



Pelham Solar Farm

Landscape and Ecological and Management Plan

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Berden Solar Ltd

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Author:
Sightline Landscape, BA2 2NG

Authors Name:		Chris McDermott, Sightline Landscape	
Client:		Berden Solar Ltd	
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INTRODUCTION

- 1.1. This is the Landscape and Ecological Management Plan (LEMP) for a proposed ground mounted solar farm adjacent to the National Grid Pelham Substation, Essex. The application Location Plan and an aerial photograph of the Site is presented within Appendix A.
- 1.2. The structure of the LEMP is as follows:
 - 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 strategies for achieving aims and objectives.*
 - e. *Prescriptions for management actions.*
 - f. *Preparation of a work schedule*
 - g. *Details of the body or organisation responsible for implementation of the plan.*
 - h. *Ongoing monitoring and remedial measures.*
- 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.
- 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.
- 1.5. This document has been written collaboratively by Sightline, providing the landscaping elements of the LEMP, and Avian Ecology, providing the ecological elements of the LEMP.

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.
- 2.2. The BRE Biodiversity Guidance for Solar Developments (2014) states that plans should:

“identify key elements of biodiversity on site, including legally protected species, species

and habitats of high conservation value such as those listed on Section 41 of Natural Environmental and Rural Communities (NERC) Act 2006, and designated areas in close proximity to the proposed site;

- identify any potential impacts arising from the site's development, and outline mitigations to address these;*
- detail specific objectives for the site to benefit key elements of biodiversity and the habitat enhancements that are planned to achieve these;*
- contribute to biodiversity in the wider landscape and local ecological network by improving connectivity between existing habitats;*
- identify species for planting and suitable sources for seed and plants;*
- consider wider enhancements such as nesting and roosting boxes;*
- summarise a management regime for habitats for the entire life of the site;*
- provide a plan for monitoring the site; and [sic] adapting management as appropriate to the findings of this monitoring; and,*
- set out how the site will be decommissioned."*

2.3. Agricultural Good Practice Guidance for Solar Farms (BRE, NFU 2014) provides guidance on sheep stocking times and rates.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

- 3.1. The proposed development is the construction of a solar farm with battery storage and associated infrastructure. The panels will be mounted on metal frames at a fixed orientation, facing south. Typically, the lower edge will be 900 mm above ground level and the upper edge 2500 mm, with 8 – 10 m between rows.
- 3.2. Inverters and transformers will be distributed evenly within the arrays. A two metre high post and wire deer proof fence will surround the array, set away from the boundary hedges. The fence includes gates for small mammals at the base.
- 3.3. The PRow which pass through the fields in which the array lies will be maintained along the definitive routes, typically within corridors 10 -12 m wide between fencing. All the boundary hedges and those internal to the Site will be retained.

KEY LANDSCAPE AND ECOLOGICAL ISSUES

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 Assessment undertaken by Cherryfield Ecology in 2019 and 2020. A Habitat Survey Plan is presented in Appendix B. The assessment was informed by a desk study review of existing ecological information for the Site and surrounding area. Key points from the assessment which are pertinent to the LEMP are summarised below.
- 4.3. The site consists of arable fields, currently sown with winter wheat, winter oats and spring beans, bounded by grass and herb margins, hedging, a dry ditch system and two small copse. A badger sett has been located in the copse to the eastern side of the site, along with several trees that are suitable for roosting bats. These however are to be retained in the plan and appropriate precautions will be put in place to avoid disturbance to the sett. Skylark was noted on site; these are a UK red list bird and ground nesting. The solar farm is likely to improve conditions for skylark nesting because the majority of the Site slopes gently to the north, resulting in sufficiently wide gaps between the panels for nest sites, combined with the short grass sward proposed within the solar farm.

Landscape Baseline information

- 4.4. A Landscape and Visual Impact Assessment was undertaken between October 2021 and January 2022 by Sightline Landscape which recommended a series of measures to mitigate adverse impacts on landscape character and visual amenity. These recommendations have been incorporated into a comprehensive landscape scheme for the Proposed Development (presented in Appendix C). The key aspects of which are:
 - Native hedges and trees to be planted along public footpaths which either pass through the Site or adjacent to it, to screen the solar farm to users.
 - Native hedges to be planted along the open boundaries to the east to screen the solar farm from footpaths and properties further to the east.
 - Woodland to be planted along the northern boundary to screen the solar farm from Ginns Road and the countryside further to the north.

LANDSCAPE AND ECOLOGICAL OBJECTIVES AND STRATEGIES

- 5.1. 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.
- 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.
- Objective 5:** Increase the number of hedgerow trees and woodland cover within the Site.
- Objective 6:** Retain some agricultural productivity within the Proposed Development if economic and practical.
- Objective 7:** Maintain a free movement of small mammals across the Proposed Development.
- Objective 8:** Maximise the speed of growth of the hedges and trees while ensuring that they do not unduly interfere with the production of electricity, the operation and safety of the facility or unimpeded access along the PRoW.

Strategies

5.2. 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 3.
- Strategy 2:** Manage the existing low growing hedges within the Site at a greater winter cut height, typically 3-5 m. Strategy 2 contributes to meeting Objectives 1, 2, 3 and 4.
- Strategy 3:** Plant new hedges along the PRoW which pass through the Proposed Development and along the open boundaries and manage them so that they develop a dense, well branched form. Strategy 3 contributes to meeting Objectives 1, 2, 3, 4 and 5.
- Strategy 4:** Establish woodland on the northern and eastern boundaries. Strategy 4 contributes to meeting Objectives 1, 2, 3, 4 and 5.
- Strategy 5:** Establish a species rich grass sward within the margins between the deer fence around the solar farm boundary and within the footpath corridors and 2.7 hectares of meadow in the remaining field to the east of the array. Strategy 5 contributes to meeting Objective 2.

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- Strategy 6:** Establish a grazing sward under and around the panels and keep to a manageable height through cutting or grazing. This medium height sward will provide a suitable habitat for skylark nesting and any grazing regime should be timed to avoid disturbance to active nests. Strategy 6 contributes to meeting Objectives 1, 2 and 6.
- Strategy 7:** Provide mammal gates at regular intervals within the deer fencing. Strategy 7 contributes to meeting Objective 9.
- Strategy 9:** Provide nest boxes for birds, bat boxes, hibernacula and enhanced habitat for invertebrates. Strategy 9 contributes to meeting Objective 2.
- Strategy 10** The choice of tree species and the planting locations has been designed to minimise any potential panel shading issues and all trees should be able to achieve a height of 8 m before shading becomes an issue in the more constrained areas. If shading becomes an issue, the trees can be trimmed but must not be cut to below six metres in height. Hedges are to be trimmed back from fence lines if it presents a security issue. Individual trees and woodland on the northern boundary can be left to gain greater stature since shading will not be an issue. Strategy 10 contributes towards meeting objective 8.
- Strategy 11:** 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. This will require an ecological walkover survey in Years 5, 10 and 20. The surveys should be undertaken in May and record the locations of badger setts, the presence/absence of skylarks (if present, estimate breeding pairs) and other notable or protected species. Strategy 11 contributes to meeting Objectives 2 and 7.
- Strategy 12:** Each year for the first five years, a suitably landscape qualified person shall walk the Site in early autumn and record on a site plan any dead or diseased plant stock. This stock is to be removed and replaced with new healthy living stock of similar species and size as originally specified. If there are sign of excessive browsing by deer, which is preventing the trees and hedges meeting mitigation objectives, then additional protection shall be installed. Strategy 12 contributes to meeting Objectives 2, 3 and 4.
- Strategy 13:** After five years the stakes, tree shelter sand guards shall be removed. They should be removed without damaging the plants and appropriately disposed offsite. Strategy 13 contributes to meeting Objectives 2, 3 and 4
- Strategy 14:** After ten years a suitably landscape qualified person shall walk the Site and decide whether the trees within the woodland blocks require thinning to maximise the stature and growth rate of other trees within the block. Typically, the understorey is to be thinned, leaving the trees that are likely to obtain maximum statute. Strategy 12 contributes to meeting Objectives 2, 3 and 4

MANAGEMENT TASKS

6.1. 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	<p>Maximise growth and screening function.</p> <p>Maintain existing value to nesting birds, foraging bats and invertebrates.</p> <p>Enhance value to nesting birds, foraging bats, invertebrates, amphibians and reptiles</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.
Existing hedges	<p>Maximise growth and screening function while maintaining a good structure</p>	<ul style="list-style-type: none"> Existing hedges already taller than 3 m leave as they are and allow to grow to a height of 6-8m, but trim sides to ensure a dense structure is maintained. Existing hedges lower than 3 m. allow to grow up unchecked each season, but trim back each year to leave a height increase of one metre above previous years. Repeat in the second and third years until the hedges are 3 – 5 m high. 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, and to encourage a twiggy structure to enhance screening, especially in winter. 	<ul style="list-style-type: none"> If practical trim 50% of the hedges in one year and 50% in the following year to provide increased cover and food in winter. 	<ul style="list-style-type: none"> Trim in winter, ideally late January/early February (outside the breeding bird season)
New hedges and planting to gap up/thicken existing hedges	<p>To provide a linear wildlife corridor feature.</p> <p>To increase biodiversity potential on site through the</p>	<ul style="list-style-type: none"> Ensure new plants are regularly watered during extended periods of dry weather Check that the plants are upright and secure. Maintain weed free within at the base of new plants by hand weeding. If necessary apply a 	<ul style="list-style-type: none"> Lengthening the time between hedge cutting increases the production of hard and soft mast resulting in an increased foraging 	<ul style="list-style-type: none"> Regular watering for the first 2 years. Checking plants are upright and secure, annually or as required i.e. Particularly after storms, remove

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
	<p>creation of new habitat and strengthened habitat connectivity for dispersal.</p> <p>Enhance value to nesting birds, foraging bats, invertebrates, amphibians and reptiles.</p> <p>Reduce the visibility of the solar farm to users of the PRow and from within the wider landscape.</p>	<p>glyphosate herbicide as a spot spray to in early spring when the deciduous vegetation is still not in leaf to kill pernicious persistent weed growth. Maintain a zone of bare earth 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. Either hand weed or spot treat with a glyphosate herbicide, preferably in gel form.</p> <ul style="list-style-type: none"> • 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 hedges to ensure that they do not impede free access along the PRow (typically a minimum 3 m wide clear route should be maintained at all times). • Cut back branches which hinder safe passage along PRow, including the Permissive footpath. 	<p>resource for wildlife to exploit.</p> <ul style="list-style-type: none"> • 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. 	<p>stakes and guards after 5 years.</p> <ul style="list-style-type: none"> • 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

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
<p>Standard trees</p>	<p>To establish individual trees of full stature along the hedge lines to minimise the adverse effects on landscape character and visual amenity.</p> <p>Increase bird nesting and foraging opportunities on site.</p> <p>Maximise microclimates on site which will enhance biodiversity potential.</p>	<ul style="list-style-type: none"> • 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 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. • 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 PRow, including the Permissive footpath. 	<ul style="list-style-type: none"> • The tree varieties proposed will provide a food source to wildlife throughout the year i.e., through the production of fruits and berries, and the invertebrate potential on site will be maximised. This can in turn serve to increase the overall biodiversity value of the site as increased food resources can attract foraging bats and birds. • Birds may nest in the trees once established. 	<ul style="list-style-type: none"> • 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. • Dead/dying/damaged limbs shall only be removed if they pose a danger to public health and safety.
<p>Woodland planting</p>	<p>To screen the solar farm from the adjacent highways, dwellings and users of PRow, to the north and east of the Site.</p> <p>Establish a greater area of woodland habitat Enhance landscape character.</p>	<ul style="list-style-type: none"> • 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. • 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. • Manage to maximise screening function and consider coppicing. • Cut back branches which hinder safe passage along PRow, including the Permissive footpath. 	<ul style="list-style-type: none"> • The tree varieties proposed will provide a food source to wildlife throughout the year i.e., through the production of fruits and berries, and the invertebrate potential on site will be maximised. This can in turn serve to increase the overall biodiversity value of the site as increased food resources can attract foraging bats and birds. • Birds may nest in the trees once established. 	<ul style="list-style-type: none"> • Only carry out any pruning, thinning or coppicing outside the bird nesting season, typically after Year 10.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
<p>Newly sown species rich grassland between the deer fence and the boundary hedges along footpath corridors and the 2.7 hectares of permanent meadow to be established in the remaining field to the east.</p>	<p>Increase biodiversity value of the habitat.</p> <p>Create foraging, overwintering and refuge opportunities for invertebrates, amphibians and reptiles.</p> <p>Create structurally and species diverse habitat.</p>	<ul style="list-style-type: none"> • Cut/Strim in August or September 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 with a weed suppressant such as Glyphosate or similar chemical (keeping clear of aquatic features). • Occasionally close mow along the lines of PRow and the permissive footpath if a route is not being worn due to use, ie if tall grass is hindering passage. 	<ul style="list-style-type: none"> • The meadow grassland will be subject to a low frequency cutting regime to create a tussocky sward throughout most of the year that provides long term refuge to invertebrates and amphibians and other wildlife. • 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 must result in a sward height no shorter than 150mm to avoid killing/injury to amphibians/reptiles that may be present. 	<ul style="list-style-type: none"> • The meadow grassland will be cut regularly during the first year to maintain good balance between establishing grassland floral species. • After the first year 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. • If the retained grassland (see below) is cut in August, the newly created grassland should be cut in September and vice versa. This will create ongoing variation in sward height at all times of year.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
Agricultural grassland under the panels	<p>Provide a sward which minimises water runoff.</p> <p>Manage a sward that provides fodder for sheep.</p> <p>Establish a sward which is an optimum height for skylark nesting.</p>	<ul style="list-style-type: none"> Seed under and around the panels with the specified mix in appropriate weather conditions (if not seeded before the start of construction). Reseed any areas which remain bare until 100% cover achieved. Control undesirable plant growth within sward if necessary, such as dock, thistle, bramble, nettles, and ragwort by hand excavation/pulling. Graze at appropriate times to ensure the sward remains sufficiently low that it does not shade the panels. Ensure stocking rates and times do not result in overgrazing. Between 4 and 8 sheep/hectare may be achievable (or 2-3 sheep/ ha on newly established pasture), similar to stocking rates on conventional grassland, i.e. between about March and November in the southwest and May to October in North-East England. If the Site is not grazed, the sward is to be cut down to 50 mm high in late July and late October. At any time, cut down any taller growing weeds if they start to shade the solar panels. 	<ul style="list-style-type: none"> The clover content will provide cover and feeding opportunities for invertebrates. Sheep dung will provide feeding opportunities for invertebrates. 	<ul style="list-style-type: none"> Typically graze outside the skylark nesting season. If the Site is not grazed, the sward is to be cut down to 75 mm high in late July and late October.
Refugia for reptiles and amphibians	To increase refuge opportunities and create hibernation potential.	<ul style="list-style-type: none"> Approximate locations shown on the landscape plan. Augment with additional deadwood 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Refuge piles could be occupied by protected species at any time of year and must not be moved at any time. New logs/brush can be added to existing refuge piles in September/October every 5 years.
Bird boxes	Maintain in good order	<ul style="list-style-type: none"> Each year inspect for use and clear out any old nests and debris. Repair or replace damaged boxes. 	<ul style="list-style-type: none"> To maximise and maintain nesting opportunities on the Site. 	<ul style="list-style-type: none"> Bird boxes should ideally be installed in the autumn (September to November) following the cessation of construction works, by the appointed contractor under advice of the suitably competent ecologist.

FEATURE	OBJECTIVE	PRESCRIPTION	ECOLOGY	TIMING
				<ul style="list-style-type: none"> Inspected for loss/damage each year.
Fencing	<p>Maintain in good order to protect the public from the electrical apparatus, exclude deer and livestock.</p> <p>Ensure safe, free movement along the PRoW within the Site.</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Ensure mammal gates are functioning and repair where necessary. 	<ul style="list-style-type: none"> At each visit
Litter and vandalism	<p>Maintaining the Site in good order.</p>	<ul style="list-style-type: none"> 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. 		<ul style="list-style-type: none"> At each visit
Ecological monitoring	<p>To ensure that the biodiversity of the site is being maximised.</p> <p>To identify potentially new ecological constraints (such as a badger sett opening up on the site).</p> <p>To ensure that habitats and species are protected during decommissioning</p>	<ul style="list-style-type: none"> 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. 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. 	<ul style="list-style-type: none"> The ecological walkover must be carried out by a suitably qualified ecologist. 	<ul style="list-style-type: none"> 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.

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

DECOMMISSIONING

7.1. 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.

7.2. 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) and the ground graded back to original levels with a minimum 300 mm depth topsoil.

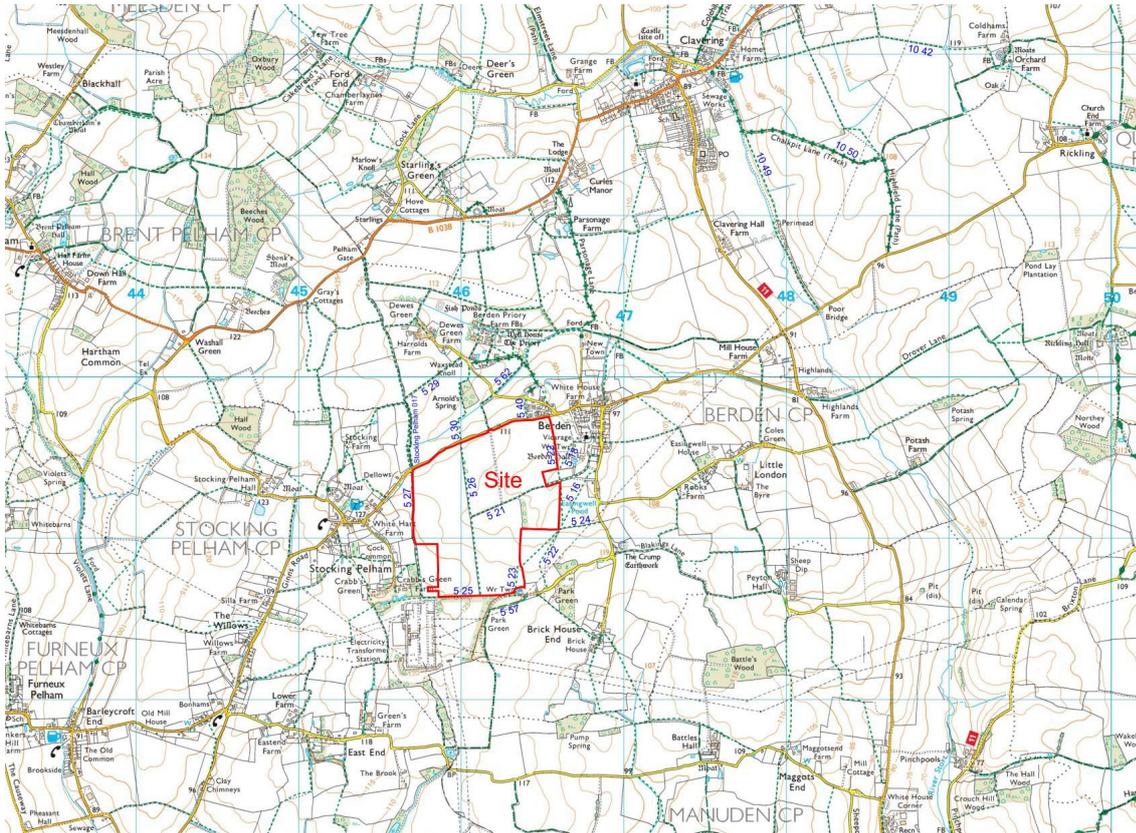
7.3. All trees, hedges and shrubs planted as part of the mitigation shall be retained.

IMPLEMENTATION OF THE LEMP AND RESPONSIBLE ORGANISATION

8.1. The Site will be managed by the company which operates the facility (currently to be Pelham Solar 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

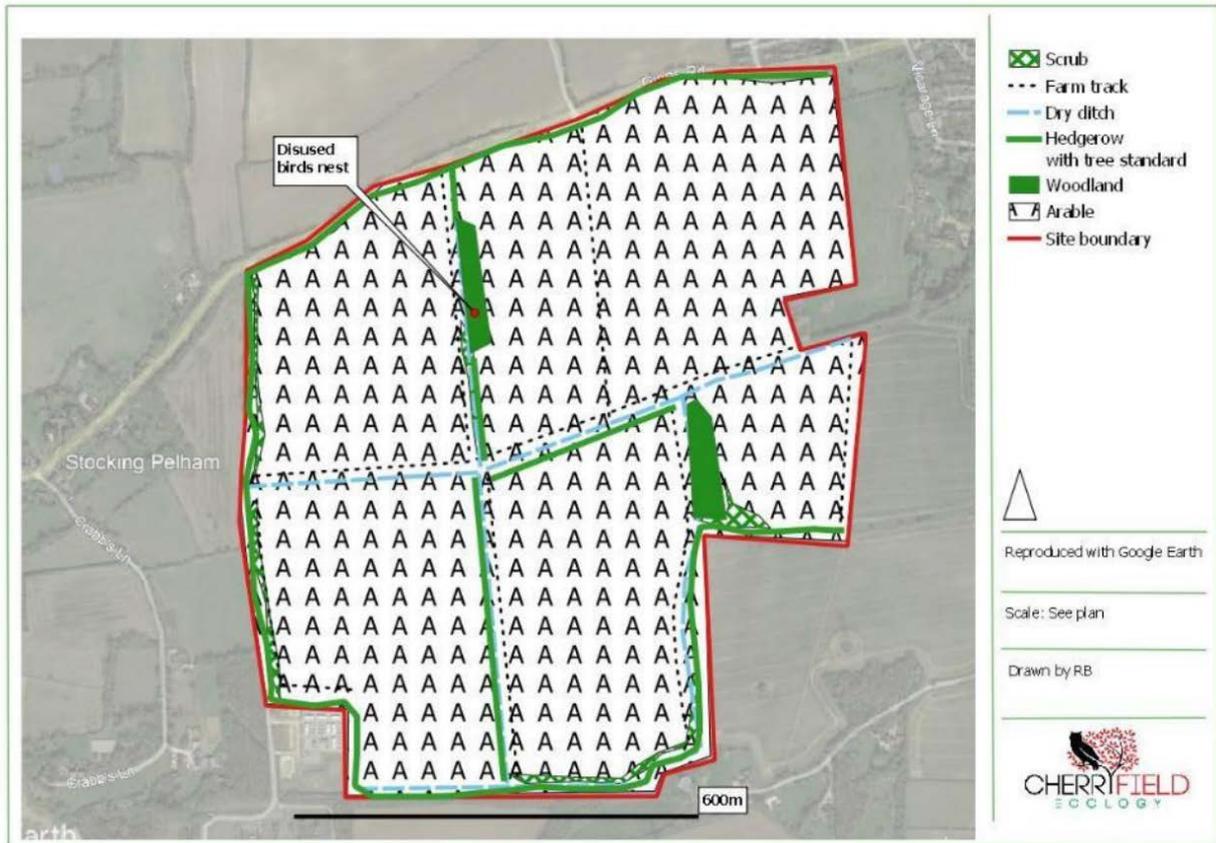


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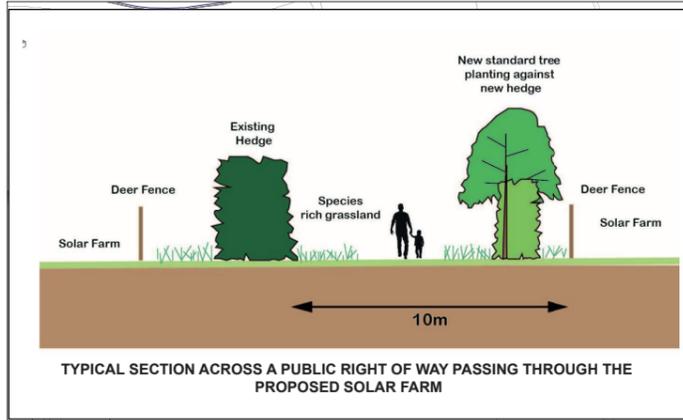
Figure 2: Google Aerial Location Plan



APPENDIX B: BASELINE ECOLOGICAL SURVEY PLANS



APPENDIX C: LANDSCAPE AND HABITAT CREATION PLANS



SWARD ESTABLISHMENT

The sward inside the deer fence is to be sown with a Solar Park Permanent Grassland – Low Maintenance (Ref: MIXSPPG) at a rate of 25 Kg per hectare, available from Cotswold Grass Seeds Direct [redacted] or similar mix from another supplier to approval.

The woodland areas are to be sown with PIAB1 The Operation Pollinator Mix (Just Legumes) Ref: MIXOPANTS at a rate of 12.5 Kg per hectare, available from Cotswold Grass Seeds Direct or another supplier of a similar product to approval.

All areas outside the deer fence but within the Site are to be sown with: Chalk & Limestone Soil Mixture (Ref: Ref: MIXCHA) at a rate of 25 Kg per hectare available from Cotswold Grass Seeds Direct or another supplier of a similar product to approval.

ESTABLISHMENT AND MAINTENANCE

The contractor shall follow the tasks set out in the Landscape and Ecological Management Plan (Sightline Landscape 2022) for the establishment and maintenance of the trees, woodland, hedges and swards.

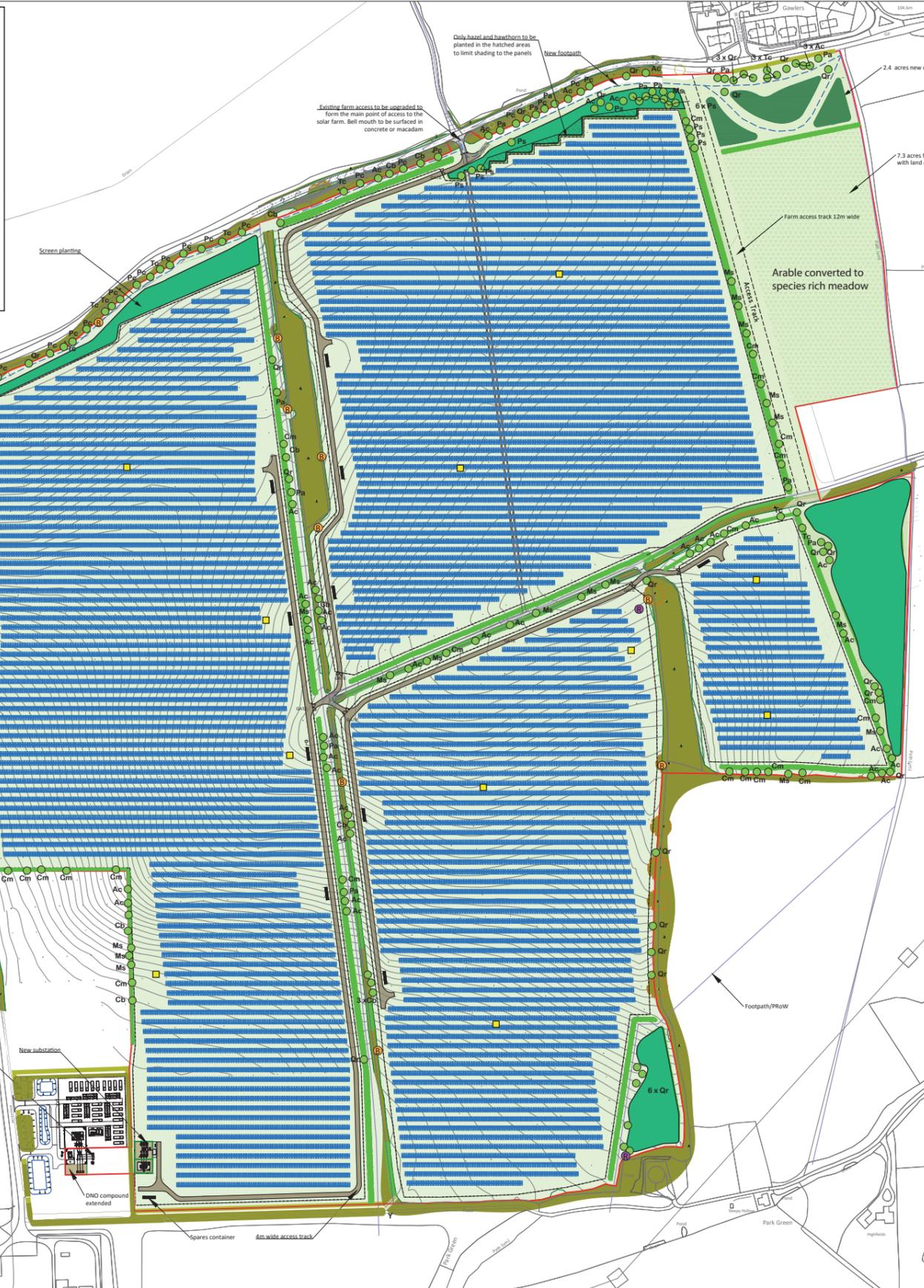


LANDSCAPE STRATEGY

Visual analysis indicates that the proposed solar farm will be well screened by existing tree and hedge cover which lies to the south and west. The more open areas to the east will be screened by hedge and tree planting. The most significant views will be from Ginns Road and higher ground further north. For this reason, it is proposed to plant woodland buffers along the northern edge to augment the existing roadside tree cover and a new hedge which has recently been planted by the landowner. As well as the woodland planting some individual fast-growing trees have been specified to ensure the views from the north are screened as rapidly as possible. Blocks of woodland planting along the eastern edge will screen the solar farm from Berden, nearby footpaths and in long distant views from high ground to the east.

The public rights of way which will pass through the solar farm will be maintained on their current alignment, set within 10 m wide corridors, within which native hedge planting will screen the solar farm from view when in leaf (see inset above). Tall stature trees will be planted where space and shading issues allow, while on other boundaries smaller stature species such as hawthorn and field maple will be planted. The proposed planting will leave a legacy of tree and hedge cover across the Site once the solar farm has been decommissioned.

The slight north facing slope means that the panels will be spaces sufficiently far apart, which combined with the short solar farm grass mix, will provide good nesting opportunities for skylark nesting. The grass sward will also allow sheep grazing within the solar farm if appropriate/practical. Species rich grassland will be specified around the margins and 2.7 hectares of permanent meadow will be established on land outside the array to the east.



PLANTING SCHEDULES AND SPECIFICATIONS

WOODLAND PLANTING				
Latin Name	English Name	Size	Specification	%
<i>Acer campestre</i>	Field Maple	60 - 80 cm high	Bare root	10
<i>Acer campestre</i>	Field Maple	1.2 - 1.5 m high	Bare root feathered tree	5
<i>Carpinus betulus</i>	Hornbeam	0.9 - 1.5 m high	Bare root feathered tree	4
<i>Carpinus betulus</i>	Hornbeam	60 - 80 cm transplant	Bare root 1+1	7
<i>Corylus avellana</i>	Hazel	60 - 80 cm high	Bare root 1+1	25
<i>Crataegus monogyna</i>	Hawthorn	45 - 60 cm high	Bare root 1+1	17
<i>Malus sylvestris</i>	Crab apple	60 - 80 cm transplant	Bare root 1+1	4
<i>Prunus avium</i>	Cherry	0.9 - 1.2 m high	Bare root feathered tree	4
<i>Prunus avium</i>	Cherry	60 - 80 cm transplant	Bare root 1+1	5
<i>Quercus robur</i>	Oak	0.9 - 1.2 m high	Bare root feathered tree	2
<i>Quercus robur</i>	Oak	45 - 60 cm transplant	Bare root 1+1	8
<i>Tilia cordata</i>	Small leaved lime	0.9 - 1.2m high	Bare root feathered tree	4
<i>Tilia cordata</i>	Small leaved lime	60 - 80 cm transplant	Bare root 1+1	5
				100

HEDGE PLANTING				
Latin Name	English Name	Size	Specification	%
<i>Acer campestre</i>	Field maple	60 - 80 cm high	Bare root 1+1	30
<i>Crataegus monogyna</i>	Hawthorn	45 - 60 cm high	Bare root 1+1	25
<i>Carpinus betulus</i>	Hornbeam	60 - 80 cm high	Bare root 1+1	13
<i>Cornus sanguinea</i>	Dog wood	60 - 80 cm high	Bare root 1+1	7
<i>Corylus avellana</i>	Hazel	60 - 80 cm high	Bare root 1+1	12
<i>Lonicera periclymenum</i>	Honeysuckle	60 - 90cm high	2 litre container grown	1
<i>Ilex aquifolium</i>	Holly	20- 40 cm high	2 litre Container grown	2
<i>Rosa canina</i>	Dog Rose	60 - 80 cm high	Bare root 1+1	5
<i>Viburnum opulus</i>	Guelder Rose	60 - 80 cm high	Bare root 1+1	5
				100

INDIVIDUAL TREE PLANTING				
Latin name	English Name	Size	Specification	Code
<i>Acer campestre</i>	Field Maple	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Ac
<i>Crataegus monogyna</i>	Hawthorn	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Cm
<i>Carpinus betulus</i>	Hornbeam	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Cb
<i>Malus sylvestris</i>	Crab apple	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Ms
<i>Prunus avium</i>	Cherry	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Pa
<i>Populus canadensis 'Robusta'</i>	Poplar	Standard Tree	2.5 - 3.0 m high feathered tree	Pc
<i>Quercus robur</i>	Oak	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Qr
<i>Tilia cordata</i>	Small leaved lime	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Tc
<i>Pinus nigra</i>	Scots Pine	Specimen	1.25 - 1.5 m high container grown	Ps

EXISTING VEGETATION

Any necessary works being undertaken within close proximity to the retained tree and hedgerows should be carried out in accordance with BS 3998:2010 Tree work and Recommendations, BS 5837:2012 Trees in Relation to Design Demolition and Construction and NJUG 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees and in consultation with the Tree Protection Plan for the Site. Tree and hedgerow protection measures shall be put in place prior to the start of the main construction works.

PREPARATION

On completion of the construction of the solar farm infrastructure all deleterious construction materials and waste products shall be removed from site. Liaise with the main contractor operator on health and safety requirements, particularly in relation to any excavations near buried electrical cables.

Make good any damaged/disturbed areas by infilling with topsoil previously stripped from hardstanding areas within the site, grading out and cultivating to marry in with existing levels. Areas to be planted shall have a minimum depth of 350 mm topsoil. If less than this, make up the deficit with topsoil from the site strip. By mechanical means, relieve any compaction or areas of poor drainage arising from the construction works

PROPOSED PLANTING

Planting to be supplied in accordance with BS 3936-1:1992 Nursery Stock. specification for trees and shrubs, BS 3936-4:2007 Nursery Stock, BS 8545:2014 Trees: from nursery to independence in the landscape. All landscaping works to be in accordance with BS4428:1989 "General Landscaping Works." All planting should be UK grown and, where possible, sourced from local provenance certified stock. Planting to take place during the months of November to March, preferably before January and at a time when the soil is not frozen or waterlogged.

Trees and hedges will be planted into arable farmed soil. Transplants to be notch planted and trees to be pit planted with the pit being the depth of the rootball and 20% wider than the rootball. Backfill with existing site soil.

WOODLAND PLANTING

Transplants and feathered trees for the woodland area shall be planted in a loose grid at 2.25m centres. Species shall be randomly mixed and feathered trees and transplants to be evenly distributed across the woodland area. Transplants to be protected with biodegradable, staked deer shelters Feathered trees are to be fixed to a 50 mm dia. stake, driven in until firm. Once the woodland has been planted it is to be sown with a legume rich seed mix designed for pollinators, such as AB1 The Operation Pollinator Mix (Just Legumes) Ref: mixopants available from Cotswolds Grass Seeds Direct or another supplier to approval.

HEDGE PLANTING

Hedges are to comprise three staggered rows of plants. The first row is to be planted 2.5 m from the deer fence and the rows are to be 400mm apart with plants within rows at 600 mm centres. Species are to be randomly mixed along the lengths. Protect transplants with spiral rabbit guards and a cane.

INDIVIDUAL TREE PLANTING

Trees are to be planted in the positions shown with the specific species as indicated on the plan. Trees are to be double staked either side of the rootball with a looped webbing with spacers between the stakes and tree. Stakes to be driven in until firm and typically 0.9 – 1.2 metres above ground.

<ul style="list-style-type: none"> Site boundary Proposed solar panels Public Right of Way 2m high post and wire deer fence Grass, sheep grazing sward inside the deer fencing, wildflower elsewhere. 	<ul style="list-style-type: none"> Existing woodland and hedges New hedges Proposed stone access tracks Transformer substation (10 no. total) New woodland planting, see Schedule and specification). 	<ul style="list-style-type: none"> New community woodland New wildflower meadow New permissive footpath Area of woodland on the northern edge where only hazel and hawthorn to be planted to prevent shading to panels 	<ul style="list-style-type: none"> Individual standard trees (See Schedule for tree species codes) Indicative skylark nesting sites (shown at 7m x 7m but in reality the gaps between the panels in most areas is sufficient to provide opportunities for nesting). 1.5 x 1.5 x 0.75 m high pile of dead wood from the site to enhance the habitat for reptiles and invertebrates A bird box is to be installed at these locations. The exact position to be determined by an ecologist. 	<p>Revision Date Comment</p>	<p>ON BEHALF Pelham Solar Ltd</p>	<p>PROJECT Proposed Solar Farm, Stocking Pelham, Essex</p>
<p>DATE: 20th May 2022</p> <p>SCALE: 1:2,500 @ A1</p> <p>DWG No: 375_PP_04</p> <p>APPROVED: CMCD</p>	<p>TITLE Planting Plan</p>					

APPENDIX D: TIMETABLE FOR ECOLOGICAL MANAGEMENT OPERATIONS

<p>Standard trees</p>	<p>Ensure new trees are regularly watered during extended periods of dry weather.</p> <p>Ensure that the stakes are upright and firm and the ties are secure. Remove weeds.</p> <p>Maintain weed free under the trees (1.5 m dia. circle) by either hand weeding or application of an appropriate herbicide.</p> <p>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.</p> <p>As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc.</p> <p>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.</p>	20 empty green columns
<p>Woodland screen planting</p>	<p>Ensure trees are regularly watered during extended periods of dry weather. When the plants are in leaf, in the first year, water thoroughly if there has been no rain for three weeks. Soak the ground to field capacity at each watering.</p> <p>Ensure that the tree stakes are upright and firm and the ties are secure. Remove weed from inside shelters and around the bases.</p> <p>Maintain weed free under the plants by either hand weeding or application of an appropriate herbicide.</p> <p>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.</p> <p>As the trees gain stature inspect at each maintenance visit for issues such as disease, damage due to gales etc.</p> <p>Manage to maximise screening function and consider coppicing/thinning after 10 years to maximise the stature of the taller growing species.</p>	20 empty green columns

<p>Newly sown species rich grassland between the deer fence and the boundary including the field to the east</p>	<p>Cut/Strim in August or September in dry weather, standing. Leave the arisings for one week, then rake up, collect and remove from site.</p> <p>Control undesirable plant growth within sward if necessary, such as dock, thistle, nettles, and ragwort by hand excavation/pulling.</p> <p>Grassland areas with any bare patches will be re-seeded as necessary, and any invasive weeds controlled by hand weeding/cutting or spot spraying.</p>	
<p>Agricultural grassland under the panels</p>	<p>Control undesirable plant growth within sward if necessary, such as dock, thistle, bramble, nettles, and ragwort by hand excavation/pulling.</p> <p>Graze at appropriate times to ensure the sward remains sufficiently low that it does not shade the panels.</p> <p>Ensure stocking rates and times do not result in overgrazing. Between 4 and 8 sheep/hectare may be achievable (or 2-3 sheep/ha on newly-established pasture), similar to stocking rates on conventional grassland, i.e. between about March and November in the southwest and May to October in North-East England.</p> <p>If not grazed by sheep, cut the grass down to 50 mm in late July and again in late October.</p>	
<p>Maintain bird and bat boxes</p>	<p>Monitor for use during the ecological walk over survey.</p> <p>Clear out debris if required and at an appropriate time.</p> <p>Make any necessary repairs or replace if appropriate.</p>	
<p>Enhance habitat for reptiles and amphibians</p>	<p>Check condition of log pile sites and rebuild if necessary or establish new ones in a different part of the site.</p>	

Protecting badgers	<p>Ensure that the site manager is aware of the location of the sett and the regulations associated with the protection of badgers.</p> <p>Check for changes in badger activity, such as the opening up of new setts. If setts are opened up in places where there may be a conflict with the safe operation of the facility, take an ecologist's advice on managing the close proximity of humans and badgers.</p>	
General maintenance	<p>Regularly inspect 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.</p> <p>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.</p> <p>Check footpath direction signs, stiles, gates and information boards are in good working order and make any necessary repairs as promptly as possible.</p>	
Ecological monitoring	<p>Undertake a walkover survey after the first 5 years to assess whether the ecological objectives are being met. Repeat in Years 10 and 20.</p> <p>Make recommendations for altering the management regime or undertaking additional works and alter the LEMP accordingly.</p> <p>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.</p>	

