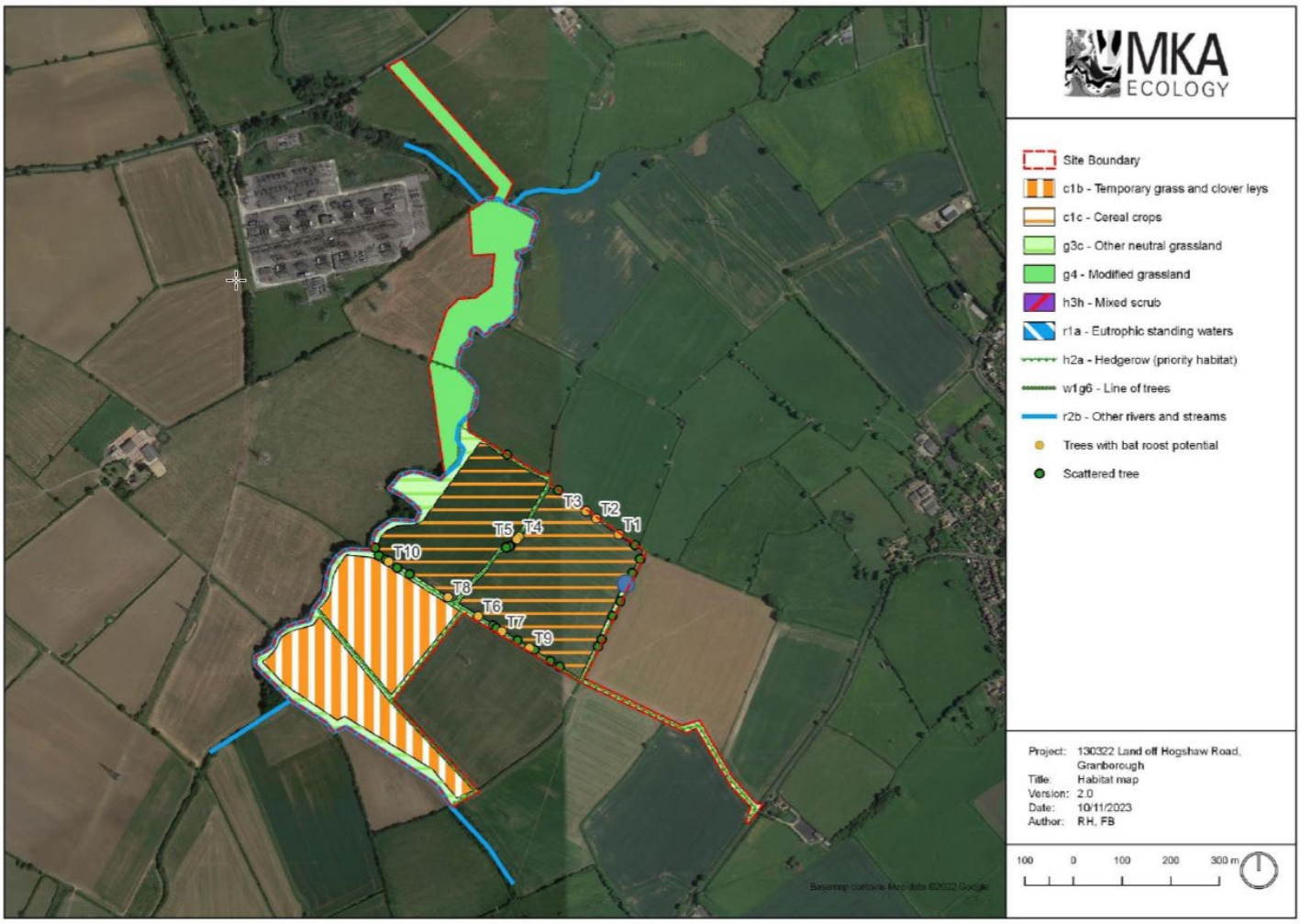
FIGURE 1: OS LOCATION PLAN



OS Copyright Licence: Sightline Landscape 0100031673

FIGURE 2: AERIAL LOCATION PLANS

APPENDIX B: BASELINE ECOLOGICAL SURVEY PLAN



APPENDIX C: LANDSCAPE AND HABITAT CREATION PLANS

Refer to the East Claydon BESS Landscape Specification Document for full planting details and the Landscape and Ecological Management Plan for its ongoing management.

Revision	Date	Comment
-	-	-

STATERA
BALANCING THE GRID

Legend

SD refers to a Standard Detail drawing number

- Site boundary
- Existing trees
- Existing hedgerows
- Proposed native broadleaved woodland
- New native scrub planting
- Hibernacula/habitat piles
- New substation compound
- 2.5m high security fencing SD_3 (SD_4 to substation)
- Crushed stone access track SD_15
- 5.5 wide crushed stone access track SD_1
- Existing hedgerow removed
- Solitary bee habitat
- Attenuation pond
- Loose permeable gravel SD_15
- Wildflower grassland
- Retained grassland
- Enhanced wet meadow
- Standing piles/deadwood
- Wildlife pond
- Proposed hedgerow planting
- Public Right of Way
- Proposed tree
- Proposed orchard tree
- KG Kissing gate SD_17
- Flood zone 2
- Flood zone 3
- Source of water for irrigation trees during periods of inadequate rainfall
- 4m high infrared CCTV pole SD_11
- Footbridge SD_19
- 1.5m high post and wire stock fence SD_21
- Permissive access to nature reserve area for the operational life of the facility
- Temporary construction haul road and contractors compound
- Indicative drainage channel
- Inverter building with biodiverse roof (total 37) SD_9
- Transformer (total 74) SD_5
- Battery container (total 888) SD_6
- Storage container SD_7
- Control room (total 7) SD_13
- WT Water tank (total 5) SD_12

Symbol	English Name	Latin Name	Size
Ac	Field Maple	*Acer campestre*	18-20cm girth, semi-mature standard
Ag	Alder	*Alnus glutinosa*	18-20cm girth semi mature, standard
Cb	Hornbeam	*Carpinus betulus*	18-20cm girth semi mature, standard
Pc	Grey poplar	*Populus canescens*	18 – 20cm girth standard
Pn	Black Polpar	*Populus nigra*	0.9 – 1.2m whip
Pt	Aspen	*Populus tremula*	18-20cm girth, standard
Pa	Native cherry	*Prunus avium*	14 -16cm girth standard
Qr	Oak	*Quercus robur*	16 – 18cm girth, standard
Sa	White willow	*Salix alba*	18 - 20cm girth standard
Sc	Goat willow	*Salix caprea*	10 – 12cm standard or feathered tree
Sf	Crack willow	*Salix fragilis*	18- 20cm girth standard

Red indicates semi-mature stock

ON BEHALF
STATERA

PROJECT
EAST CLAYDON BESS

DATE	24 November 2023
SCALE	1 : 1,000 @ A1
DWG No	SL261_L_X_PP_1
APPROVED	CMcD

TITLE
PLANTING PLAN
SHEET 1 OF 2

Footbridge crossing over ditch SD_19

Kissing gate with waymarker post see SD_17 and SD_18

Stock fence SD_21

FIELD 3

FIELD 4

FIELD 2

KG

WILDLIFE PONDS & SCRUB

NP6

Scrub

WILDFLOWER GRASSLAND

Flood Zone 2

Flood Zone 3

Proposed attenuation pond

NP7

Beetle bank

Beetle Bank

NP1

Compound 2

SBH 5

SBH 6

SBH7

SBH4

SBH8

HHP4

SBH9

SP1

SP2

D2

D3

D4

D5

WT

GATE

Existing farm track made good to form a second access for emergency vehicles only (not for construction)

Biodiverse roof on inverter building See SD_9

ORCHARD

1.22m RH

1.5m post and wire fence to allow the grassland to be protected during the nesting season for the ground nesting birds/ Public access allowed at other times. See SD_21

Kissing gate to allow permisssive access outside of the bird nesting season

HHP5

Kissing gate and field gate across existing field access with waymarker post see SD_17 and SD_18

Permissive footpath link to existing PRoW

Stock Fence SD_21

Drain

SS

SHEET 1

SHEET 2

N

0 10 20 50 100m

SCALE 1:1,000

Landscape design produced in collaboration with Future Nature, the consultancy arm of the

Berkshire Buckinghamshire & Oxfordshire Wildlife Trust

Refer to the East Claydon BESS Landscape Specification Document for full planting details and the Landscape and Ecological Management Plan for its ongoing management.

Revision	Date	Comment

STATERA
BALANCING THE GRID

Legend

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- Proposed hedgerow planting
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- Proposed tree
- Proposed orchard tree
- KG Kissing gate SD_17
- Flood zone 2
- Flood zone 3
- Source of water for irrigation trees during periods of inadequate rainfall
- 4m high infrared CCTV pole SD_11
- Footbridge SD_19
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- Permissive access to nature reserve area for the operational life of the facility
- Temporary construction haul road and contractors compound
- Indicative drainage channel
- Inverter building with biodiverse roof total 37) SD_9
- Transformer (total 74) SD_5
- Battery container (total 888) SD_6
- Storage container SD_7
- Control room (total 7) SD_13
- WT Water tank (total 5) SD_12

Symbol	English Name	Latin Name	Size
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Pc	Grey poplar	*Populus canescens*	18 – 20cm girth standard
Pn	Black Polpar	*Populus nigra*	0.9 – 1.2m whip
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Sa	White willow	*Salix alba*	18 - 20cm girth standard
Sc	Goat willow	*Salix caprea*	10 – 12cm standard or feathered tree
Sf	Crack willow	*Salix fragilis*	18- 20cm girth standard

Red indicates semi - mature stock

ON BEHALF
STATERA

PROJECT
EAST CLAYDON BESS

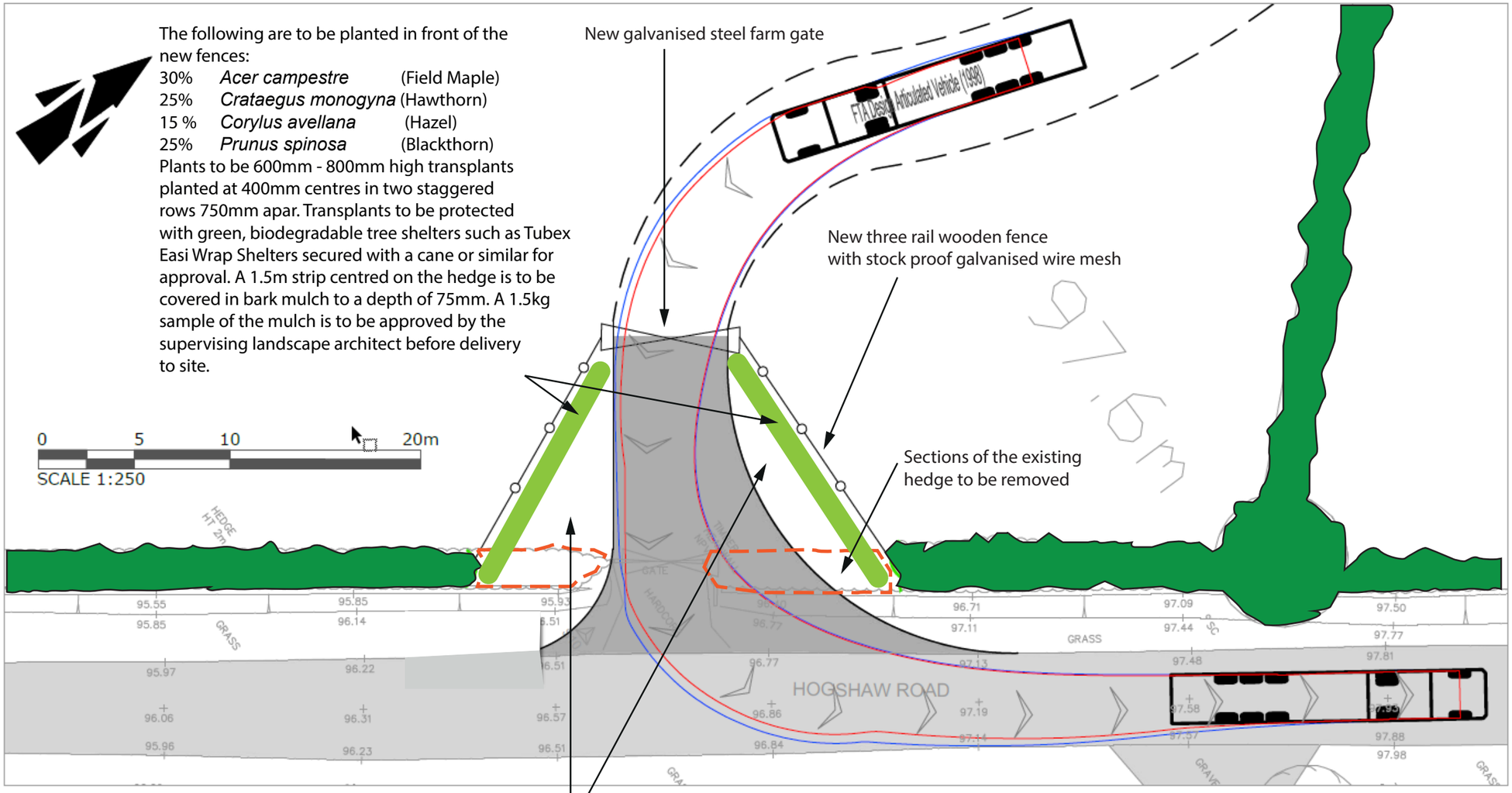
DATE	24 November 2023
SCALE	1 : 1,000 @ A1
DWG No	SL261__L__X__PP__2
APPROVED	CMcD

TITLE
PLANTING PLAN
SHEET 2 OF 2

The following are to be planted in front of the new fences:

30% *Acer campestre* (Field Maple)
25% *Crataegus monogyna* (Hawthorn)
15 % *Corylus avellana* (Hazel)
25% *Prunus spinosa* (Blackthorn)

Plants to be 600mm - 800mm high transplants planted at 400mm centres in two staggered rows 750mm apar. Transplants to be protected with green, biodegradable tree shelters such as Tubex Easi Wrap Shelters secured with a cane or similar for approval. A 1.5m strip centred on the hedge is to be covered in bark mulch to a depth of 75mm. A 1.5kg sample of the mulch is to be approved by the supervising landscape architect before delivery to site.



Verges to be made good by seeding with Emorsgate EM4 wildflower mix at a rate of 4/gm2(or other supplier to approval)

STATERA BALANCING THE GRID	Date: 29.12.21 Scale: 1:250 DWG No: 502_PP_05	Revision Date Comment 0 5 10 15 20 25 M	Client: Statera Project: East Claydon BESS Title: Hogshaw Rd Access Planting Plan

APPENDIX D: TIMETABLE FOR ECOLOGICAL MANAGEMENT OPERATIONS

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Existing Trees	Inspect at each maintenance visit for issues such as disease, damage due to gales etc. Where damage/disease take appropriate action to ensure the tree line is safe (e.g. no danger to people on site due to falling limbs etc.), undertaking remedial pruning where necessary. Prior to any works taking place a suitably qualified ecologist shall survey the tree to check for roosting bats. If bats are found the ecologist shall make recommendations on how to proceed (or not) with the works.																									
Existing hedges	Allow to grow up unchecked each season, but trim back each year to leave a 300mm height increase. Repeat in the second and third years until the hedges have a 3 m height in summer. Trim the sides of the hedges, particularly to ensure that they do not impede access along the adjacent highways or pedestrian routes which pass through them. Trimming must be undertaken outside of the nesting bird season which runs from March to August inclusive and ideally in late January, early February.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
New hedges Establishment Phase	Ensure new plants are regularly watered during extended periods of dry weather. Implement watering using the watering point/system based on site. Check that the plants are upright and secure. Maintain weed free within at the base of new plants by hand weeding ort spot treating with herbicide in early spring when the deciduous vegetation is still not in leaf. Maintain a zone of weed free mulch to 0.75 m beyond the outer stems of the hedge. After 5 years allow the strip to colonise naturally, but for the next two years remove pernicious weeds which may hinder the growth of the hedge such as dock, bramble, bindweed and nettles.																									
New hedges **Long term management**	Gradually increase the heights of the hedges, trimming to ensure thick, bushy growth.to produce hedges 3m summer height. Trim the sides of the hedges, particularly to ensure that they do not encroach on the surrounding highways, obscure sight lines or impede access along the PRoW. Trimming must be undertaken outside of the nesting bird season which runs from March to August inclusive and ideally in late January, early February. Trim back any encroaching scrub or woodland to maintain a minimum 3m wide grass corridor alongside the hedge to enable management.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Hedgerow tree planting	In the first five years ensure new trees are regularly watered during extended periods of dry weather. Implement watering using the watering point/system based on site. Ensure that the stakes are upright, and firm and the ties are secure. Remove weeds. Maintain weed free under the trees (1.5 m dia. circle) by either hand weeding or application of an appropriate herbicide. Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn until 100% success achieved. As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc. Where damage/disease take appropriate action to ensure the tree line is safe (e.g. no danger to people on site due to falling limbs etc.), undertaking remedial pruning where necessary outside of the nesting bird season which runs from March to August inclusive. Take care when trimming the hedges that the trunks are not damaged by machinery.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
New Woodland establishment phase	In the first five years ensure transplants are regularly watered during extended periods of dry weather. Implement watering using the watering point/system based on site. Ensure that the tree stakes are upright, and firm and the ties are secure. Remove weeds. Maintain weed free under the plants by either hand weeding or application of an appropriate herbicide. Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn until 100% canopy cover has been achieved. As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc.																									
New woodland long term management.	Manage to maximise growth and good form. After 10 years inspect to determine whether thinning/coppicing would be beneficial. Works to favour the growth of long-term species of stature such as oak, beech and lime. Leave arisings among the trees for invertebrates. Repeat the process after year 20.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Standard trees	Ensure new trees are regularly watered during extended periods of dry weather. Implement watering using the watering point/system based on site. Ensure that the stakes are upright and firm and the ties are secure. Remove weeds. Maintain weed free under the trees (1.5 m dia. circle) by either hand weeding or application of an appropriate herbicide. Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn until 100% success achieved. As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc. Where damage/disease take appropriate action to ensure the tree line is safe (e.g. no danger to people on site due to falling limbs etc.), undertaking remedial pruning where necessary outside of the nesting bird season which runs from March to August inclusive.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Scrub areas	Ensure transplants are regularly watered during extended periods of dry weather. Ensure that the tree stakes are upright, and firm and the ties are secure. Remove weeds. Eradicate pernicious weeds such as thistle, ragwort and bindweed. Manage the pollinator meadow mix by strimming in August but allow the sward to evolve naturally as the scrub develops. Check at each visit especially in the autumn and make a note of any dead or dying plants and replace them that autumn until 100% canopy cover has been achieved. As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc. Consider coppicing and thinning after 7 years to maintain an open structure and plants with good form. Scrub shall not be allowed to encroach closer than 10m to a battery container to minimise fire risk.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Newly sown species rich grassland G1	Cut/Strim in August in dry weather, standing. Leave the arisings for one week, then rake up, collect and remove from site. Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling. Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by hand weeding/cutting or spot spraying. In the first year keep mown to a height range 100-200mm to encourage the development of a close sward In the second year allow to grow up, strim in August in dry weather. Leave the arisings for one week, then rake up, collect, and remove from site. If practical consider grazing with sheep in Autumn and early spring. If not, then mow in late October and collect the arisings. Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling. Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by mowing or hand pulling. Occasionally close mow along the lines of PRoW and the permissive footpath if a route is																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
	not being worn due to use, i.e. if tall grass is hindering passage.																									
Tussocky grass areas G2	The tussock grassland will be cut once in August in the first year and then cut twice more until March of the second year. After the fourth year, cut/trim one half of the area in August or September in dry weather, standing. Leave the arisings for one week, then rake up, collect, and remove from site. Leave the remaining half untouched. Cut the remaining half in year seven leaving the rest untouched. Then repeat the cycle. Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling. Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by hand weeding.																									
Pond draw down areas Grassland G3, G5 and G6	Cut/Strim in August in dry weather, standing. Leave the arisings for one week, then rake up, collect and remove from site. Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling. Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by hand weeding/cutting or spot spraying.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Existing Ponds	On completion of construction take photographs to record the existing condition. Present in ecology reports. Existing overhanging canopy to be thinned/coppiced to create 60% open to the sky. Every five years in October/November scrap out the base of the pond to remove debris. Stack arisings on the side of the pond for a week before removing to allow wildlife to migrate. Create shallow margins. Control any undesirable/pernicious/invasive growth. Ensure inlets and outlets are flowing as intended. Clear if blocked. Retake photographs every five years to illustrate condition and present in ecology reports.																									
New Ponds	Newly excavated ponds are to be monitored and any undesirable growth such as thistles, brambles and bindweed to be cut back. Encourage the growth and spread of marginal plants. In the first year monitor the establishment of the marginal vegetation. Adjust or replant if necessary to suit typical water levels. Ideally the marginal plants should be spreading naturally to seek out suitable conditions. Check that the marginal plants are not impeding the drainage function of the pond, such as blocking inlets or outlets or reducing capacity. If so take remedial measures, such as clearing plants or detritus from pipework. If																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
	it is necessary to re-excavate the pond to maintain capacity, this should be undertaken in winter and the arisings left on the side of the pond for a week, before being removed from site. If the woody vegetation grows and is shading the pond, cut back down to the ground in winter. Every five years clear out excessive debris/vegetation cover within the pond by excavation, deposit arisings on the side.																									
Ditches and swales	Check that the swales and ditches are functioning, i.e., retaining sufficient water to prevent run off beyond the Site. If necessary, adjust the profiles of the swales and repair debris dams in the ditches to maximise the containment of runoff.																									
Maintain bird and bat boxes	Monitor for use during the ecological walk over survey. Clear out debris if required and at an appropriate time. Make any necessary repairs or replace if appropriate.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Bee Banks	A certain amount of collapse or erosion of the bank is beneficial since it exposes fresh substrate for the bees to burrow into. Areas subject to excessive collapse or due to erosion or vandalism are to be built back up. Manage the vegetation growing on the bank to maximise flowering but also maintain at least 25% of the bank as exposed substrate. Strim the sward down tightly in August and remove arisings after one week. Control colonisation by undesirable/invasive species such as thistles, nettles, bindweed																									
Beetle bank	Mow 50% of the area each year and remove arisings. Do not cut in the bird nesting season.																									
Biodiverse roofs on the inverter houses	The substrate is not to be seeded but allowed to naturally develop its own ecosystem. Once a year in late autumn cut down any growth to below 100mm and remove arisings. Pull out and dispose of any tree and shrub seedlings. Pull out and remove any undesirable plants such as bramble, bind weed, ragwort, nettles etc. Check that the roof drainage system is functioning and make any repairs as necessary.																									
Enhanced habitat for reptiles and amphibians	Check condition of log pile sites and rebuild if necessary or establish new ones in a different part of the site.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
General maintenance	Regularly inspect all internal and perimeter fencing and gates for the development will be regularly checked to ensure it is safe and fit for purpose. Repairs and replacement of fencing and gates will be made as soon as practically possible as and when required. Ensure gravel paths are smooth with no potholes and are shedding water to the sides, particularly around kissing gates. The facility will be kept clean and litter free. Appropriate response to acts of vandalism, fly tipping and graffiti to be undertaken swiftly with repair or replacement implemented as soon as practically possible. Check footpath direction signs, and information boards are in good working order ad make any necessary repairs as promptly as possible.																									

APPENDIX D: Summary of management tasks over the operational life of the facility

FEATURE	PRESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	On to end of op.
Ecological monitoring	Undertake in accordance with the ecological monitoring programme (Table 2). Undertake monitoring surveys at the relevant period for the habitat types and prepare condition survey sheets as set out in Biodiversity Metric Guidance. Make recommendations for altering the management regime or undertaking additional works and alter the LEMP accordingly. Prior to decommissioning an ecologist shall survey the Site to identify any ecological constraints that need to be considered by the contractor responsible for removing the electrical infrastructure. The ecologist shall make recommendations for protecting ley habitats and species.																									

APPENDIX E: CRITERIA FOR MONITORING HABITAT CONDITIONS AS THEY ESTABLISH

Natural England Joint Publication JP039

The Biodiversity Metric 3.0

auditing and accounting for biodiversity

TECHNICAL SUPPLEMENT

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www.gov.uk/natural-england

NATURAL ENGLAND

ANNEX 1: CONDITION SHEETS

4 Ditch

5 Grassland – Low Distinctiveness

6 Grassland – Medium, High & Very High

8 Hedgerow

15 Line of Trees

16 Orchard

17 Pond

19 Scrub

20 Sparsely Vegetated Land

24 Woodland

25 Wood-pasture & Parkland

4 Ditch

Condition Sheet: DITCH Habitat Type	
UKHab Habitat Type(s)	
Rivers and streams - Ditches	
Habitat Description	
Artificially created, linear water-conveyancing features that are less than 5 m wide and likely to retain water for more than 4 months of the year. Their hydraulic function is primarily for land drainage, and although partially or fully connected to a river system, they would not have been present without human intervention' *[Note: some heavily engineered ditches may actually be part of the river system (usually part of the headwater system). If there is uncertainty, consult historic maps, LIDAR data and riverine specialists]*	
Condition Assessment Criteria	
1	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.
2	A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of emergent, floating or submerged plants in a 20 m ditch length.
3	There is less than 10% cover of filamentous algae and/or duckweed (these are signs of eutrophication).
4	A fringe of marginal vegetation is present along more than 75% of the ditch.
5	Physical damage evident along less than 5% of the ditch, such as excessive poaching, damage from machinery use or storage, or any other damaging management activities.
6	Sufficient water levels are maintained; as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.
7	Less than 10% of the ditch is heavily shaded.
8	There is an absence of non-native plant and animal species[1].
Condition Assessment Result	**Condition Assessment Score**
Passes 8 of 8 criteria	Good (3)
Passes 6 or 7 of 8 criteria	Moderate (2)
Passes 0, 1, 2, 3, 4 or 5 of 8 criteria	Poor (1)
Notes	
Footnote 1 - Any species included on the Water Framework Directive UKTAG GB High Impact Species List should be absent. • Frequently occurring non-native plant species include water fern *Azolla spp.,* Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides,* Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* (on the bank). • Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes,* carp *Cyprinus carpio*.	

5 Grassland – Low Distinctiveness

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)	
UKHab Habitat Type(s)	
Grassland - Modified grassland	
Habitat Description	
See UKHab	
Condition Assessment Criteria	
1	There must be 6-8 species per m^2. Note - if a grassland has 9 or more species per m^2 it should be classified as a moderate distinctiveness grassland habitat type. **NB - this criterion is non-negotiable for achieving good condition.**
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
6	Cover of bracken less than 20%.
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.
Condition Assessment Result	**Condition Assessment Score**
Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	Good (3)
Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria	Poor (1)
Notes	
Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, greater plantain Plantago major, white clover *Trifolium repens*, cow parsley *Anthriscus sylvestris*.	

6 Grassland – Medium, High & Very High Distinctiveness

Condition Sheet: GRASSLAND Habitat Type (medium, high & very high distinctiveness)	
UKHab Habitat Type(s)	
Grassland - Lowland calcareous grassland **Grassland - Lowland dry acid grassland** **Grassland - Lowland meadows** **Grassland - Other lowland acid grassland** **Grassland - Other neutral grassland** **Grassland - Tall herb communities*** **Grassland - Upland acid grassland** **Grassland - Upland calcareous grassland** **Grassland - Upland hay meadows** **Sparsely vegetated land - Calaminarian grassland**	
Habitat Description	
See UKHab	
* Note Tall herb habitat that does not meet the definition of Annex 1 habitat 'Tall herb communities (H6430)' should be recorded as "Other neutral grassland"	
Condition Assessment Criteria	
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species[1] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.
Condition Assessment Result	**Condition Assessment Score**
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)
Notes	
Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens*, cow parsley *Anthriscus sylvestris.*	

8 Hedgerow

UKHab Habitat Type
Native hedgerow **Native hedgerow - associated with bank or ditch** **Native hedgerow with trees** **Native hedgerow with trees - associated with bank or ditch** **Native species rich hedgerow** **Native species rich hedgerow - associated with bank or ditch** **Native species rich hedgerow with trees** **Native species rich hedgerow with trees - associated with bank or ditch**
Habitat Description
See Chapter 8 of User Guide
Condition Assessment Criteria
A series of ten attributes, representing key physical characteristics, are used for this assessment. The attributes, and the minimum criteria for achieving a favourable condition in each, are defined. The attributes use similar favourable condition criteria to the Hedgerow Survey Handbook and the handbook is the recommended source of reference for assessing individual hedgerow attributes.

Hedgerow favourable condition attributes		
Attributes and functional groupings (A, B, C, D & E)	**Criteria (the minimum requirements for 'favourable condition'**	**Description**
Core groups - applicable to all hedgerow types		
A1. Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).
A2. Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion

			for up to a maximum of four years (if undertaken according to good practice[4]).
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
B2.	Gap - hedge canopy continuity	· Gaps make up <10% of total length and · No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · measured from outer edge of hedgerow, and · is present on one side of the hedge (at least)	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).
C2.	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (Urtica spp.), cleavers (Galium aparine) and docks (Rumex spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).
Additional group - applicable to hedgerows with trees only			
E1.	Tree age	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	This criterion addresses if there are sufficient mature trees (within the scope of planning timescales) which are of higher value to biodiversity.
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.

Each attribute is assigned to one of five functional groups (A – E), as indicated in Table TS1-2 and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria according to the approach set out in Table TS1-3.

The hedgerow condition assessment generates a score ranging from 1-3, which is used within the biodiversity metric 3.0. The scores for each are set out in tables TS1-3 and TS1-4 below.

Condition categories for hedgerows without trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Metric Score**
Good	No more than 2 failures in total; AND No more than 1 in any functional group.	3
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1
Condition categories for hedgerows with trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Metric score**
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1

16 Orchard

Grassland - Traditional orchard	
Habitat Description	
See UKHab	
Condition Assessment Criteria	
1	Presence of ancient[1] and / or veteran[2] trees. **NB - this criterion is non-negotiable for achieving good condition.**
2	Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and/or scattered scrub growing between trees can be beneficial to biodiversity, however these should occupy less than 10% of ground cover.
3	There is evidence of formative and/or restorative pruning to maintain longevity of trees.
4	Presence of standing and/or fallen dead wood: all mature trees have standing or fallen branches, stems and stumps greater than 10 cm diameter associated with them.
5	At least 95% of the trees are free from damage caused by humans or animals e.g. browsing, bark stripping or rubbing on non-adjusted ties.
6	Sward height is varied (between 5 cm and 30 cm) and small patches of bare ground are present creating structural diversity. Up to 10% cover of patches of tall herb vegetation may be present.
7	Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.
8	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[3] make up less than 10% of ground cover.
Condition Assessment Result	**Condition Assessment Score**
Passes 6, 7 or 8 of 8 criteria, including non-negotiable criterion 1	Good (3)
Passes 4 or 5 of 8 criteria; OR Passes 6 or 7 of 8 criteria, excluding non-negotiable criteron 1	Moderate (2)

Passes 0, 1, 2 or 3 of 8 criteria	Poor (1)

Notes

Footnote 1 - Ancient trees are exceptionally valuable. Attributes can include: its great age in comparison with other trees of the same species; size, especially very wide trunk; condition; biodiversity value as a result of significant wood decay and the habitat created from the ageing process; and cultural and heritage value. Very few trees of any species become ancient.

Ancient trees can be classified using the following girth guide at 1.5 m from the ground:

- >2.5m for field maple, rowan, yew, birch, holly and other smaller tree species;
- >4m for oaks, ash, Scot's pine, alder;
- >4.5m for sycamore, lime, horse chestnut, sweet chestnut, elm species, poplar species, beech, willows, other pines and exotics.

Footnote 2 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400 cm^2;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Footnote 3 - Species considered undesirable for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica.*

17 Pond

Condition Sheet: POND Habitat Type	
UKHab Habitat Type(s)	
Lakes - Ponds (priority habitat) **Lakes - Ponds (non-priority habitat)** **Lakes - Temporary lakes, ponds and pools** [Use this condition sheet for Temporary ponds and pools, use Lake condition sheet for Temporary lakes] **Lakes - Ornamental lake or pond** [Use this condition sheet for Ornamental ponds, use Lake condition sheet for Ornamental lakes]	
Habitat Description	
See UKHab other than for non-priority ponds, which are those which do not meet either the definition of (i) priority habitat ponds or (ii) ornamental ponds	
Condition Assessment Criteria	
CORE CRITERIA - applicable to all ponds (woodland[1] and non-woodland):	
1	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.
2	There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.
3	Less than 10% of the pond is covered with duckweed or filamentous algae.
4	The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.
5	Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.
6	There is an absence of non-native plant and animal species[2].
7	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.
ADDITIONAL CRITERIA - only applicable to non-woodland ponds:	
8	In non-woodland ponds, plants, be they emergent, submerged or floating (excluding duckweeds)[3], should cover at least 50% of the pond area that is less than 3 m deep.

9	The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.
Condition Assessment Result	**Condition Assessment Score**
If 8 criteria assessed (woodland ponds):	
Passes 7 of 7 criteria	Good (3)
Passes 5 or 6 of 7 criteria	Moderate (2)
Passes 0, 1, 2, 3 or 4 of 7 criteria	Poor (1)
If 10 criteria assessed (non-woodland ponds):	
Passes 9 of 9 criteria	Good (3)
Passes 6, 7 or 8 of 9	Moderate (2)
Passes 0, 1, 2, 3, 4 or 5 of 9 criteria	Poor (1)

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.

Footnote 2 - Any species included on the Water Framework Directive UKTAG GB High Impact Species List should be absent.

• Frequently occurring non-native plant species include water fern *Azolla spp.,* Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides* and Japanese knotweed *Fallopia japonica,* giant hogweed *Heracleum mantegazzianum* (on the bank).
• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes,* carp *Cyprinus carpio*.

Footnote 3 - If the pond is seasonal (i.e. dries out in most summers) then emergent species alone are likely to be found.

				be notified, see footnote for details.	
3	**Water Quality**	No visual evidence of pollution. There are no nuisance algal growths that are likely to be attributable to nutrient enrichment. Seasonality of the assessment should be considered; peak bloom time is July – September	Visual evidence of low to moderate levels of pollution. elevated algal growth with increases in cover that may indicate nutrient enrichment. Seasonality of the assessment should be considered; peak bloom time is July – September.	Visual evidence of high algal growth that is indicative of nutrient enrichment. Signs of eutrophication that would impede bird feeding. Seasonality of the assessment should be considered; peak bloom time is July – September.	
4	**Non-natural structures and direct human impacts**	No evidence of impacts from direct human activities (including pontoons, moorings, boats, crab tiles, bait digging or anchoring scars) or they occupy <1% of the habitat area.	Some evidence of impacts from direct human activities (including pontoons, moorings, boats, crab tiles, bait digging or anchoring scars), occupying up to 10% of the habitat area.	Some evidence of impacts from direct human activities (including pontoons, moorings, boats, crab tiles, bait digging or anchoring scars), occupying over >10% of the habitat area.	
5	**Litter (when examining a beach strandline /mean high water line or intertidal rocky shore)**	Following the MCS beach litter survey method the number of items of litter does not exceed 0.0036 m^{-1} min^{-1} $person^{-1}$ equivalent to up to 21 items per person per 100m per hour. See Nelms 2017 *et al* and the link to the MSFD threshold value assessment[3].	Following the MCS beach litter survey method the number of items of litter does not exceed 0.0078 m^{-1} min^{-1} $person^{-1}$ equivalent to between 20 and 47 items of litter per 100m survey per person per hour. See Nelms 2017 *et al* and the link to the MSFD threshold value assessment[3].	Following the MCS beach litter survey method the number of items of litter exceeds 0.0078 m^{-1} min^{-1} $person^{-1}$ equivalent to more than 47 items of litter per 100m survey per person per hour. See Nelms 2017 *et al* and the link to the MSFD threshold value assessment[3].	
				Total score (out of a possible 15)	
Condition Assessment Result					
TOTAL SCORE >12 (75-100%) = **GOOD CONDITION** **TOTAL SCORE 8 - 12** (50--75%) = **MODERATE CONDITION** **TOTAL SCORE 5-7** (0-50%) = **POOR CONDITION**					
Notes					

Footnote 1 - The rocky shore macroalgal index enables an assessment of the condition of the rocky shore by looking at the macroalgal taxonomic composition and cover. WFD's Reduced Species List for the Macroalgae Tool.
https://www.wfduk.org/sites/default/files/Media/Environmental%20standards/Annex%2015%20Transitional%20and%20coastal%20waters%20opportunistic%20macroalgal%20blooming%20tool.pdf

Footnote 2 - Abundances estimated using SACFOR scales details available here:
http/archive.jncc.gov.uk/pdf/04_05_introduction.pdf
Use MSFD non-native species list for up to date list of species available here:
https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=1518
High risk undesirable species at time of publication include:
• *Didemnum vexillum* – Carpet sea squirt
• *Hemigrapsus spp.* – Asian Shore crabs (*H. sanguineus*, *H. takanoi* or *H. penicillatus*)
• *Corella eumyota* – Orange-tipped sea squirt
• *Grateloupia turuturu* – Devil's tongue weed, gracie, red menace and red tide
• *Schizoporella japonica* – Orange ripple bryozoan
Please check for updates of high risk species

Footnote 3 - Please see Nelms et al (2017) for methodological details to identify litter m^{-1} min^{-1} $person^{-1}$.
Nelms, Coombes, Foster, Galloway, Godley, Lindeque & Witt (2017) Marine anthropogenic litter on British beaches: A 10-year nationwide assessment using citizen science data Science of The Total Environment, Volume 579, 1 February 2017, p. 1399-1409
https://www.sciencedirect.com/science/article/pii/S0048969716325918?via%3Dihub
The indicator thresholds for litter are based on the methods in Van Loon et al (2020), which is guidance developed within the Common Implementation Strategy for the Marine Strategy Framework Directive by the MSFD Technical Group on Marine Litter.
Van Loon, W., Hanke, G., Fleet, D., Werner, S., Barry, J., Strand, J., Eriksson, J., Galgani, F., Gräwe, D., Schulz, M., Vlachogianni, T., Press, M., Blidberg, E. & Walvoort, D., 2020. A European Threshold Value and Assessment Method for Macro Litter on Coastlines. EUR 30347 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-21444-1, doi:10.2760/54369, JRC121707
https://www.researchgate.net/publication/344340540_A_European_Threshold_Value_and_Assessment_Method_for_Macro_Litter_on_Coastlines

19 Scrub

Condition Sheet: SCRUB Habitat Type	
UKHab Habitat Type	
Heathland and shrub - Blackthorn scrub **Heathland and shrub - Bramble scrub** **Heathland and shrub - Gorse scrub** **Heathland and shrub - Hawthorn scrub** **Heathland and shrub - Hazel scrub** **Heathland and shrub - Mixed scrub** **Heathland and shrub - Sea buckthorn scrub (Annex 1)**	
Habitat Description	
See UKHab	
For sea buckthorn scrub use Habitats Directive Annex 1 definition	
Condition Assessment Criteria	
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.
Condition Assessment Result	**Condition Assessment Score**
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)
Notes	
Footnote 1 - Species considered undesirable for this habitat type include: creeping thistle *Cirsium arvense*, common nettle *Urtica dioica*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* (or hybrids).	

24 Woodland

Condition Sheet: WOODLAND Habitat Type

This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here: https://woodlandwildlifetoolkit.sylva.org.uk/assess

UKHab Habitat Type(s)

Woodland and forest - Lowland beech and yew woodland
Woodland and forest - Lowland mixed deciduous woodland
Woodland and forest - Native pine woodlands
Woodland and forest - Other coniferous woodland
Woodland and forest - Other Scot's pine woodland
Woodland and forest - Other woodland; broadleaved
Woodland and forest - Other woodland; mixed
Woodland and forest - Upland birchwoods
Woodland and forest - Upland mixed ashwoods
Woodland and forest - Upland oakwood
Woodland and forest - Wet woodland

Habitat Description

See UKHab

Condition Assessment Criteria

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
1	**Age distribution of trees**[1]	Three age classes present	Two age classes present	One age class present	
2	**Wild, domestic and feral herbivore damage**	No significant browsing damage evident in woodland[2]	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	
3	**Invasive plant species**[3]	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	
4	**Number of native tree species**	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	
5	**Cover of native tree and shrub species**	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	
6	**Open space within woodland**[4]	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	

		threshold of 10% does not apply			
7	**Woodland regeneration**[5]	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	
8	**Tree health**	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	
9	**Vegetation and ground flora**	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	
10	**Woodland vertical structure**[6]	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	
11	**Veteran trees**[7]	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	
12	**Amount of deadwood**	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	
13	**Woodland disturbance**[8]	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	
				Total score (out of a possible 39)	

Condition Assessment Result	Condition Assessment Score
Total score >32 (33 to 39)	Good (3)
Total score 26 to 32	Moderate (2)
Total score <26 (13 to 25)	Poor (1)
Notes	

Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch, cherry or Sorbus: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). A recognisable age class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Check for presence of the following invasive non-native species: American skunk cabbage *Lysichiton americanus;* Himalayan balsam *Impatiens glandulifera;* Japanese knotweed *Fallopia japonica;* Cherry Laurel *Prunus laurocerasus;* Shallon *Gaultheria shallon;* Snowberry *Symphoricarpos albus;* Variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum;* and Rhododendron *Rhododendron ponticum.*

Footnote 4 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (e.g. glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (e.g. tarmac, buildings, rivers). Area is at least 10m wide with less than 20% covered by shrubs or trees.

Footnote 5 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, the regeneration indicator is gathers additional information by considering regeneration potential i.e. if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 6 - This indicator is looking at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer.

Footnote 7- See EWBG method INDICATOR 12 for more information. All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400 cm^2;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Footnote 8 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery or animal poaching; litter.

25 Wood-pasture & Parkland

Condition Sheet: WOOD-PASTURE & PARKLAND Habitat Type	
UKHab Habitat Type(s)	
Woodland and forest - Wood-pasture and parkland	
Habitat Description	
See UKHab	
Condition Assessment Criteria	
1	Presence of ancient[1] and / or veteran[2] trees.
2	Trees are of a range of different ages to ensure replacement. Three age classes are present and must include at least one of the following: mature[3], late-mature[3], ancient or veteran trees.
3	Presence of standing and / or fallen deadwood: • Wood-pasture - All ancient and veteran trees have standing deadwood, large dead branches, stems and stumps associated with them. • Parkland - 80% of ancient and veteran trees have standing deadwood, large dead branches, stems and stumps associated with them.
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities, livestock or wild animals, or pests or diseases (e.g. no evidence of poaching, nettles, ground compaction, bare ground under trees or grazing damage to bark and roots).
5	Ground cover comprises semi-natural grassland or heathland.
6	Grassland or heathland habitat is subject to an appropriate management regime: • Grassland - Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. • Heathland - There is a range of age classes of heather present, with the following proportions: pioneer heather 10-40%, building/mature heather 20-80%, degenerate heather <30% and dead heather <10%.
Condition Assessment Result	**Condition Assessment Score**
Passes 6 of 6 criteria	Good (3)
Passes 4 or 5 of 6 criteria	Moderate (2)
Passes 0, 1, 2 or 3 of 6 criteria	Poor (1)
Notes	

Footnote 1 - Ancient trees are exceptionally valuable. Attributes can include: its great age in comparison with other trees of the same species; size, especially very wide trunk; condition; biodiversity value as a result of significant wood decay and the habitat created from the ageing process; and cultural and heritage value. Very few trees of any species become ancient.
Ancient trees can be classified using the following girth guide at 1.5 m from the ground:

- >2.5 m for field maple, rowan, yew, birch, holly and other smaller tree species;
- >4 m for oaks, ash, Scot's pine, alder;
- >4.5 m for sycamore, lime, horse chestnut, sweet chestnut, elm species, poplar species, beech, willows, other pines and exotics.

Footnote 2 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400 cm^2;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Footnote 3 - Mature trees are close to their full height and crown size, these dimensions being determined by species and site factors. Late-mature trees are still close to their full height and crown size while main-stem diameter (which by now is large) increases more slowly.

ANNEX 2: CONDITION ASSESSMENT PROFORMA

CONDITION ASSESSMENT PROFORMA FOR USE WITH BIODIVERSITY METRIC 3.0 - AREA BASED HABITATS														
Date							Metric 3.0 survey reference (if condition assessment of this polygon relates to a wider habitat survey)							
Weather conditions														
Surveyor name(s)							Unique polygon reference(s)							
Project / development name							Metric 3.0 habitat type							
Site name or location							Condition assessment required? (y/n)							
Onsite or offsite?							Condition sheet used							
Reason for assessment (if not baseline condition survey)														
Limitations (if applicable)														
Habitat description														
Allocate pass 'P' or fail 'F'. Allocate 'NA' to any irrelevant criteria numbers where condition sheet contains fewer than 13 criteria. For Woodland & Intertidal condition sheets, allocate scores of '1' '2' or '3' against each criterion assessed.														
Criterion	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	**TOTAL**
Result														
Photo ref														
Target note ref														
Are any criteria non-negotiable? (Y/N) If Yes are they passed?							Condition (Good/Moderate/Poor):							
Suggested enhancement interventions to improve condition score														

APPENDIX F: ERECTION OF NEST BOXES

NEST BOXES TO BE ERECTED THROUGHOUT THE SITE

Locations to be chosen by a qualified ecologist

Nest boxes should be cleaned at the end of each bird breeding season. All nesting material and other debris should be removed from the box. It should then be scrubbed clean with boiling water to kill any parasites (avoid using any chemicals). Once the box is clean, it should be left to dry out thoroughly. Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore annual cleaning is best undertaken from October to January when there is no risk of disturbing breeding birds.

Six No Tawny Owl Boxes (two of each type)

Tawny owls prefer to nest in areas of woodland or well-wooded parks, squares and large gardens with tall, mature trees and whilst will forage in this habitat, will also forage in areas of grassland, and scrub habitat. Tawny owls have several roost sites which they will use at different times of the year.
The best box is a chimney-style box made to mimic the hollow, rotten end of a broken branch with internal dimensions of approximately 795mm x 230mm x 230mm, open at the upper end.

The nest box can be fixed at an angle of 45° in a large tree fork, or slung beneath a sloping branch, or fixed by an angled strip of wood to a vertical trunk. Drainage holes should be present in the bottom with wood chips or stone chippings inside.

Tawny owl		
Example	**Description**	**Picture**
Schwegler Tawny Owl Box No 5	www.schwegler-nature.com https://www.nhbs.com/no-5-schwegler-owl-box The front panel can be removed for inspection and cleaning purposes. The floor should be covered by a layer of sawdust or similar material.	
Tawny owl wooden nest box	https://www.vinehousefarm.co.uk/wooden-nest-boxes-tawny-owl/ The Tawny Owl Nest Box is made to order with FSC timber, felt roof and eco friendly preservative. There is a ledge to provide a	

Tawny owl		
Example	**Description**	**Picture**
	safe area for the chicks when they first emerge as well as a door to the side to allow for cleaning and inspection. Built based on BTO guidelines.	
Tawny owl nest box	https://www.nhbs.com/tawny-owl-nest-box The Tawny Owl Nest Box is made from plywood and should be mounted to the underside of a branch at an angle of 45° or less to the vertical (see image). It is recommended that ratchet straps or polypropylene rope (not included) are used to secure the box as these will cause minimal damage to the tree. In populated areas the box should be sited at a minimum of 3.7m from the ground. In quieter or more remote locations, it may be placed at a height of 3m. Always ensure that the entrance of the box is facing away from the prevailing wind.	

Twenty No Generalist Boxes

Boxes to attract garden birds and woodland breeding species such as tits, nuthatch, redstart and pied flycatcher can be placed in gardens, orchards, woodlands and a wide variety of other habitats. The species of birds attracted to the box will depend upon the size of the entrance hole (see table below).

Boxes should be fixed two to five metres up a tree or wall, out of the reach of predators such as domestic cats. Unless there are trees or buildings, which give permanent shelter, it is best facing between north and east.

General		
Schwegler No. 1B General Purpose Nest box	www.schwegler-nature.com Suitable for various garden and woodland birds, created with different sized entrance holes to avoid competition between species. Other variations (e.g. 2M) can be free hanging, to deter predators.	
Entrance Hole	**Species**	
26 mm	Blue tit and coal tit, possibly wren. All other species are prevented from using the nest box due to this smaller entrance hole	
32 mm	Great-, blue-, and coal tit, nuthatch, house sparrow	
Oval	Redstart; also used by species that nest in the diameter 32 mm boxes. However, because more light enters the brood chamber, it is preferred by redstarts.	