

CRAYS HALL SOLAR FARM

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN V5.0

ON BEHALF OF: BOOM DEVELOPMENTS LIMITED

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 PLANNING  DESIGN  ENVIRONMENT  ECONOMICS

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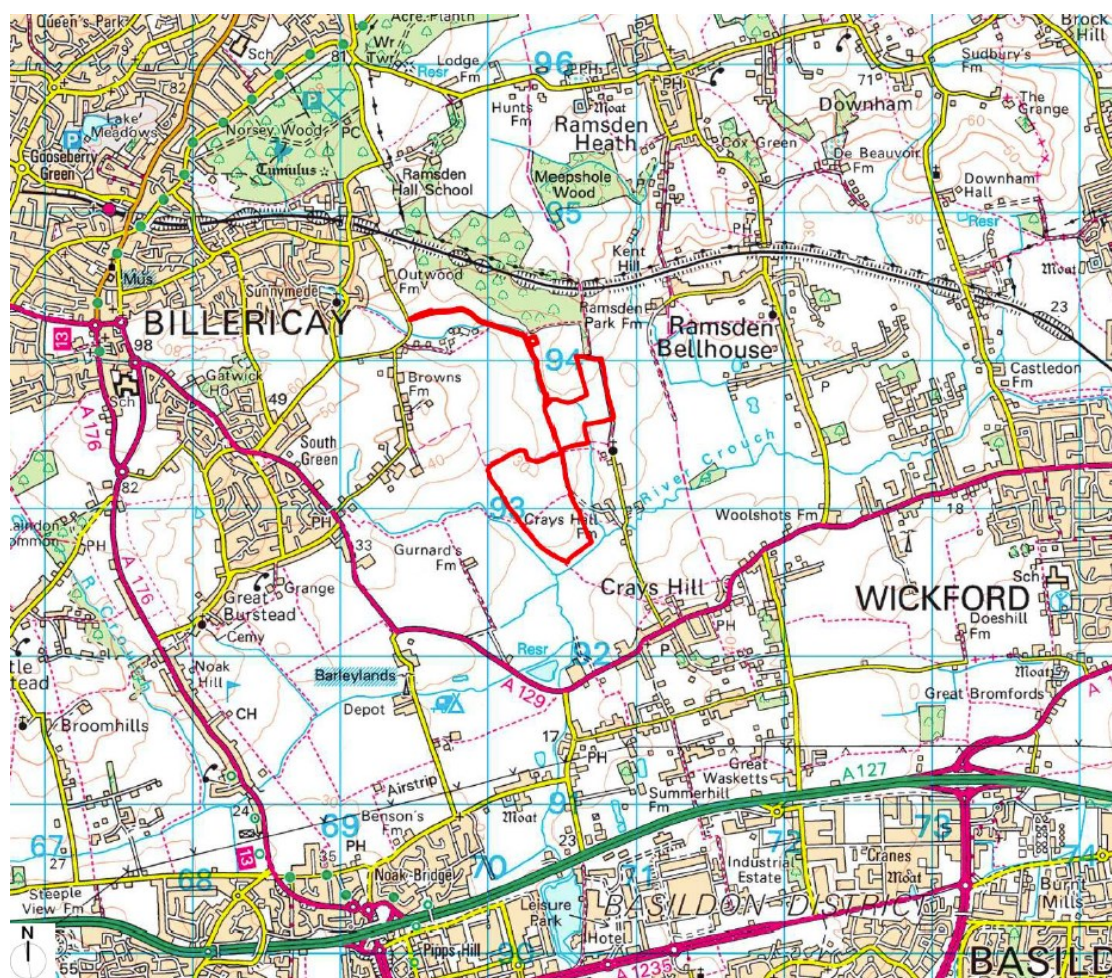
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1. Introduction

1.1 This Landscape and Ecological Management Plan (LEMP) has been prepared by Pegasus Group, with input from Clarkson & Woods Ltd, in relation to the Crays Hall Solar Farm and on behalf of Boom Developments Limited. It relates to the proposal for the installation of a solar farm with associated equipment and infrastructure located to the west of Church Lane and Crays Hall Farm and to the north of Crays Hill village, Essex. The extent of the site is shown below.



1.2 The LEMP has been prepared in order to inform discharge of planning condition 10 of approved planning 22/00296/FULL (Basildon District Council, under appeal ref: PP/V1505/W/23/3318171, approved on 30/08/2023). Condition 10 is extracted below:

10. Before any works commence, a Landscape and Ecological Management Plan (LEMP) shall be submitted to and be approved in writing by the local planning authority prior to first exportation to the National Grid. The content of the LEMP shall include the following:

- (a) Description and evaluation of features to be managed;*
- (b) Ecological trends and constraints on site that might influence management;*
- (c) Aims and objectives of management;*
- (d) Appropriate management options for achieving aims and objectives;*
- (e) Prescriptions for management actions;*
- (f) Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period);*
- (g) Details of the body or organisation responsible for implementation of the plan;*
- (h) Ongoing monitoring and remedial measures;*
- (i) a timetable for the works.*

The LEMP shall include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. The plan shall also set out (where the results from monitoring show that conservation aims and objectives of the LEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme. The approved plan will be implemented in accordance with the approved details and timetable.

1.3 This LEMP will ensure the delivery and ongoing management of the detailed landscape proposals for both ecological and landscape and visual benefits. A landscape masterplan has been produced, detailing the type and location of proposed planting and a supporting indicative plant schedule. The landscape masterplan drawing is included in Appendix 1.

1.4 This LEMP draws on the findings and recommendations, and should be read alongside, the Crays Hall Landscape and Visual Impact Assessment (Pegasus Group, July 2022); the Ecological Impact Assessment (Clarkson & Woods, February 2022) and Biodiversity Net Gain Report (Clarkson and Woods, February 2023).

1.5 A separate Construction Ecological Management Plan, Biodiversity Enhancement Plan and Farmland Bird Mitigation Strategy have been prepared for the Site by Engain (Aug and Sept 2022), as submitted under planning reference

23/01187/COND. These documents have been reviewed as part of the LEMP and referenced where applicable.

- 1.6 The baseline ecological site conditions are detailed within the Ecological Impact Assessment for the Site. The Site provided potential habitat for a range of protected species within the habitats it supports and will likely continue to support in the future within the operational solar array site. These include records of badgers in the local area as well as potential sett building habitat, potential for foraging, commuting and roosting bats, potential for otter and water voles, specifically along the River Crouch, potential dormouse habitat within the hedgerows, potential reptile and amphibian habitat within the grassland and field boundaries and potential to support an range of nesting and foraging birds. Landscape proposals and associated management operations have taken these species into consideration to optimise the value of the operational site for local biodiversity and ensure sensitive timings of operations to avoid impacts on species which may be present.
- 1.7 The upcoming Environment Act will make a 10% Biodiversity Net Gain (BNG) (for all Biodiversity Units types (habitats and linear (hedgerow and watercourse)) a legal requirement, using the Biodiversity Metric and approval of a BNG Plan. It is expected the mandatory requirement will come to place in January 2024. Although a BNG assessment using the Metric is not yet mandatory, it is already required by most Local Authorities to demonstrate compliance with the NPPF. Management and monitoring detailed within this LEMP is in line with the BNG report (v2.0, 2023).
- 1.8 The National Planning Policy Framework, September 2023 (NPPF) identifies ways in which the planning system should contribute to and enhance the natural and local environment (section 15), including minimising impacts upon biodiversity and promoting net gains where possible. Opportunities to enhance biodiversity in and around developments are to be encouraged which are resilient to current and future pressures and as such local authorities have a responsibility to ensure that such opportunities are taken.
- 1.9 The proposed solar farm presents considerable opportunity for biodiversity enhancement. This LEMP has been prepared to ensure that the opportunities for enhancement are realised.

2. Scope

- 2.1 The purpose of this LEMP is to:

- Set out the agreed objectives for landscape management of the site;
 - Set clear standards for the performance of landscape maintenance work;
 - Assist in the development of work programmes for landscape maintenance staff;
 - Establish landscape maintenance responsibilities; and
 - Help monitor success and progress against the objectives
- 2.2 The LEMP provides management regimes and schedules for the habitats and key ecological features present (or expected to be present) within the site, as well as details of responsible personnel. Long-term monitoring of the site is also specified to evaluate success and progress against the aims and objectives, and to provide strategies for identifying and implementing remedial measures if required.
- 2.3 This LEMP has been prepared in accordance with guidelines set out within the Biodiversity – Code of Practice for Planning and Development, British Standard 42020:2013.
- 2.4 Guidance provided by the Building Research Establishment (BRE)¹ and Solar Energy UK² sets out a series of opportunities to enhance solar farms for local wildlife, provide additional ecosystem services and contribute to national biodiversity targets. This LEMP reflects the recommendations set out within this guidance.
- 2.5 The prescriptions laid out in this LEMP relate to the construction phase and Years 1 to 5 during the occupation/operation of the development. After 5 years, the details of this plan must be reviewed by competent and qualified persons and revised if necessary. Once this period has elapsed, the LEMP will be rolled forward and implemented in perpetuity and for no less than the lifespan of the array. Monitoring of the Site will be required after 5 years, as detailed in Section 5. The LEMP may be modified at any time to address issues identified at the Site, although any significant changes to the LEMP must be sent to the LPA for approval.

¹ BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker and L Greene.

² Natural Capital Best Practice Guidance – Increasing Biodiversity at All Stages of a Solar Farm’s Lifecycle (2022) Solar Energy UK

3. Landscape Design and Ecological Aims

- 3.1 The overall aim for the LEMP is to manage existing landscape features along with new planting, for the benefit of local wildlife, as well as to ensure long term visual enclosure of the development. The aims will be achieved through a series of objectives and the identification of management operations to achieve these.
- 3.2 The baseline and proposed ecological value of the site has been calculated using the Defra Biodiversity Metric 3.0. This is set out in the Biodiversity Net Gain Report. On the basis of the aforementioned report the LEMP seeks to achieve:
- **93.89%** biodiversity net gain in terms of habitat units (HU)
 - **53.35%** biodiversity net gain in terms of linear features (hedgerow units – HeU)
- 3.3 This LEMP provides management prescriptions to ensure that the habitats and their required conditions, as detailed within the BNG assessment (v2.0, 2023), are achieved.
- 3.4 The Plan sets out a strategy for the lifetime of the solar farm. Periodic updating of this document may also be required where monitoring surveys identify management issues.

4. Responsible Personnel & Lines of Communication

Boom Developments Limited

- 4.1 Boom Developments Limited shall be responsible for the implementation of this LEMP and will appoint a land manager to carry out the operational objectives of this document (detailed in Section 4 below). Should the site be sold, responsibility of the LEMP would be passed on to the new owner.

Land Manager

- 4.2 The land manager would be responsible for the implementation of the LEMP during the operational phase. The land manager will be provided with a copy of this LEMP and liaise with Boom Developments Limited and the consultant ecologist where required to ensure that the stipulated measures are being implemented correctly.

Ecologist

- 4.3 The ecologist shall be appropriately qualified. Clarkson and Woods are happy to provide an ecologist, though the developer may appoint another suitably qualified ecologist to fulfil this role.
- 4.4 The ecologist will be appointed to carry out the monitoring as set out within this LEMP. They will also be required to provide advice on positioning of habitat boxes and potentially advise on other aspects of habitat creation and management.

5. Landscape Design and Ecological Management and Maintenance Objectives and Prescriptions

Grassland

- 5.1 Following construction of the solar panels and all infrastructure, all areas of bare earth within the red line boundary of the site, will be sown with grass seed.
- 5.2 Between the security fencing and existing/proposed hedgerows, a suitable native, UK origin tussock seed mixture shall be sown (e.g. Emorsgate EM10 or Habitat Aid's Tussock Mixture).
- 5.3 Within the security fence line, in the fields of ex-cereal crops (surrounding the solar panels) and any bare areas within the ex-pasture fields, a suitably diverse, grazing seed mixture shall be sown, to allow for sheep grazing between the panels. This will need to have a minimum of 10 species/m² to qualify as 'Other Neutral Grassland'. A mix such as Habitat Aid's Solar Farm Wildflower Meadow Seed Mix would be suitable, although an alternative mix could be used. Testing of the soil nutrient levels will occur prior to sowing to ensure that the correct mix is chosen for the soil type and that nutrient index levels are suitable for establishment. With the exception of any discrete bare areas, seeding over the area of existing pasture will not be required.
- 5.4 Both mixes shall be sown in accordance with the elements below.

Ground Preparation

- 5.5 Following the installation of the array, reinstatement works should include the removal of larger stones and other debris to ensure the ground is suitable for use with mowers.
- 5.6 Subsequent to the last crop being removed, no fertilizer will be added to the arable land on the site.
- 5.7 Prior to seeding, the ground will be harrowed and rolled, using a tine harrow in order to avoid damaging underground wiring. If such a requirement arises to harrow with discs, caution should be exercised to ensure newly installed underground services are not damaged during harrowing.
- 5.8 If there is an abundance of annual or perennial weeds, then small areas of the site may be treated with herbicide prior to seeding.

Seeding

- 5.9 All seeding will take place ideally in mid-spring or late summer to mid-autumn. Seed will be sown in the first year following completion of underground wiring, and be broadcast by machine (fertiliser spreader, slug pellet applicator, grass seed box) and rolled where possible. The gaps between rows of panels are to be wide enough to accommodate a tractor travelling between them for harrowing, sowing and rolling purposes. In areas where a machine is unable to access, such as underneath panels, seeding in these areas should be broadcast by hand. Seeds can be mixed with a substrate such as sand or sawdust for ease of broadcasting.

Hedgerow and Woodland Planting

- 5.10 New hedgerows and woodland are to be planted in numerous locations within the site. All planting will be in accordance with the density, species and spacings as set out on the plant schedule on the Landscape Masterplan in Appendix 1.
- 5.11 Areas of existing hedgerow within the site will be improved by select areas of infill planting where there are gaps greater than 1m, to ensure the hedgerow acts as a visual screen. Where there are gaps in the existing hedgerow, new plants will be planted with the same density, species and spacings as for new hedgerows.

Ground Preparation

- 5.12 Hedge trenches shall be dug 450mm wide x 450mm depth and woodland planting pits shall be dug 450mm width x 300mm depth. The base of trenches and pits will be broken up before returning the approved topsoil backfill mixture to the trench at the rate of one part compost to two parts topsoil. All extraneous matter such as plastic, wood, metal and stones greater than 100mm diameter will be removed from the planting stations and disposed of offsite.

Planting

- 5.13 Bare-root plants will be planted in accordance with the density, species and spacings as set out on the detailed landscape proposals. Plants must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface.
- 5.14 All plants will conform to BS 3936 -1 (1992); and be in accordance with the National Plant Specification. Supplying nurseries will be registered under the HTA Nursery Certification Scheme. All parts will be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE.

- 5.15 Preparation of the planting environment (including de-compaction and drainage) should be at least to the standards set out in British Standard 4428 (1989) Code of Practice for General Landscape Operations (excluding hard surfaces).
- 5.16 All transplants/whips will be protected from rabbit damage using rabbit proof fencing or individual spirals/shrub guards, as advised by the manufacturer. Any spiral/shrub guards used that are not biodegradable, will be removed approximately three years after planting or once established.
- 5.17 All plants will be watered in at the end of each day of planting/or as required. After planting, a 50mm layer of approved compost fine bark (nominal size 1-10mm) shall be spread along the hedge trench to 1m wide or spread around the pit of each woodland plant at 1m wide.

Tree Planting

- 5.18 Tree planting is proposed throughout the site, either within new woodland or hedgerows, or near to site boundaries.

Ground Preparation and Tree Pit Excavation

- 5.19 All tree planting pits will be 1m x 1m x 900mm deep, with the bottom of pits broken up to a depth of 150mm and sides of tree pits scarified to break up the subsoil. All extraneous matter such as plastic, wood, metal and stones greater than 100mm diameter removed from the planting pit and disposed of off-site.

Planting of Trees

- 5.20 Trees shall be planted in locations as set out on the landscape masterplan, set centrally within the pit to the level of the original root collar. Backfill material shall consist of a mixture of one part compost to two parts topsoil. Trees shall be well firmed-in and secured with stakes, proprietary rubber tree ties and spacers. All trees will be held so that movement at the root collar is minimised until new roots have developed to anchor the tree. Therefore, low double staking (75mm diameter x 1.4m minimum length) will be used and attached to the tree at approximately 600mm above ground level. The trees will be staked using proprietary rubber ties and must be firmly fixed with a spacing device used to prevent chafing against the tree.

- 5.21 All trees will be protected from rabbit and deer damage by the fitting of suitable tree guards. Guards used will be removed upon establishment of the tree, unless guards are biodegradable.
- 5.22 Composted bark mulch (nominal size 1-10mm) will be spread to a depth of 75mm in a 1m diameter circle around all individual tree stations.
- 5.23 All trees shall be watered in at the end of each day of planting or as appropriate.

OPERATIONAL PHASE

- 5.24 The following objectives through the operational phase of the proposed development are as follows:
1. To maintain and manage existing field boundary hedgerows to a height of 3m or above, to safeguard visual enclosure and retain as wildlife corridors;
 2. To establish and maintain new areas of proposed tree, hedgerow and woodland planting on the site;
 3. To manage the new and retained grassland habitats and establish a diverse sward surrounding the solar panels and elsewhere on the site; and
 4. To monitor the site and assess the success of management.
- 5.25 In order to achieve the objectives outlined, the following management prescriptions have been identified.

Existing Hedgerows

- 5.26 A total of 2.46km of existing hedgerow habitat will be retained within the Site and managed to remain in the same habitat condition as the baseline assessment.
- 5.27 Existing hedgerows shall be left to grow with minimal selective thinning and maintained to a height of 3m or above.
- 5.28 During establishment, dead, dying and diseased wood is to be removed and replaced with stock of a similar size and species by the appointed contractor. If the failure of the plant is due to disease and the disease is considered likely to re-occur, then an alternative native species of local provenance may be used as a replacement. Planting should ideally be undertaken between the months of December and February.

- 5.29 Hedgerows across the whole site to be cut on a rotational basis, i.e. not all hedgerows in the same year. This will maintain a resource of flowering and fruiting plants across the site, create nesting and foraging habitat for wildlife, and prevent hedgerows becoming leggy.
- 5.30 Established hedgerows will be cut between late September and February and no cutting or trimming is to be undertaken during the breeding bird season (1st March to 31st August inclusive).
- 5.31 Ground flora will be cut at the base of hedges on a 3 year rotation to 150mm height, with arisings removed. This is to maximise the value of the habitat for overwintering and foraging insects and prevent scrub establishment. Cutting is to take place in September/October (see 5.55 – 5.63).

Existing Trees

- 5.32 Management operations will ensure health and safety inspections are carried out at 12-15 month intervals to note any:
- major deadwood that needs to be removed from crowns;
 - split or damaged branches, storm damage, hung-up limbs, and jagged or open wounds that require tidying;
 - forks, cavities and major defects that could result in structural failure, cavities, cracks or bark wounds at the base of trees, together with bracket fungus. An arboriculturalist will probe cavities as required to determine the course of action;
 - basal suckers or epicormic growth that require removal from the main trunk;
 - poor quality trees with structural defects, such as forked trunks that may require pruning or felling; and
 - diseases.
- 5.33 Ivy on tree trunks will be retained, except where it needs to be removed to facilitate inspection of trees or where it has become extensive and could result in a tree falling in high winds.
- 5.34 Should works to trees be required, the following shall be adhered to:

- Before felling or management operations such as pruning or ivy removal, the tree shall be checked for bat roosts and other protected species;
- All tree works should ideally be undertaken in January and February to avoid bird breeding season; and
- All tree works to be in accordance with BS 5837:2012: Trees in Relation to Design, Demolition and Construction: Recommendations.

New & Infill Hedgerows

- 5.35 A total of 2.51km of hedgerow habitat will be enhanced within the Site. Hedgerows assessed as being in poor or moderate habitat condition during the baseline survey will be enhanced through infill planting and appropriate management regimes to achieve a 'good' habitat condition.
- 5.36 A total of 0.69km new native species rich hedgerow will be planted within the Site. These hedgerows will be managed to achieve a 'good' habitat condition.
- 5.37 A total of 0.73km of new native species rich hedgerow with trees will be planted within the Site. These hedgerows will also be managed to achieve a 'good' habitat condition.
- 5.38 All hedgerows will be managed to achieve 'good condition', as per Tables 1 and 2. To achieve 'good condition' they will need to have no more than 2 failures in total and no more than 1 failure in any functional group. This LEMP is aimed to achieve the require number of criteria. The timescales to achieve these criteria are detailed below:

Table 1: Hedgerow Target Condition years

Hedgerow	Target Condition Year
Newly created Native sp-rich hedgerow (good condition)	Year 12
Newly created Sp rich hedgerow with trees (good condition)	Year 20
Enhanced hedgerows Native sp-rich hedgerow with bank/ditch of moderate condition to good condition	Year 4
Native sp-rich hedgerow with bank/ditch of poor condition to good condition	Year 10

Table 2: Hedgerow Condition Assessment Criteria (Natural England 2023)

Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)	Criteria - the minimum requirements for 'favourable condition'	Description	Criterion passed (Yes or No)	Notes (such as justification)	
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 the 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 (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >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).		
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	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 hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow.		
C2.	Nutrient-enriched 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 <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.		
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .		
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 hedgerow cutting).		
Additional group - applicable to hedgerows with trees only					
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.		
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.		

Boom Developments Limited
Crays Hall Solar Farm
Landscape and Ecological Management Plan

The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the metric. The scores for each are set out in the tables below.

Condition categories for hedgerows without trees		
Category	Category Requirements	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 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and 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 and B2 = Poor condition).	1
Score achieved:		
Condition categories for hedgerows with trees		
Category	Category Requirements	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 and 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 and B2 = Poor condition).	1
Score achieved:		

- 5.39 All canes, spirals or guards shall be regularly checked and adjusted or replaced as required. Base of all hedges to be kept weed-free with a minimum of 4 x applications of systematic herbicide per growing season; or a combination of visits to manually remove weeds in conjunction with the use of herbicide, during the first three years. Thereafter, the ground flora is to be allowed to develop naturally in order to contribute to the wildlife value of the hedgerow and managed as an existing hedgerow.
- 5.40 Any litter to be cleared at the same time as weed control operations.
- 5.41 All new hedge lines shall be regularly watered in times of drought to field capacity and shall receive an application of slow-release fertiliser for at least the first year (where soil nutrient testing deems this necessary).
- 5.42 Plants will remain upright and adjusted during treatment of weeds. Rabbit protection will be retained/replaced until no longer needed, when it will be removed from site and disposed of. This is to be checked annually.
- 5.43 All hedges shall be allowed to grow up to a minimum of 3m high and maintained at 3m or above. Any plants that fail to thrive shall be replaced with stock to the original specification.

- 5.44 Annual inspection is to be undertaken in September to replace dead/diseased plants at the end of each growing season and to be replaced within the first five years after planting. Pruning will be undertaken to promote healthy growth, where required, between late September – February to avoid bird breeding season.
- 5.45 Bark mulch to be topped up annually or as required, to maintain 50mm deep layer, until the plants have established.
- 5.46 Once new and infill sections of hedgerows have established, management operations are to reflect those as set out for existing hedgerows.

New Woodland Planting

- 5.47 New native woodland planting will be created along the northern boundary of the Site, planted at a minimum depth of 5m with larger standard trees planted throughout to give variation in height and age structure. A target created condition of Poor is considered to be achievable for this habitat. In order to achieve 'Poor condition' the below management prescriptions will be required. Woodland should achieve it's target condition by Year 5 with a score of >13 as per Table 3.

Table 3: Woodland Condition Assessment Criteria (Natural England 2023)

Condition Assessment Criteria					
Indicator	Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.		
B 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 ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .		
C Invasive plant species	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.		
D Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.		
E Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .		
F Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .		
G Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .		
H Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .		
I Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.		
J Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .		
K Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.		
L Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .		
M Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .		
Total Score (out of a possible 39)					
Condition Assessment Result			Condition Assessment Score	Result Achieved	
Total score >32 (33 to 39)			Good (3)		
Total score 26 to 32			Moderate (2)		
Total score <26 (13 to 25)			Poor (1)		

5.48 Operations within new areas of woodland planting will ensure:

- dead, dying and diseased wood and suckers will be removed annually to promote healthy growth, a natural shape and to avoid health and safety concerns;
- dead, missing, dying or defective plants will be replaced annually for the first 5 years after implementation;
- all tree stakes, ties and guards will be adjusted/replaced/removed as required until anchorage has been achieved and checked annually;
- rabbit/deer protection will be maintained until no longer needed and then removed. This will be checked annually;
- weed-free ground, including the remove of invasive weeds, will be maintained with the use of translocated, non-residual herbicides, until the canopy closes, in order to avoid competition for water and nutrients. This will be done four times a year, reducing to two times a year when the canopy is closed;
- Any litter to be cleared at the same time as weed control operations.
- a slow release fertiliser (4:19:10) will be spread annually in early March in the first year of planting or replanting after defects replacements;
- plants overhanging roads will be trimmed back annually; and
- plants will be watered in dry weather in the initial three year establishment period. Beyond the establishment period, watering will be in times of drought.

New Trees

5.49 A number of individual trees will be planted on Site. Under the BNG assessment these are targeted to achieve a 'moderate condition' by Year 27, passing 3 – 4 of the criteria within Table 4.

Table 4: Individual Tree Condition Assessment Criteria (Natural England 2023)

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The tree is a native species (or at least 70% within the block are native species).		
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).		
C	The tree is mature (or more than 50% within the block are mature).		
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.		
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.		
F	More than 20% of the tree canopy area is oversailing vegetation beneath.		
Number of criteria passed			
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved ×/□	
Passes 5 or 6 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.			

5.50 Operations for new tree planting will ensure:

- dead, dying and diseased wood and suckers will be removed annually to promote healthy growth, a natural shape and to avoid health and safety concerns;
- dead, missing, dying or defective plants will be replaced annually for the first 5 years after implementation;
- all tree stakes, ties and guards will be adjusted/replaced/removed as required until anchorage has been achieved. This will be done annually;
- rabbit/deer protection will be maintained until no longer needed and then removed. This will be checked annually;
- weed-free ground will be maintained with the use of translocated, non-residual herbicides, in order to avoid competition for water and nutrients. This will be done four times a year;
- a slow release fertiliser (4:19:10) will be applied in early March in the first year of planting or replanting after defects replacements;

- plants will be watered in dry weather in the initial three year establishment period. Beyond the establishment period, watering will be in times of drought; and
- trees to be maintained upright and adjustments will be made following strong winds.

Grassland

5.51 Areas of 'Other Neutral Grassland' are proposed within the southern portion of the Site, to be sown over the area of existing cropland. All habitat under panels or along access tracks has been targeted as 'Poor condition', to be achieved by Year 2, with the remainder targeted as 'Moderate condition' by Year 5. Habitat condition will be assessed against criteria in Table 5.

Table 5: Other Neutral Grassland Condition Assessment Criteria (Natural England 2023)

Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
<p>A The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.</p> <p>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</p>		
<p>B Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p>		
<p>C Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens¹.</p>		
<p>D Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.</p>		
<p>E Combined cover of species indicative of sub-optimal condition² 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.</p> <p>If any invasive non-native plant species³ (as listed on Schedule 9 of WCA⁴) are present, this criterion is automatically failed.</p>		
Additional Criterion - must be assessed for all non-acid grassland types		
<p>F There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count).</p> <p>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</p>		

5.52 Grassland in the northern portion of the Site, currently used for pasture, will be targeted as a slightly less diverse habitat, classified as 'Modified (grazing) Grassland'. The condition of grassland under panels in this area will be retained as existing, of 'Moderate condition'. The majority of modified grassland habitat within this area, including both newly seeded, and enhanced habitat (not subject to panel

shading) will be targeted of 'Good' condition. Poor condition grassland should meet target condition by Year 1, moderate by Year 4 and good by Year 10.

5.53 Management of Modified (grazing) grassland detailed within this LEMP has been specified in order to achieve the required condition criteria (as presented in Table 6 below). Good condition grassland will need to have at least 6 – 8 species per m² in addition to fulfilling at least 5 further criteria.

Table 6: Modified Grassland Condition Assessment Criteria (Natural England 2023)

Condition Assessment Criteria		Criterion passed (Yes or No)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	
C	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	
Essential criterion achieved (Yes or No)		
Number of criteria passed		
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved ×/□
Passes 6 or 7 criteria including passing essential criterion A	Good (3)	
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)	
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	

5.54 To achieve the desired habitats and required conditions the following management prescriptions will occur:

Tussock (Other Neutral) Grassland (outside the security fences)

Mowing:

5.55 The grassland shall be mown under differing regimes for Year 1 after seeding and subsequent years, as detailed below.

5.56 Mowing will only take place during periods of dry weather to ensure that no waterlogged ground is damaged by machinery.

5.57 The grassland will not be improved by chemical fertilizer or slurry and nutrient levels in the soil should be allowed to reduce over time.

5.58 All arisings should remain on site for at least three to five days following the cut to allow seeds to disperse, and then either removed from site or placed on habitat piles within field margins.

5.59 All reasonable effort will be made to collect arisings. Where this is not possible cutting will use a mulching attachment to prevent the build-up of thatch. As a last resort arisings may be left but more frequent monitoring may be required to assess the grassland condition.

Year 1

5.60 Newly seeded grassland will be subject to regular cutting to a height of 15cm or 20cm, during the first year of establishment in order to prevent annual weeds from establishing. This shall constitute a cut 6-8 weeks after sowing and then a further 2-3 times spread out through the year.

5.61 The frequency of cutting will be increased should annual weeds establish.

Subsequent Years

- 5.62 After the first year following seeding, grassland will be cut on a rotational basis, with half of the field margins being cut every other year.
- 5.63 Cutting will take place in September or October, with the grassland cut to approximately 15-20cm. Arisings will be removed where possible. A mulching attachment can be used to help prevent thatch build up where arisings can not be collected.

Grazing Grassland (within the security fences)

Mowing:

- 5.64 The grass area shall be mown during Year 1 after seeding and grazed by sheep during subsequent years, as detailed below.

Year 1:

- 5.65 The mowing regime during Year 1 shall mirror that set out above for Tussock Grassland.

Subsequent Years

- 5.66 After the first year following seeding, grassland will be managed by low-intensity grazing in accordance with the landowners' requirements.
- 5.67 The following indicators will be used to review and amend stocking densities:
- An increase in the amount of uneaten grass, the accumulation of litter, an increase in vigorous rank and unpalatable grasses, and a reduction in low growing herbs: indicates stocking density is too low (need to increase density).
 - Excessive poaching, weed invasion and the development of bare patches: indicates stocking density is too high (need to reduce density).
- 5.68 Any herbicide applications to control weeds (through spot spraying) should be undertaken immediately after sheep have been removed from a grazing area.
- 5.69 Where grazing is not possible the Site can be mown. To ensure that the species diversity is maintained, and therefore target habitats and conditions are achieved, arisings should be collected where possible. Any arisings which can not be collected

will be mulched rather than left in-situ. Cutting should occur late July - September, aiming to achieve a height of 5 – 10cm.

- 5.70 It is not anticipated that arisings can be collected from under panels. Shade cuts under panels will be undertaken as required for panel efficiency and to minimise fire risk.

Injurious Weeds

- 5.71 The land will be managed to ensure that any of the five injurious weeds (Weeds Act 1959) do not proliferate or spread on the site. The five species include:

- Common ragwort *Senecio jacobaea*
- Spear thistle *Cirsium vulgare*
- Creeping or field thistle *Cirsium arvense*
- Broad-leaved dock *Rumex obtusifolius*
- Curled dock *Rumex crispus*

- 5.72 Should any of these species become problematic (i.e. a spread to more than 10% of the total field), management prescriptions may need to be altered.

- 5.73 Firstly, the weeds will be cut to ground level prior to or during flowering (but before setting seed). A further cut may be required in autumn (September/October, during dry weather).

- 5.74 Should the spread of weeds remain at >10% after two years of cutting, weeds may require further treatment. Either:

- Spot treated with a broad spectrum, non-persistent herbicide; or
- Treated with a species-specific selective weed killer.

- 5.75 Should herbicides be utilised, the ecologist will be contacted prior to use for further advice. There are likely to be restrictions in terms of herbicide use in proximity to watercourses so this requires careful consideration and used only as a last resort.

- 5.76 Blanket spraying of herbicide will be avoided. Spraying within 10m of the River Crouch will be avoided. Any use of herbicide in or near the watercourse will not occur unless otherwise approved by the Environment Agency.

Creation of Habitat Piles

- 5.77 Any wood and grass removed during habitat management or other work operations should be kept in habitat piles. These should be placed along the edge of

hedgerows, near water courses and boundaries of woodland, in order to provide valuable invertebrate habitat and shelter for other species including small mammals, amphibians and reptiles. These should be placed in the same locations each year.

Watercourse

5.78 A tributary of the River Crouch runs through the Site. No management of this feature is required or proposed under this LEMP. Annual inspections of trees will check for any fallen specimens within the river and remove the debris as necessary.

Monitoring

5.79 Monitoring will be carried out by suitably qualified (and where necessary, licensed) ecologists to assess the ecological development of the site in Years 1, 2, 4 and 5. Monitoring will follow methodologies detailed within the Solar Energy UK Guidance; A Standardised Approach to Monitoring Biodiversity on Solar farms (2022) as well as required to inform BNG. Monitoring beyond 5 years to be determined following the year 5 monitoring visit.

5.80 The monitoring strategy is set out below:

Year (years post-construction)	Focal Species / Group	Description
1, 2, 4 and 5 (and beyond as required)	UKHab Survey and condition assessment of habitats	<p>Biodiversity Net Gain monitoring.</p> <p>Mapping of all habitats within the redline boundary using the UKHab categories. These can then be used to track Biodiversity Net Gain to ensure the target habitat types and conditions are on track to being achieved. Grassland surveys to include min 3 quadrats per distinct habitat type. In line with Solar UK Guidance quadrats to include 5 quadrats beneath panels, 5 quadrats between panels and 5 quadrats within outside the array. Surveys to occur in June/July prior to any hay cuts.</p> <p>Habitat condition assessments required as per BNG criteria.</p> <p>After Year 5 the monitoring requirements will be reviewed. In line with BNG, monitoring will need to occur to ensure that the habitats all establish as intended and achieve their desired condition. Target condition years for all habitats to be delivered on Site are provided below:</p> <p><u>Newly created habitats</u></p> <ul style="list-style-type: none"> Other Neutral Grassland (moderate condition) – Target condition year 5

Year (years post-construction)	Focal Species / Group	Description
		<ul style="list-style-type: none"> • Other Neutral Grassland (poor condition) Target condition year 2 • Woodland (poor condition) – Target condition year 5 • Modified (poor condition) - Target condition year 1 • Modified (moderate condition) Target condition year 4 • Urban/rural tree (moderate condition) – Target condition year 27 <p><u>Enhanced grassland</u></p> <ul style="list-style-type: none"> • Modified grassland of moderate condition enhanced to ONG of moderate condition or Modified of good condition – Target condition year 10 <p><u>Newly created hedgerows</u></p> <ul style="list-style-type: none"> • Native sp-rich hedgerow (good condition) Target condition year 12 • Sp rich hedgerow with trees (good condition) Target condition year 20 <p><u>Enhanced hedgerows</u></p> <ul style="list-style-type: none"> • Native sp-rich hedgerow with bank/ditch of moderate condition to good condition Target condition year 4 • Native sp-rich hedgerow with bank/ditch of poor condition to good condition - Target condition year 10
1, 2, 4, 5	Birds/bats/dormice/hibernacula	External inspection of habitat boxes/hibernacula to check that they are still in place and fit for use. Refer to Engain’s Enhancement Plan for box locations.
1, 2, 4, 5	Fixed Point Photographs	A number of fixed-point photographs to be taken across the site to allow a visual assessment of change over time.
1, 2, 4, 5	Ad-hoc Sightings	Observations of species and any associated behaviours/numbers to be recorded during the time spent on site.

5.81 Biological monitoring will ensure the habitat is establishing as intended and will track the development of the sward. Monitoring will also give an early warning of any injurious weeds or vegetation failure that may occur.

6. Maintenance Schedule for the First Five Years

- 6.1 The following maintenance schedule sets out all maintenance operations to be undertaken on the site for the initial five years. Unless otherwise amended as part of the monitoring the progress of management and maintenance on site, these operations should continue for the lifetime of the development.

Prescriptions	Operation Phase											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Management of Tussock and Grazing Grassland – YEAR 1 <i>Cutting of newly seeded grassland to prevent unwanted weeds.</i> <i>Re-seed as necessary.</i>												

Prescriptions	Operation Phase											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<p>Management of Tussock Grassland – SUBSEQUENT YEARS <i>Half of margins cut every other year. Re-seed as necessary.</i></p>									Grass cut	Grass cut		

Prescriptions	Operation Phase											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Management of Grazing Grassland - SUBSEQUENT YEARS <i>Re-seed as necessary.</i>	<i>Light grazing/mowing</i>											
Management of Injurious Weeds for Tussock Grassland, Grazing Grassland, Woodland & Hedgerows – Existing and Proposed	<i>Cut prior to / during flowering</i>								<i>Further cut if required</i>			
Existing Hedgerow Management <i>Rotational Cutting every 2/3 years. No more than 1/3 cut in any one year.</i>	<i>Trimmed to a minimum height of 3m</i>								<i>Trimmed to a minimum height of 3m</i>			

Prescriptions	Operation Phase											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Existing Tree and Woodland Management Following an annual inspection and inspection by a bat licensed ecologist.	Any works on trees to be carried out								Any works on trees to be carried out			
New/Infill Hedgerow Management and New Tree and Woodland Management Slow-release fertiliser for the first year (where necessary). Replace dead/diseased plants for first 5 years. Prune as required. Weed control 4 times per year for first 3 years.	Trimmed/ Pruning to a minimum height of 3m		Slow release fertiliser applied	Weeding over growing period				Trimmed/ Pruning to a minimum height of 3m				
	Replacement of poor stock and adjusting guards							Inspection of planting	Replacement of poor stock and adjusting guards			
Monitoring In years 1, 2, 4 and 5 by a suitably experienced ecologist.	Various surveys											

APPENDIX 1
Landscape Masterplan
(P21-3208.003)



KEY

- Site boundary
- EXISTING**
 - Trees and vegetation
 - Trees to be removed
 - Overhead line and 10m offsets
 - Public rights of way
- PROPOSED**
 - Woodland / native buffer mix
 - Tree planting
 - Native hedgerow planting
 - Tussock grassland (outside the security fence)
 - Grazing grassland (within the security fence)

Indicative plant list

TREES	
Species	Size
Acer campestre	10-12cm diam.; 300-350cm ht.; 2x feathered; 7 breaks; B
Alnus glutinosa	10-12cm diam.; 300-350cm ht.; 2x feathered; 7 breaks; B
Betula pendul	10-12cm diam.; 300-350cm ht., 2x feathered.; 7 breaks, B
Betula pubescens	10-12cm diam.; 300-350cm ht., 2x feathered.; 7 breaks, B
Carpinus betulus	10-12cm diam.; 300-350cm ht., 2x feathered.; 7 breaks, B
Corylus avellana	10-12cm diam.; 300-350cm ht., 2x feathered.; 7 breaks, B
Malus sylvestris	10-12cm diam.; 300-350cm ht., 2x feathered.; 7 breaks, B
Quercus robur	10-12cm diam.; 300-350cm ht.; 2x feathered; 7 breaks; B
Sorbus aucuparia	10-12cm diam.; 300-350cm ht.; 2x feathered; 7 breaks; B

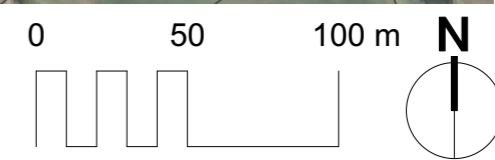
Native Hedgerow	
Species	Size
Acer campestre	100-125cm ht.; 1+2; transplant; seed-raised; B
Corylus avellana	80-100cm ht.; 1+2; Transplant - seed raised; branched; 4 breaks; B
Crataegus monogyna	100-125cm ht.; 1+2; Transplant; seed-raised; B
Ilex aquifolium	60-80cm, 5L pot
Prunus spinosa	80-100cm ht.; 1+2; transplant; seed-raised; branched; 3 brks; B
Rosa canina	60-80cm, Branched, 1+1, B
Viburnum opulus	100-125cm ht.; 1+2 Transplant; seed-raised; branched; 3 brks; B

Woodland / Native Buffer Mix	
Species	Size
Acer campestre	125-150cm ht.; 2x; feathered; 3 brks; B
Alnus glutinosa	80-100cm ht.; 1+1; transplant; seed-raised; B
Betula pubescens	150-175cm ht.; 2x; feathered; 3 brks; B
Carpinus betulus	80-100cm ht.; 1+1; transplant; seed-raised; B
Corylus avellana	80-100 ht.; branched; 4 breaks; RB
Ilex aquifolium	60-80cm ht.; 3L; leader with laterals
Malus sylvestris	150-175cm ht.; 2x; feathered; 4 brks; B
Quercus robur	60-80cm ht.; 1+1; transplant; seed-raised; B
Salix fragilis	60-80cm ht.; 0/1; cutting; B
Sorbus aucuparia	150-175cm ht.; 2x; feathered; 3 brks; B
Betula pendula	150-175cm ht.; 2x; feathered; 3 brks; B
Viburnum opulus	80-100cm ht.; 1+2; transplant; seed-raised; branched; 3 brks; B

Standard trees	
Species	Size
Acer campestre	10-12cm diam.; 300-350cm ht, 2x feathered.; 7 breaks, B
Alnus glutinosa	10-12cm diam.; 300-350cm ht, 2x feathered.; 7 breaks, B
Betula pubescens	10-12cm diam.; 300-350cm ht, 2x feathered.; 7 breaks, B
Betula pendula	10-12cm diam.; 300-350cm ht, 2x feathered.; 7 breaks, B
Malus sylvestris	10-12cm diam.; 300-350cm ht, 2x feathered.; 7 breaks, B

NB:
 -all existing and newly-planted hedgerows to be allowed to grow and be maintained to 3m in height or above
 -local character documents and The Essex Design Guide have been reviewed as part of plant species selection

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Rev	Date	By	Note
B	06/09/2022	VR	Amends to plant list
A	14/02/2022	VR	Minor amends

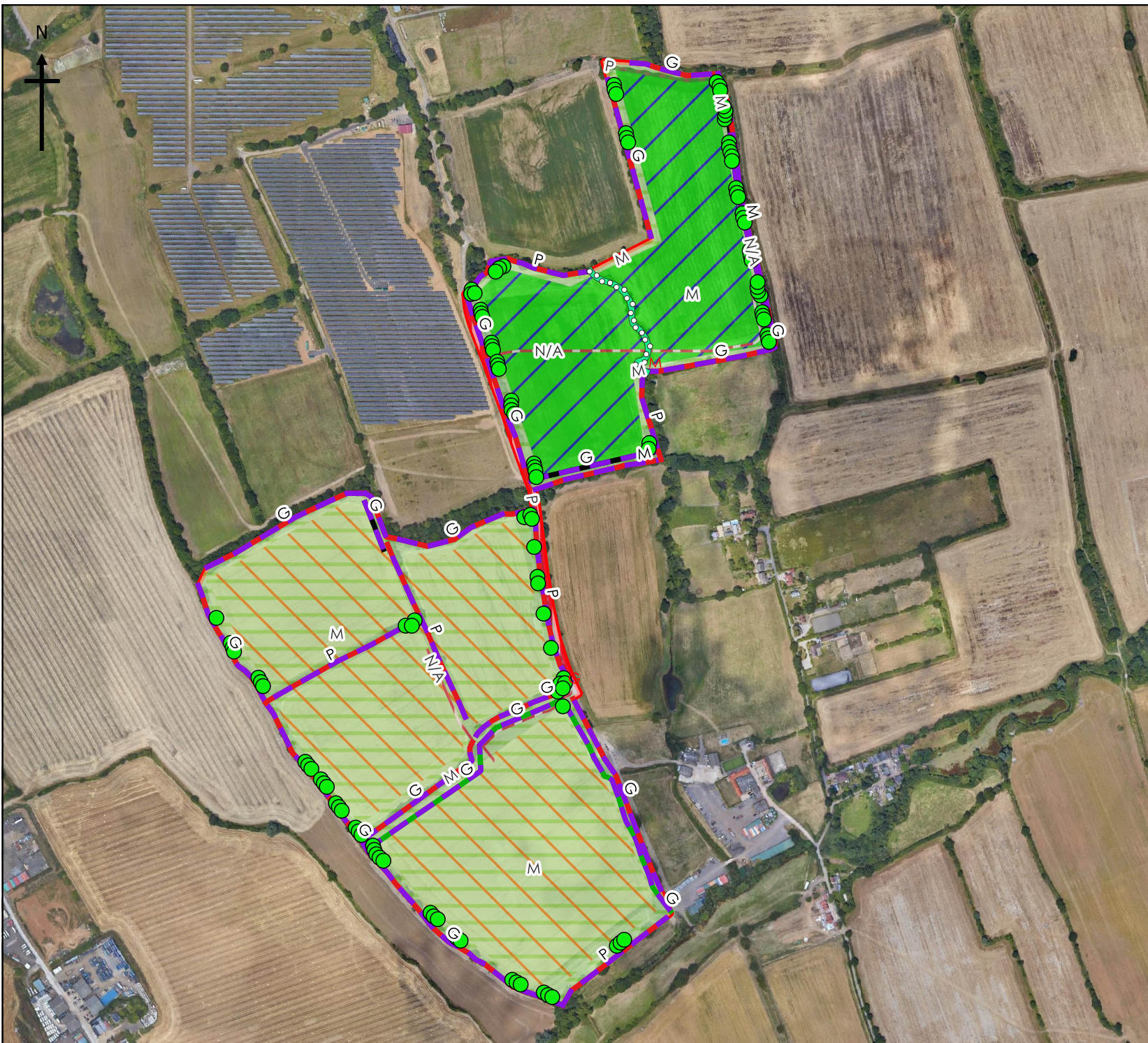
FIGURE 8
LANDSCAPE MASTERPLAN
Crays Hall Solar Farm

Client: Boom Power Ltd. REV: B
 DRWG No: P21-3208.003 Approved by: TH
 Drawn by: VR
 Date: 11/02/2022
 Scale: 1:2,500 @ A1


Pegasus
 Environment

APPENDIX 2


Operational Site: Biodiversity Net Gain Habitat Conditions



Key:

Developed land;
sealed surface 


Modified grassland
mosaic 


Other neutral
grassland 

Other neutral
grassland mosaic 

Other woodland;
broadleaved 

Native species
rich hedgerow 

Native species rich
hedgerow with trees 

Native species rich
hedgerow with trees
and associated ditch 

River Crouch 

Trees 


Habitat Conditions:
P-Poor, M-Moderate, G- Good,
N/A Not Applicable

CLARKSON & WOODS 
ECOLOGICAL CONSULTANTS

Project
Crays Hall Solar Farm

Title
Post-development Habitat Map

Date
Nov 2023

Scale 
0 100 200 m