SUNNICA ENERGY FARM

EN010106

Volume 6

Environmental Statement

6.2 Appendix 10I: Outline Landscape and Ecology Management Plan

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

13 September 2023

Version number: 045

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Sunnica Energy Farm

Environmental Statement
Appendix 10I: Outline Landscape and Ecology Management Plan

Regulation Reference:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	EN010106
Application Document Reference	EN010106/APP/6.2
Author	Sunnica Energy Farm Project Team

Version	Date	Status of Version
Rev 00	18 November 2021	Application Version
Rev 01	22 November 2022	Submitted at Deadline 3
Rev 02	13 January 2023	Submitted at Deadline 5
Rev 03	03 March 2023	Submitted at Deadline 7
Rev 04	24 March 2023	Submitted at Deadline 10
Rev 05	13 September 2023	Submitted in response to SoS information request of 23 August 2023

Table of contents

Table of Tables

Table of Figures

1 Introduction

1.1.1 This Outline Landscape and Ecology Management Plan (OLEMP) has been prepared on behalf of Sunnica Limited (hereafter referred to as the Applicant). It forms part of the Environment Statement (ES) and includes provision for the successful establishment and future management of biodiversity and landscaping works.

1.1.2 The Applicant is seeking development consent, under a Development Consent Order (DCO), for the construction, operation (including maintenance), and decommissioning of a solar farm. The Scheme is described in **Chapter 3: Scheme Description** of the Environmental Statement **[REP2-022]**.

1.1.3 The Scheme falls within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) under Section 14(1)(a) and Sections 15(1) and (2) of the 2008 Act, as it would have a generating capacity greater than 50MW electrical output (50MWe). As such, a DCO is required to authorise the Scheme in accordance with Section 31 of the 2008 Act.

1.1.4 This OLEMP provides a framework for achieving the 'vision' of the proposed Green Infrastructure described in Section 5, which is illustrated on the Environmental Masterplans. It forms part of the strategy for successfully integrating the Scheme within the landscape, and also mitigating many of the related impacts identified within the ES.

1.1.5 Detailed landscaping and ecological management plans will be developed post-consent and approved by the relevant local planning authority. They will be required to be in accordance with this OLEMP. The OLEMP will also form the basis of a process of ongoing dialogue with Local Authorities leading up to and during construction to ensure that Local Authorities and EAG are kept informed and satisfied of the implementation of the OLEMP (and the plans/schemes of which it forms the basis) and in order that they can also keep communities informed.

The Order limits

1.1.6 With reference to the illustrative parameter plans **Figure 3-1** and **3-2** of the Environmental Statement **[EN010106/APP/6.3]**, submitted at Deadline 7 and **Chapter 3: Scheme Description** of the Environmental Statement **[REP2-022]**, the Order limits comprises the following areas:

Sunnica East Site A

1.1.7 With reference to **Figure 3-1** of the Environmental Statement **[EN010106/APP/6.3]**, Sunnica East Site A extends to the west of Ferry Lane and covers 223 hectares.

1.1.8 The landform across Sunnica East Site A is predominantly low lying, situated at around 10m AOD.

1.1.9 Sunnica East Site A does not cover any of the settlements in the study areas described in **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**. Isleham is approximately 0.5km to the north-west and

Freckenham is approximately 0.6km to the south of Sunnica East Site A, at its closest point.

1.1.10 The land use across Sunnica East Site A is agricultural, based around Lee Farm, with either arable or pig farming land uses, consisting of large-scale fields which are open in character.

1.1.11 Sunnica East Site A is crossed by one public right of way (PRoW), W-257/007/7, W-257/002/X and W-257/002/0, which is a bridleway where it crosses the eastern edge of ECO2, between Beck Road and Mortimer Lane.

1.1.12 Sunnica East Site A is not covered by any statutory or local landscape designations, neither is it covered by any Conservation Areas and nor does it contain any listed buildings.

Sunnica East Site B

1.1.13 With reference to **Figure 3-1** of the Environmental Statement **[EN010106/APP/6.3]**, Sunnica East Site B extends to the east of Freckenham Road and to the south of Elms Road and covers 319 hectares.

1.1.14 The landform across Sunnica East Site B is generally flat, although there is also localised variation at the north-east edge, where the land adjacent to the A11 rises up to 20m AOD.

1.1.15 Sunnica East Site B does not cover any of the settlements in the study areas described in **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**, although it borders the southern and eastern edges of Worlington. Red Lodge is approximately 0.4km to the east and Badlingham is approximately 0.5km to the south-west.

1.1.16 The land use across Sunnica East Site B is predominantly agricultural, as either arable or pig farming. The field pattern is a combination of large to smaller scale fields, which are generally geometric or planned in form. Whilst the fields themselves are open in character, the intervening pine lines or hedgerows along the boundaries of the fields results in a wooded context to Sunnica East Site B.

1.1.17 Sunnica East Site B is crossed by the following PRoW and other routes with public access:

a. The unclassified road U6006 extends from Elms Road to Worlington, across the eastern part of Sunnica East Site.

b. PRoW (footpath) W-257/003/0 forms the southern edge to Sunnica East Site B, to the south of E19 and E22.

1.1.18 Sunnica East Site B is not covered by any statutory or local landscape designations; neither is it covered by any Conservation Areas, nor does it contain any listed buildings.

Sunnica West Site A

1.1.19 With reference to **Figure 3-2** of the Environmental Statement **[EN010106/APP/6.3]**, Sunnica West Site A is in the central part of the study area, to the north-east of Newmarket and covers 373 hectares.

1.1.20 The Snailwell Gallops forms the western boundary to Sunnica West Site A. Fields, woodland blocks, Chippenham Park and the B1085 form the northern boundary; fields to the west of Kennett form the eastern boundary and the A14 forms the southern boundary.

1.1.21 There are two watercourses which flow across Sunnica West Site A. The first forms part of Lee Brook and flows across around the edge of Chippenham Park and across the northern part of Sunnica West Site A. The second flows between the A11 and The Willows, to the south of Dane Hill Farm, via Halfmoon Plantation.

1.1.22 The landform across Sunnica West Site A is flat or gently undulating. At the western edge of Sunnica West Site A the land rises from the A14, at 30m AOD, to a localised hill at 40m AOD before falling back to Chippenham Road at 35m AOD. In contrast, the landform falls very gradually across the central part of Sunnica West Site A, from the junction of the A14 and A11 at 25m AOD, to the edge of Chippenham Park, at 20m AOD. Similarly, in the eastern part of Sunnica West Site A, the land falls from La Hogue Farm, at 30m AOD, northwards towards the unnamed stream bordering Chippenham Park at 20m AOD, whilst remaining generally flat across Dane Hill and Halfmoon Plantation to the south, at 30m AOD.

1.1.23 Sunnica West Site A does not directly cover or border any settlements. Chippenham is approximately 1km to the north of the northern part of Sunnica West Site A; Kennett is approximately 1.5km to the east of the eastern part of Sunnica West Site A and the eastern edge of Newmarket is approximately 1.5km to the south-west of Sunnica West Site A.

1.1.24 The A11 separates the eastern part of Sunnica West Site A. Chippenham Road and La Hogue Road form the north-west and north-east boundaries of Sunnica West A Site respectively.

1.1.25 The land use across Sunnica West A Site is agricultural, consisting of small to medium scale fields. The field pattern to the north of the A14 is more geometric than the fields to the south of the A11. There are several small plantations and woodland belts within the fields.

1.1.26 The agricultural fields are bounded by trees, managed hedgerows, linear tree shelter belts, small woodland and copses, and farm access tracks.

Grid Connection Route A

1.1.27 Grid Connection Route A runs between Sunnica East Site A, Sunnica East Site B and Sunnica West Site A.

1.1.28 Heading south-east from Sunnica East Site A, the cable route for Grid Connection Route A crosses agricultural land and the B1102 immediately north of Sunnica East Site B. The cable route then passes through Sunnica East Site B before running

south, crossing the River Kennett and Havacre Meadows and Deal Nook CWS using boring, micro-tunnelling or moling methods (more information on these techniques is provided in **Chapter 3: Scheme Description** of the Environmental Statement **[REP2-022]**). The cable route corridor then crosses the Chippenham footpath 49/7, before passing approximately 20m west of the Chippenham Gravel Pit CWS and crossing the B1085, before then joining Sunnica West Site A.

1.1.29 Cable Route A does not cross any statutory or local landscape designations.

Grid Connection Route B

1.1.30 Grid Connection Route B connects Sunnica West Site A to Burwell National Grid Substation.

1.1.31 Heading north-west from Sunnica West Site A, the cable route crosses Chippenham Road and Snailwell 1 PRoW. It then crosses PRoW 92/19 before crossing the railway line and the A142 Newmarket / Fordham Road, using boring, micro-tunnelling or moling methods.

1.1.32 The cable route corridor for Grid Connection Route B crosses agricultural fields and a number of roads including the B1102 and A142. Grid Connection Route B also crosses a number of watercourses, including the Burwell Lode, New River, and the River Snail, as well as a number of drainage ditches associated with Burwell Fen, Little Fen, the Broads, and agricultural drains. As such, the cable route for Grid Connection Route B passes through multiple areas of Flood Zones 2 and 3. For the main watercourses, the cable route crossings will require HDD, boring, micro-tunnelling or moling methods. For shallower and narrower drainage ditches, open cut trenching will be undertaken (more information on these techniques is provided in Chapter 3: Scheme Description of the Environmental Statement [**REP2-022**]).

1.1.33 Grid Connection Route B is not covered by any statutory or local landscape designations.

The Scheme

1.1.34 The Scheme is described in further detail in **Chapter 3: Scheme Description** of the Environmental Statement **[REP2-022]**.

1.2 Purpose of this Document

1.2.1 The purpose of this OLEMP is to set out the measures proposed to mitigate the effects of the Scheme on landscape and biodiversity features, and to enhance the biodiversity, landscape and green infrastructure value of the Order limits, to secure compliance with relevant national and local planning policies.

1.2.2 The Scheme has been designed, as far as is practicable, to avoid or reduce effects on landscape, heritage and biodiversity features through siting of the Scheme components, including structures and new planting. These include measures to avoid impacts on protected species to ensure compliance with legislation (see **Chapter 8: Ecology and Nature Conservation** and **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**).

1.2.3 This document outlines the landscape and biodiversity impact avoidance measures that would be implemented prior to, and during, construction of the Scheme, as well as the habitat restoration, enhancement, management and monitoring measures to be implemented once the Scheme is operational. Implementation of these measures is proposed to be secured by Requirement 8 of the draft DCO through the requirement for detailed Landscape and Ecology Management Plan(s) to be produced in accordance with this OLEMP post-consent.

1.2.4 In order to avoid potential conflicts in the approach to impact avoidance and enhancement, this document identifies the measures required for both landscape, heritage and biodiversity together, demonstrating a cohesive and integrated strategy.

1.2.5 This OLEMP is structured as follows:

a. **Section 2** sets out the Scheme Vision, summarises relevant legislation and planning policy and describes the existing landscape, heritage and biodiversity features

b. **Section 3** summarises the potential impacts and effects of the Scheme on landscape and visual amenity, biodiversity and archaeology;

c. **Section 4** outlines the requirements for impact avoidance during advance works and the construction phase;

d. **Section 5** describes the proposed Green Infrastructure and the measures required for effective management and maintenance. The areas of the Order limits to which the different proposals would be applied are shown on the Environmental Masterplans **[EN010106/APP/8.47]** and **[EN010106/APP/8.77]** and the Illustrative Cross sections, appended as Annex A (and labelled as **Figures 1** to **7**); and

e. **Section 6** describes the roles and responsibilities of all parties involved in the delivery of the mitigation, enhancement and management proposals.

2 Scheme Vision

2.1.1 The Scheme offers the opportunity to increase Green Infrastructure and biodiversity within and across the Order limits, reflecting valued landscape characteristics which would aid in integrating the Scheme within the landscape and into Nature Recovery Schemes.

2.1.2 This OLEMP has been developed to ensure that the Scheme would reflect the existing landscape character and context, whilst accommodating mitigation principles established within the ES, so as to achieve the vision of:

"The Scheme will deliver a new network of environmental features which will also deliver a range of ecosystem services, incorporating biodiversity, heritage, landscape and access."

2.1.3 The overarching objectives of the OLEMP are to:

a. promote the conservation, protection and improvement of the physical, natural and historic environment across the Order limits and its setting, and to ensure

the Scheme is appropriately sited, softened and integrated. The landscape framework should be seen as part of the essential infrastructure of the Scheme.

b. diversify ecological value through the retention of the existing hedgerows and trees, to enhance these through restoration and creation of diverse habitats offering greater botanical and faunal interest to the Scheme, and to safeguard the habitats with potential for protected species.

c. ensure the design and maintenance of landscape and biodiversity components preserves and enhances the character of the landscape and local distinctiveness.

d. protect and retain, where practicable, the hedgerows and trees which cross the Scheme boundary, particularly adjacent to the road networks and at site access points, by utilising existing breaks in boundary vegetation at field access points to minimise impacts on vegetation.

e. create new structural planting which links with existing habitats and to take account of species that are locally appropriate and the existing vegetation patterns.

f. use indigenous species of local provenance wherever appropriate.

g. provide landscape amenity enhancement through the introduction or permissive routes.

h. provide a variety of foraging, nesting and roosting opportunities for protected and notable species, including insects and other invertebrates, amphibians, reptiles, birds and bats, badgers and other mammals.

i. create floristically rich habitats, to support a greater assemblage of species and give rise to enhanced foraging opportunities.

j. provide a framework for monitoring and reviewing the landscape implementation and establishment.

k. ensure the mitigation proposed as part of the Scheme remains effective at reducing identified environmental effects as intended.

2.1.4 The contractor appointed by the Applicant to deliver the Scheme, shall deliver each of the OLEMP measures and commitments through the LEMP(s) that are developed and approved for the Scheme pursuant to Requirement 8 post-consent, unless the contractor is able to define an alternative measure, or measures, within the detailed LEMPs which achieve the same landscape and biodiversity mitigation effects at the relevant location. This will ensure that there will be no changes to the conclusions of the ES.

2.1.5 The assumption is that the decommissioning phase would be covered by a Decommissioning Environment Management Plan (DEMP) pursuant to Requirement 22 of the draft DCO, which would be submitted at a later time in the project timeline. Decommissioning matters are therefore not addressed in this OLEMP.

2.2 Legislative and Policy Framework

2.2.1 The legislation and policies relevant to biodiversity, landscape and visual amenity are summarised below.

Legislation

a. Ancient Monuments and Archaeological Areas Act 1979 (Ref. 7-5) (amended by the National Heritage Act 1983 (Ref. 7-6) and 2002 (Ref. 7-7)) (excluding normal planning procedures, which are disapplied by the DCO, which if granted, would encompass all of the normal consents);
b. Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref. 7-4) (excluding normal planning procedures, which are disapplied by the DCO, which if granted, would encompass all of the normal consents);
c. Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) (Birds Directive);
d. Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive);
e. The Conservation of Habitats and Species Regulations 2017 (as amended);
f. Wildlife and Countryside Act (WCA) 1981 (as amended);
g. Countryside & Rights of Way Act 2000 (as amended);
h. Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
i. Protection of Badgers Act 1992 (as amended);
j. Hedgerow Regulations 1997 (as amended);
k. Water Environment (Water Framework Directive) (England and Wales) Regulations 2017;
l. Animal Welfare Act 2006;
m. Invasive Alien Species (Enforcement and Permitting) Order 2019; and
n. Environment Act 2021.

Planning Policy

a. Overarching National Policy Statement for Energy (EN1), adopted 2011;
b. National Policy Statement for Renewable Energy Infrastructure (EN3) 2011
c. NPS for Electricity Networks Infrastructure (EN5), adopted 2011;
d. National Planning Policy Framework (NPPF), adopted 2021;
e. National Planning Practice Guidance (NPPG);
f. Cambridgeshire and Peterborough Minerals and Waste Development Plan, adopted 2011;
g. Cambridgeshire and Peterborough Minerals and Waste Local Plan, Further Consultation Draft (FCD), March 2019;
h. Suffolk – Creating the Greenest Country – Suffolk Climate Change Partnership;
i. Suffolk Climate Action Plan 3 (SCAP), 2017;
j. East Cambridgeshire Local Plan (ECLP), 2015;
k. East Cambridgeshire District Council Renewable Energy Development (Commercial Scale) Supplementary Planning Document, (EC RED), 2014;

l. East Cambridgeshire District Council Design Guide (EC DG), SPD, 2012

m. The West Suffolk, Forest Heath and St Edmundsbury Local Plan, Joint Development, Management Policies Document (WS MPD), 2015;

n. Forest Heath Local Development Framework, Core Strategy Development Plan Document (FH CS), adopted 2010;

o. Forest Heath District Council, Accessible Natural Greenspace Study (FH NGS), 2017

p. Freckenham Neighbourhood Plan Landscape Character Assessment and Key Views Study (2020)

Other Guidance

a. Natural England National Character Area (NCA) 46: The Fens;

b. Natural England NCA 85: The Brecks;

c. Natural England NCA 87: East Anglian Chalk;

d. East of England Landscape Framework;

e. Suffolk Landscape Character Assessment;

f. Cambridgeshire Landscape Guidelines (CLG);

g. Norfolk and Suffolk Brecks Landscape Character Assessment (NSB LCA);

h. Cambridgeshire Green Infrastructure Strategy;

i. The Brecks' Special Qualities (BSQ);

j. Village Design Guides and Conservation Area Statements;

k. Cambridgeshire and Peterborough Biodiversity Action Plan;

l. Suffolk Biodiversity Action Plan;

m. Biodiversity 2020 - A strategy for England's Wildlife and Ecosystem Services;

n. Priority habitats and species listed on UK Post 2010 Biodiversity Framework which succeeds the UK Biodiversity Action Plan (UK BAP) (Joint Nature Conservation Committee (JNCC) and Defra, 2018);

o. BRE's National Solar Centre Biodiversity Guidance for Solar Developments;

p. Planning Practice Guidance, Conserving and enhancing the historic environment;

q. Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England;

r. Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2nd edition, 2017);

s. Historic England Advice Note 12 Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019); and

t. Chartered Institute for Archaeologists, Code of Conduct and Standards and Guidance for Historic Environment Desk-based Assessment.

u. Suffolk Green Access Strategy (2020).

v. Cambridgeshire's first Rights of Way Improvement Plan (2006).

w. Cambridgeshire Rights of Way Improvement Plan Update (2016).

x. Cambridgeshire Highways Development Management: General Principles for Development (2023).

y. An Interim Nature Recovery Network for East Cambridgeshire, (2022).

Biodiversity Net Gain

2.2.2 The Environment Act 2021, is due to come into force with respect to the requirement to achieve a biodiversity net gain (BNG) for all developments (November 2023 for Town and Country Planning Act (TCPA) applications, 2025 for NSIPs such as the Scheme). The requirement is to achieve a minimum 10% net gain in biodiversity units relative to the site's baseline biodiversity value.

2.2.3 Biodiversity metrics provide a measure of overall biodiversity value based on habitat type, area, condition and distinctiveness. The current approved metric is Defra's Metric 3.1 and this metric is a tool that allows a value to be measured, in this case biodiversity, which is calculated pre- and post-development. The change in biodiversity units indicates either a net loss, a net gain or no change in biodiversity.

2.2.4 The proposals within this OLEMP have been informed by BNG principles to ensure there is a net gain arising during the lifetime of the Scheme. Further details are set out in the Biodiversity Net Gain Assessment (BNG) **[EN010106/APP/6.7]**, updated at Deadline 7**.** This will be kept up to date with respect to, for example, the biodiversity baseline and the Scheme design by submitting an updated BNG with each detailed LEMP.

2.3 Existing Landscape, Heritage and Biodiversity Features

2.3.1 The following section summarises the baseline analysis within **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**. This is to facilitate the management measures being read in the context of the existing baseline and in one single document.

Existing Landscape and Heritage Features

Sunnica East Site A Site Level Landscape Character

2.3.2 To provide additional detail to the landscape character and land use within Sunnica East Site A and with reference to **Figure 3-1**, parts of Sunnica East Site A have been divided into the following parcel references (E):

a. E01 to E04 are in the north-west of Sunnica East Site A. The Fen woodland forms the northern boundary and the reservoirs and access track at Lee Farm form the southern boundary. The Lee Brook forms the western boundary and an intermittent hedgerow tree group form the eastern boundary. The fields are open in character with hedgerows between E03 and E04;

b. E05 forms the north-west part of Sunnica East Site A, between Beck Road and the Lee Brook. E05 consisting of several fields which are open in character. There are a few individual trees along the southern edge of E05, adjacent to

Beck Road and a small woodland block adjacent to the Lee Brook in the south-east part of E05;

c. ECO1 to ECO2 form the west part of Sunnica East Site A, located to the south of Beck Road, between the dismantled railway line and to the south of Beck Bridge. The fields are open in character, although the northern and western edges of ECO1 are bordered by intermittent hedgerows. PRoW W-257/007/7, W-257/002/X and W-257/002/0 crosses the eastern edge of ECO2, where it is a bridleway, crossing between Beck Bridge and Mortimer Lane;

d. E08 to E10 are in the north-west of Sunnica East Site A, to the south of E03 and E04 and reservoirs and access track to Lee Farm. Ferry Lane forms the eastern boundary to E08 and E10, with Beck Road forming the southern boundary to E09 and E10. The elevated junction of Beck Road and Ferry Lane forms the south-east boundary to E10. The fields are open in character, although there is a hedgerow along the southern edge of fields E09 and E10 and hedgerows and trees along the eastern edge of E10, which extend to a small woodland block bordering the elevated junction of Beck Road and Ferry Lane; and

e. E33 is located to between the reservoirs at Lee Farm and Ferry Lane and is contiguous with E04, which forms the northern boundary and E08 which forms the southern boundary.

2.3.3 With reference to **Appendix 10B: Tree Constraints Report** of the Environmental Statement **[APP-101]** and the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]** Ferry Lane, between Freckenham and West Row, is bordered by mature woodland on the east side of the lane at the junction with the B1102. From Freckenham, both sides of the lane are bordered by hedgerows, which extend into a row of mature trees. To the north of these trees, the vegetation patterns return to hedgerows, with some gaps and taller scrub and young trees at the elevated junction with Beck Road. To the north of the junction the lane is bordered by hedgerows, until the junction with the access road to the reservoirs by Lee Farm, where the lane to West Row is bordered by intermittent hedgerows and mature trees including Scots pine, particularly along the eastern side of the lane. A single potential veteran tree was identified via the 2019 site walkover well beyond the western edge of the Order limits, this tree is no longer thought to be present following a review of aerial imagery.

2.3.4 There are no scheduled monuments nor listed buildings within Sunnica East Site A. There are no registered parks and gardens within Sunnica East Site A or within 1km from this part of the Order limits. Sunnica East Site A is not covered any Conservation Areas, there are two conservation areas that fall within the 1km, with the Freckenham Conservation Area and Isleham Conservation Area.

Sunnica East Site B Site Level Landscape Character

2.3.5 To provide additional detail to the landscape character and land use within Sunnica East Site A and with reference to **Figure 3-1**, parts of Sunnica East Site A have been divided into the following parcel references (E):

a. ECO3 and E12 are located in the western part of Sunnica East Site B, between the B1102 and U6006. The fields are open in character and bordered to the east

by pig farming and Surprise Hill woodland and residential properties to the north, adjacent to the B1102;

b. E13 to E18 are to the east of U6006, extending to Elms Road, which forms the southern boundary to E16 and E18. The eastern boundary to E13-E18 consists of fields and woodland blocks, including mature woodland around Worlington Quarry. The fields within E13-E18 are small in scale, rectangular in form and divided by mature tree belts;

c. E19 to E22 are to the south of Elms Road, forming the southern part of Sunnica East Site B. Similar to E13 to E18, the fields are smaller in scale, rectangular in form and divided by mature tree belts, including Scots pine and a small reservoir. Residential land uses adjacent to Bridge End Road form the eastern boundary to E19 to E22, with PRoW (footpath) W-257/003/0 adjacent to the southern boundary to E19 and E22;

d. E24 to E25 are two larger scale fields to the west of Newmarket Road. Both fields are open in character and divided by a vegetated access track to pig farms and woodland belts which form the western boundary;

e. E26 to E29 are four fields to the east of Worlington Road at the north-east part of Sunnica East Site B. Each field is broadly the same, being small in scale and square in form. E26 to E29 are divided by mature vegetation such that they are well enclosed in relation to the wider landscape. There is small mature tree clump within the central part of E29; and

f. E30 to E32 form the north-east part of Sunnica East Site B, located to the south of Golf Links Road and with the A11 forming the eastern boundary. A rectangular block of mature woodland forms the southern boundary to E30 and E32, across the rising ground at the base of Chalk Hill. E30 is rectangular in form and divided from E31 and E32 by a narrow tree belt, with all parcels open in character.

2.3.6 With reference to **Appendix 10B: Tree Constraints Report** of the Environmental Statement **[APP-101]** and the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]**, the main tree species within Sunnica East Site B include hybrid Black Poplar (*Populus* × *canadensis*), White Poplar (*Populus alba*), Oak (a species of *Quercus*), Scots Pine (*Pinus sylvestris*), Beech (*Fagus sylvatica*) and Corsican Pine (*Pinus nigra*).

2.3.7 Across the southern part of Sunnica East Site B there are several semi mature pine plantations and pine lines and poplar trees which denote field boundaries. These groups also contain a number of large broadleaf woodlands, consisting of predominantly oak and beech mixed with occasional pine.

2.3.8 There are a small number of veteran trees located along field boundaries within Sunnica East Site B, as shown on the Environmental Masterplan. There are no scheduled monuments, nor listed buildings within Sunnica East Site B. There are no registered parks and gardens within Sunnica East Site B or within 1km from this part of the Order limits. Sunnica East Site B is not covered any Conservation Areas.

Sunnica West Site A Site Level Landscape Character

2.3.9 To provide additional detail to the landscape character and land use within Sunnica West Site A and with reference to **Figure 3-2**, parts of Sunnica West Site A have been divided into the following parcel references (W):

a. W03 and ECO5 form the north-western part of Sunnica West Site A, situated between the Snailwell Gallops and Foxborrow Plantation. W03 consists of four small square fields, situated across the relatively elevated and rising land to the south-east of Snailwell. The fields are open in character due to the land use, but the fields are bordered by woodland blocks along the western and southern edges and a narrow tree belt along the eastern edge which connects with Foxburrow Plantation.

b. W04 and W05 form the western part of Sunnica West Site A and are adjacent to The Avenue. Both W04 and W05 are geometric in form and open in character due to their land use, although there is a mature woodland belt along the western edge of W04, through which a PRoW crosses.

c. W06 to W12 are located centrally within Sunnica West Site A and consist of smaller scale geometric fields divided by hedgerows. Sounds Plantation extends between W06 and W07 and there is also a rectangular woodland block between W08 and W10. La Hogue Road crosses the eastern edge of W10, W11 and W12.

d. W15 form the eastern part of Sunnica West Site A to the east of theA11. W15 consists of several fields, which are open in character.

e. W17 is a rectangular field in the central part of the study area, situated in the centre of W06 to W12. The field is open in character and bordered by hedgerows and tree belts, with Sounds Plantation forming the western boundary. There are also several agricultural barns adjacent to the southern edge of W17.

2.3.10 With reference to **Appendix 10B: Tree Constraints Report** of the Environmental Statement **[APP-101]** and the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]**, the trees within Sunnica West Site A are semi mature to mature in age. The main species include Scots Pine, Corsican Pine, Beech, Sycamore (*Acer pseudoplatanus*), Common Oak, Ash (*Fraxinus excelsior*) and Crack Willow (*Salix fragilis*).

2.3.11 At the western side of Sunnica West Site A field boundaries consist of large linear belts of pine, beech, willow and sycamore. To the north of Sunnica West Site A, within the grounds of La Hogue Farm are several high value mature oak trees surrounding the entrance of the farm shop, whilst at the rear of the farm shop there are two veteran status trees which were identified by the site walkover.

2.3.12 Around Dane Hill Farm the fields are bordered mainly by moderate quality tree groups dominated by oak, aspen (*Populus tremula*), beech and field maple (*Acer campestre*). Within this group are three large mature individual native black poplar (*Populus nigra*) trees, which as a species are rarely distributed across Britain.

2.3.13 Other vegetation patterns include mature trees adjacent to The Avenue and adjacent to the watercourse which flows through Half Moon Plantation, to the south of Dane Hill Farm.

2.3.14 There are no listed buildings within Sunnica West Site A. The main part of the Chippenham Park Registered Park and Garden (RPG) lies to the north of Sunnica West Site A, along with Chippenham Conservation Area. The Avenue, which extends south from the walled parkland, is within the Order limits, separating W04 and W05. Snailwell Conservation Area is to the west of Sunnica West Site A.

2.3.15 In respect of the RPG, the formal parkland is defined by its brick boundary walls, with the south drive extending towards Newmarket. While the wider rural landscape is not visible from within the park, it does form part of its setting, revealing evidence of the impact landowners had on the landscape, and forming part of the informal parkland context. The RPG, including the Hall also have an important relationship with the village of Chippenham to the north and this influence is visible within the arrangement of buildings and the predominant architectural style.

Grid Connection Route A Site Level Landscape Character

2.3.16 With reference to **Appendix 10B: Tree Constraints Report** of the Environmental Statement **[APP-101]** and the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]**, most of the trees across Grid Connection Route A are classified as low quality, with the exception of those in Heath Plantation.

2.3.17 There are no designated heritage assets within Grid Connection Route A.

Grid Connection Route B Site Level Landscape Character

2.3.18 With reference to **Appendix 10B: Tree Constraints Report** of the Environmental Statement **[APP-101]**, and the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]** the vegetation across Grid Connection Route B is assessed as moderate value plantations, with a moderate value group of beech trees adjacent to Chippenham Road, which are protected by a Tree Preservation Order.

2.3.19 There are no designated heritage assets within Grid Connection Route B. Burwell North Street Conservation Area is located within 1km of the Grid Connection Route B.

Burwell National Grid Substation Site Level Landscape Character

2.3.20 The Burwell National Grid is located in the western part of the study area, to the north of the existing Burwell substation.

2.3.21 There are no scheduled monuments within 1km from the Burwell National Grid Substation. There are no Registered Parks and Gardens within 1km of the Burwell National Grid Substation. Burwell North Street Conservation Area is located within 1km of the Burwell National Grid Substation. Burwell North Street Conservation Area also falls within the Grid Connection Route B study area and is described under the relevant section.

Existing Biodiversity Features

Habitats

2.3.22 Table 1 summarises the notable habitats within the Order limits:

Table 1: Notable Habitats within the Order limits

Habitat type	Status
Woodland -Broad-leaved semi-natural	Local Biodiversity Action Plan (LBAP) Habitat; Lowland Mixed Deciduous Woodland – Habitat of Principal Importance
Grassland - Unimproved and Semi-Improved Acid	LBAP, Habitat of Principal Importance
Grassland - Semi-improved calcareous	LBAP, Habitat of Principal Importance
Grassland – Marshy / swamp	LBAP, Habitat of Principal Importance
Arable (including arable flora)	LBAP, Habitat of Principal Importance
Reedbed	Habitat of Principal Importance Reedbed
Running water	Including a network of ditches and rivers; Rivers are a habitat of Principal Importance
Hedge - Intact (species-rich and species poor) and with trees (species poor)	LBAP, Habitat of Principal Importance

Species

2.3.23 With reference to **Appendix 8C: Terrestrial Habitats and Flora Report** of the Environmental Statement **[APP-079],** surveys of arable field margins recorded rare/scarce arable flora species, including Corn Spurrey (*Spergula arvensis*) and Corn Marigold (*Glebionis segetum*) listed as Vulnerable in the UK and England, Fine-leaved Fumitory (*Fumaria parviflora*) classified as Vulnerable in the UK and Near Threatened in England, and Corn Chamomile (*Anthemis arvensis*) classified as Endangered in the UK and England, (Stroh *et al.* 2015, Mcleod *et al.* 2017).

2.3.24 Within Sunnica East Site B, three Nationally Scarce species are present in dry acid grassland; Bearded Fescue (*Festuca subulata*), Sand Catchfly (*Silene conica*) and Bur Medick (*Medicago minima*) and a NERC Act Section 41 species Annual Knawel (*Scleranthus annuus*).

2.3.25 Narrow-leaved Water Plantain (*Alisma gramineum*) was present in all three ditches surveyed in Sunnica East Site A and is considered a Suffolk Rarity, however, it is not a priority species and is common throughout England.

2.3.26 With reference to **Appendix 8E: Aquatic Ecology Survey Report** of the Environmental Statement **[APP-081]** three species with a Local distribution were recorded at Sunnica East Site A; the Hairy Dragonfly (*Brachytron pratense*), the snail Leach's Bithynia (*Bithynia leachii*) and a caddisfly (*Agrypnia pagetana*).

2.3.27 The invasive Signal Crayfish (*Pacifastacus leniusculus*) was recorded in the desk study from the Lee Brook adjacent to Sunnica East Site A. The remains of this species were also found in a ditch within Sunnica East Site A.

2.3.28 With reference to **Appendix 8D: Terrestrial Invertebrate Scoping Survey Report** of the Environmental Statement **[APP-080]** there are notable terrestrial invertebrate

species and assemblages present, particularly in dry acid grassland habitats identified within Sunnica East Site B.

2.3.29 With reference to **Appendix 8E: Aquatic Ecology Survey Report** of the Environmental Statement **[APP-081],** there are records of protected fish species existing in the River Snail including Brook Lamprey (*Lampetra planeri*) and Bullhead (*Cottus gobio*). The River Snail fish community also comprises widespread common fish species including 3-spined Stickleback (*Gasterosteus aculeatus*) and 10-spined Stickleback (*Pungitius pungitius*).

2.3.30 With reference to **Appendix 8E: Aquatic Ecology Survey Report** of the Environmental Statement **[APP-081]** there are records of protected fish species exist in Lee Brook including Brook Lamprey, Bullhead, and Brown Trout (*Salmo trutta*) and these species may be present in the ditches onsite as they are connected to Lee Brook via River Lark within Sunnica East Site A and B.

2.3.31 With reference to **Appendix 8F: Great Crested Newt Survey Report** of the Environmental Statement **[APP-082]** Great Crested Newt (*Triturus cristatus*) has been detected in one waterbody within 500 m of the Order limits. This pond is approximately 150 m from Sunnica East Site B.

2.3.32 With reference to **Appendix 8G: Report on Surveys for Reptiles** Habitat within the Grid Connection Route B, are a mixture of ditches, grassland and scrub and could be suitable for Grass Snake, Common Lizard and Slow worm (*Anguis fragilis*).

2.3.33 With reference to **Appendix 8I: Report on Surveys for Breeding Birds** of the Environmental Statement **[APP-085]**, a total breeding bird assemblage of 73 species was recorded within the Order limits between 2019 and 2021, with a breeding assemblage of 66 species recorded in 2019/2020 and 59 species in 2021. Territories of one Annex 1 species: Stone Curlew (*Burhinus oedicnemus*) and five WCA Schedule 1 species (Stone Curlew, Hobby (*Falco subbuteo*), Quail (*Coturnix coturnix*), Little Ringed Plover (*Charadrius dubius*) and Barn Owl (*Tyto alba*) were confirmed within the survey area.

2.3.34 With reference to the **Appendix 8H: Wintering Bird Survey Report** of the Environmental Statement **[APP-084]**, 71 bird species were recorded during the wintering bird surveys, including notable species such as Skylark (*Alauda arvensis*) and Yellowhammer (*Emberiza citrinella*).

2.3.35 With reference to the **Appendix 8J: Report on Surveys for Bats** of the Environmental Statement **[APP-087]**, surveys of Sunnica East Site A recorded very low to high bat activity (depending on the season and location) of at least 8 species; Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Noctule (*Nyctalus noctule*), Leisler's bat (*Nyctalus leisleri*), Myotis species, Brown Long-eared bat (*Plecotus auratus*), Serotine (*Eptesicus serotinus*) and Barbastelle (*Barbastella barbastellus*). A few barns are present (not affected by the Scheme) with roosting potential and foraging activity was observed along the watercourses and hedges.

2.3.36 Surveys of Sunnica East Site B recorded very low to high bat activity (depending on the season and location) of at least eight species; Common Pipistrelle, Soprano

Pipistrelle, Noctule, Leisler's bat, Myotis species (including Daubenton's bat (*Myotis daubentoniid*), Brown long-eared bat, Serotine and Barbastelle.

2.3.37 The highest levels of activity were recorded over the reservoir to the south and along Badlingham Lane, but also foraging was noted in fields particularly in the summer (*e.g.* over maize crops). Numerous potential roost features are present in mature trees, none of which is affected by the Scheme.

2.3.38 Surveys of Sunnica West Site A recorded very low to high bat activity (depending on the season and location within the Scheme) of at least 8 species; Common Pipistrelle, Soprano Pipistrelle, Noctule, Leisler's bat, Myotis species (including Natterer's bat *Myotis nattereri* identified from netting survey), Brown Long-eared bat, Serotine and Barbastelle. Foraging was observed along tracks, field margins and adjacent to woodland. Numerous potential roost features are present in mature trees and farm buildings, none of which is affected by the Scheme).

2.3.39 Two bat roosts, supporting 1-2 individual bats, were identified in two trees at the Burwell National Grid Substation and surrounding area and would have been likely to be impacted by Option 1. The latter option has been removed from the Scheme such that no known bat roosts will be negatively impacted.

2.3.40 With reference to **Appendix 8K: Badger Survey Report** of the Environmental Statement **[APP-088]**, four Badger (*Meles* meles) setts, in current use, were identified within the Order limits. Two setts, including an active main sett, in Sunnica East Site B, one outlier sett in Sunnica West Site A; and a main sett near to Grid Connection Route B.

2.3.41 With reference to **Appendix 8L: Report on Surveys for Riparian Mammals** of the Environmental Statement **[APP-091]**, Water Vole (*Arvicola amphibius*) presence was recorded in ditches, within ditches in Grid Connection Route B and in peripheral ditches of Sunnica East Site A and B. Otter (*Lutra lutra*) presence was recorded in six peripheral watercourses of Sunnica East Site A.

3 Potential Impacts

3.1 Landscape and Visual

3.1.1 The **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]** sets out the assessment of the Scheme in relation to landscape and visual receptors for the construction, Year 1 of operation, Year 15 of operation and the decommissioning phases.

3.1.2 For the construction phase, significant adverse effects were predicted to county landscape character areas, local landscape character areas and at the Order limits landscape character level and to a range of visual receptors (people's views). This was due to the presence of machinery and activity across the Order limits, with activities including excavation, boring, installation of panels, solar stations and the taller Battery Energy Storage System (BESS) and substations, which would require tall lifting equipment.

3.1.3 For the year 1 of operation phase, significant adverse effects were also predicted to county landscape character areas, local landscape character areas and at the Order

limits landscape character level. This was due to the change in land use, with new massing via the panels and associated structures, the reduction in aesthetic and perceptual qualities of the landscape from the 'infrastructure' character of the Scheme. Whilst new planting was accounted for in the year 1 assessment, it would not have fully established.

3.1.4 By year 15, the landscape and visual assessment predicted that the degree of landscape and visual effects would reduce due to the establishment of the proposed Green Infrastructure that forms part of the Scheme and is discussed in this document, consisting of native grassland, new hedgerows and trees. Due to this, significant adverse landscape effects were predicted at the Site landscape character level only and one local landscape character area (LLCA 24: Lowland Estate Chalkland).

3.1.5 The assessment also identified significant effects on visual amenity in year 15 at one of the assessed viewpoints (Viewpoint 39: Limekilns). This was due to the open character of existing views across a valley and the elevated position of the receptor.

3.1.6 For all other visual receptors, the significant effects were avoided by the combination of the existing vegetation and proposed planting that forms part of the Scheme and is discussed in this document.

3.1.7 However, there remains a need to avoid impacts on trees, for appropriate restoration of the landscape following construction, and for enhancements to the landscape character and improvements to the green infrastructure network, to meet requirements of local and national planning policy.

3.2 Biodiversity

3.2.1 From the outset of the Scheme, the Applicant recognised the important opportunity to link the provision of renewable energy with landscape and nature recovery at a significant scale, enabling an intensively managed agricultural land to be restored to a sustainable state over a decadal period of recovery including contributing towards Nature Recovery Networks as referenced in the Draft Overarching National Policy Statement for Energy (EN-1). This has involved working down the hierarchy of avoidance, mitigation and offsetting followed by compensation. Given the nature of the Scheme, there has been no necessity for any compensation with respect to either habitat or species.

3.2.2 The Scheme will result in the temporary and permanent loss of the following habitats:

a. semi-improved acid grassland;
b. marshy grassland;
c. arable (including arable flora);
d. other flora; and
e. hedgerows.

3.2.3 There will be potential adverse impacts on some protected or notable species during construction of the Scheme. These include adverse impacts to:

a. terrestrial invertebrates due to loss of habitat;

b. Common Lizard and Grass Snake due to killing and, or injuring during construction; and

c. birds due to adverse impacts to nesting bird species, including specially protected species (such as Stone Curlew) due to temporary and permanent loss of habitat and noise and visual disturbance during construction.

3.2.4 In addition, the presence of invasive non-native Signal Crayfish poses the risk of potential spread of crayfish plague and of impacting native plant and animal species through predation.

3.3 Archaeology

3.3.1 Appended to this OLEMP is an Outline Historic Environment Management Plan (OHEMP) which deals with the Archaeological Protection Areas that have been put in place as part of the Scheme's embedded mitigation.

3.3.2 As set out in Annex E, the OHEMP is a live document, which will be updated through the production of Historic Environment Management Plans (HEMPMS) for each of the Archaeological Protection Areas.

3.3.3 These HEMPMS' will be submitted alongside the detailed LEMP post-consent for the relevant Archaeological Protection Areas that are located within the phase of the Scheme that is the subject of that detailed LEMP, so that the approving local authority can ascertain how heritage management will be undertaken alongside landscape and ecological management during the operational phase.

4 Impact Avoidance Measures

4.1 Introduction

4.1.1 The impact avoidance measures outlined below would be implemented, as relevant and appropriate, prior to and during the construction phase of each relevant part of the Scheme, the purpose being to minimise the impact of works on landscape and biodiversity features and to achieve legislative compliance.

4.1.2 Standard environmental best practice and mitigation will be implemented to ensure construction and operation of the Scheme complies with legislation relating to protected species. It would also aim to ensure the Scheme does not compromise the local conservation status of ecological receptors present within the vicinity of the Scheme.

4.1.3 The implementation of these measures has been taken into account when assessing the likely impacts and effects of the Scheme on landscape and biodiversity features in **Chapter 8: Ecology and Nature Conservation** and **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**.

4.1.4 The impact avoidance approach allows for the retention of trees and hedgerows and the enhancement of watercourses including ditches to ensure that the connectivity of the existing green infrastructure network is maintained.

4.1.5 Actions have been taken that have contributed to avoid and, or reduce potential biodiversity and nature conservation effects.

4.1.6 These have included, through the parameters set out in the illustrative **Works Plans [EN010106/APP/2.2]**):

a. reconfiguration of solar arrays;

b. creating undeveloped buffers throughout the Scheme of at least 5 m from existing boundary features which are embedded within the Scheme design, many of which would consist of new planting;

c. ensuring that sites designated for their biodiversity value within the Order limits are retained and measures are embedded within the Scheme design to ensure that their biodiversity is not impacted during construction, *e.g.* through siting construction routes outwith and away from designated sites;

d. ensuring that existing woodland, treelines and the majority of hedgerows are retained and will be protected during construction of the Scheme; and

e. retaining and managing existing grassland habitats.

4.1.7 These measures are depicted on the Environmental Masterplans and the illustrative sections in **Figure 1** to **7** in Annex A of this OLEMP.

4.1.8 The following provisions in respect of construction methods are set out in the Framework Construction Environmental Management Plan (CEMP) (which will follow through to the CEMP(s) produced post-construction, pursuant to the DCO):

a. designing the Scheme to comply with industry good practice and environmental protection legislation during both construction and operation *e.g.* prevention of surface and ground water pollution, fugitive dust management, noise prevention or amelioration;

b. crossings of watercourses where the presence of Otter and Water Vole have been determined, as well as the River Kennett, River Snail, Lee Brook, New River and Burwell Lode, to be undertaken using HDD, boring, micro-tunnelling or moling methods, with appropriate setbacks from the top of the banks (depending on habitats and other individual ecological constraints);

c. the perimeter security fence around the Scheme to be implemented early in the construction phase to secure the site to prevent construction activity in proximity to retained vegetation, in particular designated sites within and adjacent to the Order limits and, where required by the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]** and any additional arboricultural surveys, specific tree protection measures will be implemented, including solid hoarding fencing and construction exclusion zones and with respect to protected species, e.g. Badgers and their setts;

d. utilising motion detection security lighting within substations and BESS compounds to avoid permanent lighting and developing a sensitive lighting scheme ensuring inward distribution of light and avoiding light spill on to existing boundary features during the construction phase. Infra-red lighting will be utilised for CCTV cameras to avoid the need for permanent lighting at the Scheme boundary;

e. the ecological measures within the CEMP to be implemented by the selected construction contractor and overseen by an Ecological Clerk of Works (ECoW), where required;

f. an Invasive Species Management Plan to be developed which sets out procedures to ensure no invasive non-native species are spread from the Scheme and that any imported building/landscaping materials are free from invasive non-native species (*e.g*. Schedule 9 and Schedule 2 species). In the event that any future infestations of invasive non-native species are identified during the development process, exclusion zones will be established around them and the ecology team contacted for advice as detailed. This includes not undertaking in-channel works where invasive non-native species have been identified, *e.g*. Lee Brook, to avoid the spread of invasive non-native species. Where appropriate, cabling would be underneath the watercourse.

g. no permanent above ground infrastructure within 10m of watercourses which will mitigate for potential hazards such as chemical and soils spills into watercourses;

h. preparing mitigation strategies for protected species and, where required, applying for species licences from Natural England. At present no such licences are required. Such works will be undertaken sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme;

i. careful consideration of the access points to limit the loss of vegetation at access points and the number of field boundary crossings. Where access and crossings are necessary, they have been carefully aligned to pass through the field access points and hedgerows where it would have the minimal impact on mature trees. The width of the access points will be minimised as far as possible to retain the landscape structure and habitat connectivity. All access points will be re-instated to their condition prior to the construction;

j. undertaking vegetation clearance in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of reptiles and amphibians so that there will be no need to undertake any translocation of reptiles and/or amphibians;

k. establishing reasonable avoidance measures along the cable corridors, including buffers of 30m around any identified Badger setts or 15m around trees with bat roost potential; and

l. restoring post-construction any habitat removed from within the Grid Connection cable corridors.

4.1.9 The following impact avoidance measures in relation to structures were highlighted as part of **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**) and shall be implemented as part of the detailed design of the Scheme, which will be approved by the relevant local planning authority, pursuant to DCO Requirement 6 and in line with the Design Principles.

a. suitable materials would be used, where reasonably practicable, to minimise reflection and glare and to assist with breaking up the massing and scale of the panels, solar-stations and associated structures;

b. the selection of finishes for the infrastructure would be informed by the tonal colours of the landscape to minimise the visual impact of the Scheme; and

c. visual clutter would be minimised, where possible, through careful siting and design.

4.1.10 Further detail on these measures is provided within the Design and Access Statement **[REP3A-032]**.

4.2 Precautionary working methods

Updated Surveys

4.2.1 An ecologist will complete a Scheme walkover in advance of works to reconfirm the ecological baseline conditions and to identify any new ecological risks. The walkover will be completed sufficiently far in advance of the works to allow for the completion of any additional, seasonally constrained surveys (*e.g.* surveys in support of any identified requirements for protected species licences) that may be required. These pre-construction surveys will be undertaken in advance of the final LEMP, which will be developed in line with the findings of these surveys.

4.2.2 Arboricultural surveys will be undertaken for areas not already subject to detailed assessment in the Arboricultural Impact Assessment, and are at risk of impact to inform the detailed design. A detailed arboricultural method statement will be produced as part of an Arboricultural Report to identify the final impacts of the Scheme and to set out the specification for tree protection measures and the methodology for sensitive works close to retained trees, this is secured via commitments in the Framework CEMP **[EN010106/APP/6.2]**.

4.2.3 Immediately prior to site clearance and start of construction of each relevant part of the Scheme, further site walkover surveys will be undertaken by an ecologist, landscape architect and arboriculturist to confirm that the risks associated with the Scheme remain as previously assessed and, or to confirm the correct impact avoidance measures are being implemented (*e.g*. tree protection fencing, protected species stand-offs and other protection measures).

4.2.4 The scope of the required walkovers will be defined on a case-by-case basis in consultation with the project team and Sunnica Ltd, based on the specific risks associated with each relevant part of the Scheme and informed by the preceding ecological walkover described above.

4.2.5 Should any new constraints be identified as a result of the updated surveys, these would be captured in the final version of LEMP. Any additional impact avoidance or mitigation requirements would be identified in consultation with Sunnica Ltd and/or the relevant statutory consultees. Implementation of these measures is proposed to be secured through this OLEMP which will be secured by Requirement 8 of the draft DCO.

4.2.6 Any additional surveys will be instructed as necessary by the ecologist or landscape architect, based on professional judgement and the findings of the updated walkover surveys, or identified as appropriate by the Applicant or their contractor(s). These may be required, for example, based on the construction programme, working

requirements or following identification of specific issues and constraints not covered by previous advice.

Protected Species Licences

4.2.7 At this stage a licence application does not need to be made to Natural England. At one stage in the project, there was the need to apply for licences with respect to Badger and bats, but the removal of the substation extension at Burwell Substation as part of the from the Scheme removed the risk of damaging a Badger sett and of potentially impacting roosting bats.

4.2.8 The Applicant recognises that there is a need for pre-construction surveys including for Badger and bat roosts to take into account any changes since the baseline surveys.

Ecological Clerk of Works

4.2.9 The scope of the Ecological Clerk of Works (ECoW) will be advised by the ecologist and landscape architect based on relevant environmental commitments, the findings of the updated surveys, protected species licensing requirements and with reference to the relevant project programmes.

4.2.10 Relevant site staff will receive toolbox talks as necessary from the ECoW on the relevant ecological risks present, legal requirements, and the working requirements necessary to comply with legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks will be repeated as necessary over the duration of the works.

4.2.11 If protected species or trees and hedges specified to be retained, are unexpectedly found or damaged, the following action would take place:

a. Works should cease immediately;
b. The ECoW and/or ACoW and Construction/Operations Manager (as appropriate) would be informed;
c. The relevant area would be demarcated and access would be restricted if necessary;
d. A way forward would be established and, if necessary, licences would be sought; and
e. Works would restart once the EcoW and/or ACoW are satisfied with the way forward.

Hedgerows

4.2.12 Some sections of species poor hedgerows crossed by the Scheme may need to be wholly or partially removed to facilitate construction works. Hedgerow loss will be minimised and where possible avoided by utilising existing gaps in vegetation or by applying trenchless techniques, such as horizontal directional drilling (HDD).

4.2.13 During construction existing hedgerows which are to be retained shall be protected, retained and maintained by measures set out in the CEMP.

4.2.14 On completion of construction, affected hedgerow sections will be reinstated in full in accordance with the objectives, design principles and prescriptions set out in Section 5.4 below.

4.2.15 A Method Statement will be developed where each hedge is assigned a unique crossing number (and mapped accordingly). The species composition of each hedge will be stated, along with any special considerations (such as protected species) and the proposed species replanting mix. This will be undertaken in association with the project landscape architects. This will be accompanied by photographic evidence to confirm the hedgerow condition, bank/ditch profile and to inform reinstatement techniques.

Trees and woodland

4.2.16 The location of the Scheme will largely avoid the need for the removal of mature trees and parts of any woodland. However, some tree removals and pruning of trees will be required.

4.2.17 Where works in close proximity to retained trees cannot be practicably avoided, these works will be undertaken in accordance with current best practice at the time of the works. At the time of issue of this OLEMP, current best practice is defined in:

a. British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations; and

b. National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

4.2.18 The outline design is based on maximum parameters in terms of the space required to construct and operate the Scheme. The detailed design will minimise the extent of impacts on existing vegetation within these parameters by, for example, reducing the width of excavation for cable routes and access points or proposing trenchless techniques. A Precautionary Arboricultural Method Statement (PAMS) is provided in Appendix 10B of the Environmental Statement **[APP-101]**. The PAMS identifies the specification for tree protection measures and the methodology for sensitive works in proximity to retained trees during construction.

4.2.19 The **Arboricultural Impact Assessment Report [EN010106/APP/8.46]** identifies the maximum extent of tree removals anticipated to facilitate the Scheme.

4.2.20 A pre-construction tree survey will be undertaken to inform the detailed design where construction works are likely to affect trees which have not been subject to detailed tree survey. The findings of this will be included within an Arboriculture Report, which will be accompanied by an updated impact assessment and Arboriculture Method Statement which will set out mitigation and protection measures to be undertaken. These reports will build on the PAMS provided in Appendix 10B of the Environmental Statement **[APP-101]**. The Arboricultural Report will be developed alongside the CEMP **[EN010106/APP/6.2]** and will be submitted in advance of commencement for approval. The findings and recommendations of these will be taken into account by the appointed contractor.

4.2.21 All necessary protective fencing would be installed prior to the commencement of any site clearance or construction works. This tree protection fencing will be rendered in a suitable colour to aid its integration in the landscape.

4.2.22 Trees and woodland within the Scheme footprint that cannot be retained will be replaced (either the same species as the tree that has been removed or another suitable native species) within the Order limits boundary

4.2.23 In a number of places, trees are proposed as visual screening to mitigate the visual impacts of the Scheme, as shown on the illustrative parameter plans **Figures 3-1** and **3-2** of the Environmental Statement **[EN010106/APP/6.3].** Existing mature vegetation within the Order limits which currently screens the site from public rights of way will be retained and managed in accordance with the principles set out for woodland in Section 5. This will assist in avoiding and mitigating effects of glint and glare as set out in Appendix 16A of the Environmental Assessment **[APP-121]**.

4.2.24 To facilitate the construction and operation of the Scheme, it has been estimated, that up to 1,070m of existing hedgerow will need to be removed in the worst-case. In some cases, this may just require management of the hedgerow, but as a reasonable worst case, this is presented as lost. The figure incorporates widening of entry and access points for large construction vehicles, creation of passing places on existing highways, internal access roads and trenching for internal cables and works along the grid connection corridor. The detailed construction planning stage will seek to further refine the Scheme to minimise hedgerow loss. The results of this will be incorporated into the Arboricultural Report.

4.2.25 The **Arboricultural Impact Assessment Report [EN010106/APP/8.46]** indicates that, as a reasonable worst case, up to 1.3ha of tree canopy cover will be removed to facilitate the Scheme. This comprises 6,550m^2 of canopy cover of trees which have not been subject to detailed on site assessment and have been classified following a desktop study informed by a high-level site walkover where possible. Of those trees, 150m^2 are considered likely to be of high quality, 3,550m^2 are considered likely to be of moderate quality and 2,850m^2 of low quality. The remaining 6,450m^2 of tree cover to be removed consists of trees which have been subject to a detailed tree survey to BS5837:2012.

4.2.26 Tree loss will be further reduced where feasible and all areas subject to potential impacts will be surveyed in detail as part of the detailed design process. Retained trees will be fully protected via Construction Exclusion Zones (CEZ) where possible. Where impacts are unavoidable but trees can be successfully retained they will be managed in accordance with the principles of an update to the Preliminary Arboricultural Method Statement (PAMS), including through watching briefs, included within Appendix 10B of the **Arboricultural Impact Assessment Report [EN010106/APP/8.46]**. This is secured through the Framework CEMP [**EN010106/APP/6.2**].

4.2.27 **Table 2** below summarises the number of tree features to be removed based on current detailed survey information and their quality category in accordance with BS5837:2012. The maximum extent of canopy area to be removed is provided and has been rounded up to the nearest 50m^2 .

4.2.28 No veteran or ancient trees are to be removed.

4.2.29 Of the trees to be removed, part of two tree groups to the south of Worlington are subject to a Tree Preservation Order (TPO). In addition, two individual trees subject to detailed tree survey are to be removed at Chippenham Road (east of Snailwell) and these trees are protected by a recent TPO made by East Cambridgeshire District Council.

Table 2: Summary of impacts on trees subject to detailed tree survey

Impact	Category A (High Quality)	Category B (Moderate Quality)	Category C (Low Quality)	Category U (Unsuitable for retention for >10 years)
Trees to be removed to facilitate the Scheme	*Part of 3 woodland groups*	2 trees, 1 full group, part of 9 groups/hedgerows	3 trees, part of 6 groups/hedgerows	1 tree, 1 full group.
Tree canopy area in m^2	2,000m^2	3,100m^2	1,050m^2	300m^2
				Total = 6,450m^2

4.2.30 **Table 3** below summarises the estimated losses and gains of new and enhanced tree and hedgerow habitat.

Table 3: Summary of estimated tree and hedgerow loss and gain

Common name	Worst-case loss	Gain/enhancement	Difference
Hedgerows	-2km	+6km	+4km
Trees	-1.3ha	+52.0ha	+50.7ha

Ecology

4.2.31 The following precautionary working methods would be employed to minimise potential adverse effects on protected/notable species prior to and during construction. Precautionary working method statements would be produced as necessary to specify working requirements and other necessary impact avoidance measures. These measures would be controlled and implemented through the CEMP that would be developed by the contractor and will be informed by pre-construction ecology surveys. A Framework CEMP has been submitted in **Appendix 16C** of the Environmental Statement **[EN010106/APP/6.3],** this is proposed to be secured by a Requirement of the DCO.

Nesting Birds

4.2.32 Where practicable, vegetation clearance works will be undertaken outside the bird nesting season, which is typically between March and August inclusive. Where it is not practicable to avoid the bird nesting season, an ecologist would inspect all areas of vegetation prior to clearance, and clearance would only be undertaken subject to the instruction and requirements of the ecologist to ensure the protection of birds and their nests. Cleared ground would be maintained in a disturbed state in the run-

up to construction, to minimise the risk of ground nesting birds attempting to nest on cleared ground.

4.2.33 Where vegetation clearance works are required during the bird nesting season (*i.e*. between the months of March and August inclusive), these works can only proceed following the completion of a nesting bird check which will be undertaken by an experienced ornithologist. Vegetation clearance will not be undertaken where any active bird nest is identified, and all nests will be protected from harm until the nesting attempt is complete. This will require a buffer of vegetation to be left around the nest, the size of which will depend upon the species involved. Vegetation clearance can only proceed once the nesting attempt has been deemed, by a suitably qualified ornithologist, to have finished.

Stone Curlew

4.2.34 Construction will be phased so that areas within 500m of the new habitat provisions are developed outside the Stone Curlew breeding season of March to October and that the replacement provisions are ready for use by Stone Curlew by the breeding season at the start of construction.

4.2.35 Pre-commencement surveys for Stone Curlew will be undertaken in advance of the works commencing. Monitoring will be undertaken of the Stone Curlew offsetting areas and the condition of these habitats, in the context of providing optimal nesting and foraging habitat. The monitoring will additionally include those areas within 500m of the construction site where there is suitable nesting habitat during the breeding season.

4.2.36 All construction staff working within Sunnica East Sites A and B will also be given a toolbox talk regarding the sensitivity of Stone Curlew.

4.2.37 Offsetting habitats have been embedded into the Scheme in areas where operational access will not be required. All operational staff working within 500m of the offsetting areas created for breeding Stone Curlew will be given a toolbox talk regarding the sensitivity of the species and, where possible, maintenance within 500m of the offsetting areas will be scheduled between November and February to avoid nesting Stone Curlew. This measure is included in the OEMP and will be finalised prior to operation in accordance with that outline. With these measures in place it is considered that no operational-related disturbance of nesting Stone Curlew will occur since they will not be present in areas subject to operational maintenance visits.

Bats

4.2.38 Following the provision of the detailed Arboricultural Method Statement and prior to the commencement of any tree works, where necessary, further inspections for bats will be undertaken. This would include updated roost assessment, presence or likely absence survey (e.g. tree climbing and/or dusk emergence) and if necessary, the obtaining of a mitigation licence for the proposed works where impacts to roosts are identified;

Badger

4.2.39 At this stage, there are no instances in which a Badger sett will be impacted that would require a licence from Natural England. At one stage in the project, there was the need to apply for licences with respect to Badger but the removal of the substation extension at Burwell Substation as part of the Change Request submitted at Deadline 5 from the Scheme also removed the risk to the sett meaning it is no longer required.

4.2.40 The Applicant recognises that there would be a need for pre-construction surveys including for Badger to take into account any changes since the baseline surveys were undertaken. Were any sett or setts to be adversely impacted, a submission would be made to Natural England to comply with Protection of Badgers Act 1992.

4.2.41 Mitigation to prevent injury to Badger (and other mammals) during construction works will include the provision of ramps into any open excavations to allow any Badger that have fallen in to escape. Any setts found to be present will have an appropriate exclusion zone of 30m around the sett to prevent disturbance and accidental damage.

Reptiles

4.2.42 Precautionary working methods to avoid accidental killing or injury of reptiles will be implemented during construction of the Scheme. Precautionary methods will include initial clearance of potentially suitable vegetation down to a height of approximately 30 cm, followed by dismantling of any suitable features, such as log piles and tree stumps, under ecological supervision. Vegetation will be cleared to ground level once no risk of reptile presence remains. Vegetation within working areas will be kept short during construction to discourage reptiles from entering the Scheme.

Amphibians

4.2.43 Precautionary methods of working to avoid injuring or killing amphibians, , are similar to the ones outlined for reptiles (above).

4.2.44 Consideration would be given prior to proceeding with any minor vegetation clearance works and minor construction activities to using a precautionary method of working where appropriate.

4.2.45 In general, precautionary methods of working would consist of encouraging any amphibians to move away from the work's footprint into adjacent areas using habitat manipulation. These precautionary measures are implemented to discourage / displace any residual amphibians from the nearby area.

4.2.46 Habitat manipulation methods will vary between areas and seasons but will in general consist of a phased approach, outlined below:

a. The on-site vegetation is cut short during winter (when amphibians are hibernating) if possible. If not possible (i.e. works during active season), the vegetation will be cut in a phased approach, firstly cutting to 30cm, then a cut to 15cm, then to ground level.

b. The vegetation should then be kept short to displace any amphibians, which may be present, away from the works when they emerge in the early spring and discourage amphibians from moving into the Scheme from the surrounding habitat.

c. Vegetation (including topsoil) should be carefully removed using an excavator with a toothed bucket. These works should be supervised by an ecologist if this is deemed appropriate to do so.

d. Any habitat features which may conceal sheltering amphibians (log piles, rubble mound bunds, any other debris etc.) will be dismantled by hand under supervision of the ecologist.

e. Dismantling of any rubble piles should be conducted during the amphibian active season (i.e. April to October) during warm weather conditions (i.e. above 5 degrees Celsius) to avoid killing or injuring potential hibernating amphibians.

4.2.47 In the unlikely event that any Great Crested Newts are discovered, works must cease immediately, and an ecologist must be consulted to determine how to proceed. If other amphibians are discovered during vegetation clearance it is proposed that these are translocated to suitable habitat nearby in suitable weather conditions.

Animal Welfare Requirements

4.2.48 Construction excavations have the potential to trap wildlife, such as badger and otter, and result in offences under animal welfare legislation. This would be avoided through implementation of simple precautionary mitigation. All excavations deeper than 1m would be covered or fenced overnight, or where this is not practicable, a means of escape would be fitted (*e.g*. battered soil slope or scaffold plank), to provide an escape route should any animals stray into the construction site and fall into an excavation.

Invasive Species Management Plan

4.2.49 An Invasive Species Management Plan (ISMP) will be prepared as an integral section of the LEMP based on the findings of the update surveys. The ISMP will identify requirements for invasive plant management to achieve legislative compliance over the construction phase. There may be ongoing requirements to control invasive plant species during establishment of new habitats and soft landscape, or otherwise to address wider requirements for legislative compliance.

4.2.50 If necessary, the ISMP will be updated to allow it to be rolled forward into the operational phase of the Scheme.

Lighting

4.2.51 Construction temporary lighting would be arranged so that glare is minimised outside the Order limits as far as reasonably practicable, via the use of best practice measures. Permanent lighting will be activated by motion detection within the BESS and substation areas and infra-red CCTV cameras will be used to avoid operational light spill on areas outside the Order limits.

5 Proposed Green Infrastructure

5.1 Introduction

5.1.1 The proposed green infrastructure within the Scheme is illustrated on the Environmental Masterplans **[EN010106/APP/8.47** and **EN010106/APP/8.77]**, which show the spatial arrangement of existing vegetation and proposed planting in the context of the built elements of the Scheme. These Masterplans should be considered to form part of the OLEMP, and the detailed LEMPs that are submitted should include updates to those Environmental Masterplans to reflect the measures that are committed to in those detailed LEMPs.

5.1.2 Proposals for new habitat creation and landscaping are accommodated across the Order limits along with the focus on protection and enhancement of existing habitats. The implementation of these measures has been considered when assessing the likely impacts and effects of the Scheme on landscape and biodiversity features in **Chapter 8: Ecology and Nature Conservation** and **Chapter 10: Landscape and Visual Amenity** of the Environmental Statement **[APP-042]**.

5.1.3 Annex B Table B1 provides a summary of each of the plots/fields across the Scheme, their present, i.e. baseline habitats and underlying soils, post-development habitats to be created and to be retained including their condition and an indication of proposed management. Table C1 links to the Environmental Masterplan which shows the distribution and extent of the post-development habitats and it was used to inform the assessment of biodiversity change (Biodiversity Net Gain).

5.1.4 The proposed green infrastructure has been designed to work as a system, integrating with the wider green infrastructure network by providing connections with existing habitat and rights of way. It will be multi-functional and will deliver a range of benefits at the landscape and local scale. The design has been informed by the management guidance contained within published landscape character assessments set out in Appendix 10D **[APP-102**] and the following strategies:

Cambridgeshire Green Infrastructure Strategy

5.1.5 This strategy, which covers a large part of the Scheme, identifies six strategic areas and a series of target areas and projects to reinforce the strategic green infrastructure network. Strategic Area 5: Chippenham Fen is the only area which coincides with parts of the Scheme and is focussed on Chippenham Fen and the surrounding landscape. Investment in this area is reported as offering significant opportunities for:

a. Biodiversity: through enhancing and protecting the nationally and internationally important nature conservation area of Chippenham Fen.
b. Climate Change mitigation: measures such as carbon sequestration and flood storage and alleviation.
c. Working with partners to support the development of Gateways that may exist in neighbouring Authority areas that link to this area.
d. Contributing to landscape character: through improving and maintaining the fen landscape.

5.1.6 One target area has been identified, which relates specifically to Chippenham Fen. This lies north of Cable Route B. The Applicant has undertaken to omit Sunnica West Site B from the Application and therefore no permanent changes are proposed in this area. Nevertheless, the design of these Scheme has been developed to contribute to the broader strategic aims of the strategy by:

a. Enhancing habitat connectivity across Sunnica West Site A through new hedgerow and woodland planting;

b. Converting intensively farmed arable land to species rich grassland;

c. Creating a diversity of habitats along Lee Brook south and east of Chippenham Park.

An Interim Nature Recovery Network for East Cambridgeshire, 2022

5.1.7 This strategy was published after the Application had been made. It has been reviewed to demonstrate how the Scheme can contribute to its aims and objectives. Eleven priority area are identified in the document, which extend across parts of East Cambridgeshire and neighbouring authorities. There are two priority areas which intersect the operational parts of the Scheme. The contribution of the Scheme to these priority areas is described below.

5.1.8 Breckland Edge is an extension to the main area of Breckland in Suffolk and Norfolk. The western part of this area, which coincides with Sunnica West Site A, is described as farmland adjoining the Chippenham Fen Priority Area. The area includes the sandy soils in the eastern part of the Breckland Edge area as well as the calcareous soils in the west, forming a direct connection to the Newmarket chalk grasslands Priority Area. Conservation priorities in this area include:

a. habitats suitable for Breckland flora and invertebrates, whether grasslands of various types or arable areas suitable for assemblages of rare arable flora. Such habitats are proposed within Sunnica West Site A.

b. Small wetland areas could be restored and created around watercourses including the River Kennett along with in-channel enhancements and seasonally damp hollows. Such habitats are proposed along the eastern side of Lee Brook on the western edge of Sunnica West Site A.

c. Other habitats such as tree belts and hedgerows, which would provide complementary habitats, are proposed across Sunnica West Site A.

5.1.9 The landscape and biodiversity effects of the Scheme are localised. While there will be a short-term impact during construction, the land and associated field boundary features (hedgerows, drainage ditches, trees) will be retained overall. Opportunities for meaningful landscape and biodiversity enhancement within the Scheme have been identified where appropriate via grassland and new tree and hedgerow planting.

5.1.10 Biodiversity offsetting metrics have been used to quantify the biodiversity value of the proposed enhancement and to compare these to the biodiversity value of proposed losses to demonstrate that the Scheme can achieve no net loss and net gain of biodiversity. This information is presented in Biodiversity Net Gain Assessment **[EN010106/APP/6.7].**

5.1.11 The Green Infrastructure proposals are illustrated on the Environmental Masterplan **[EN010106/APP/8.47 and EN010106/APP/8.77]** and in **Figures 3-1** and **3-2** of the Environmental Statement **[EN010106/APP/6.3]** and secured through the **Works Plans [EN010106/APP/2.2]**) and this document.

5.2 Design Principles and Green Infrastructure Proposals

5.2.1 To further enhance the detailed design process, the Applicant will appoint a Design Champion to a senior position within the Applicant's team. The Design Champion will have a background in landscape architecture and will work closely with the engineers and wider design team to ensure that the detailed design process takes opportunities to be as sensitive as practicable to the landscape and environment in which the Scheme is located, within the approved parameters of the DCO.

5.2.2 Work schedules setting out the programme of planting, establishment maintenance and long-term management will be developed post-consent and agreed with the relevant local planning authorities and set out in the detailed LEMP. These will form part of the tender documentation used to appoint a specialist landscape contractor to undertake the planting and maintenance.

5.2.3 Engagement must be undertaken with Isleham Parish Council on the design of the B50 memorial as described in para 5.13.27 to 5.13.29.

5.2.4 With reference to Parameter Plan **Figure 3-1 [EN010106/APP/6.3]**, a number of design principles have been incorporated across the Sunnica East Sites A and B by:

a. Siting the primary construction compound, BESS and substation in E33 adjacent to reservoirs and Lee Farm, so that their massing and land uses are perceived in the context of existing infrastructure features and built structures in the landscape. The tonal rendering of shades to integrate the permanent structures within the landscape will help to reduce their perceived overall mass, the detailed design of such structures to be approved by the relevant local planning authority pursuant to a DCO Requirement (Requirement 6).

b. Siting the BESS and substation in E18 so that it is enclosed and screened by existing woodland along its northern edges and in part by roadside vegetation adjacent to Elms Road to its south-east. The tonal rendering of shades which are suitable to integrate within the landscape will help reduce the perceived overall mass of these structures, secured via the OEMP. Additionally, these land uses and proposed structures are consolidated in proximity to Worlington Quarry and Bay Farm solar farm, so that the cumulative impact of these land uses are localised within the landscape;

c. Siting the solar arrays away from Freckenham, Isleham and Worlington to avoid the Scheme resulting in the physical coalescence of settlements, and retaining the open character to the west of Beck Road, between Isleham and Freckenham via ECO1 and ECO2;

d. Conserving the field boundaries and the vegetation patterns, including the pine lines, overall by offsetting the solar panels from the field edges. This also retains views across the landscape to valued features including the pine lines in long distance views and vegetation adjacent to the Lee Brook, as well as responding positively to the Freckenham Neighbourhood Plan Landscape Character

Assessment guidance "*by using and extending the existing woodland structure to help assimilate and provide screening, arrays contained in land parcels surrounded by belts of woodland would, over time, become well assimilated*";

e. Implementing new woodland and hedgerows, as set out in the OLEMP to aid in visually screening the Scheme, including impacts of glint and glare, and improving the landscape structure, as well as new native grassland mixes beneath the solar panels to improve the range of fauna and increase the biodiversity across the Site in comparison to intensive agriculture, including pig farming; and

f. New permissive routes linking Freckenham and Isleham parallel to Beck Road and a circular route around parcel E05, to the south of Worlington next to Worlington Heath County Wildlife Site, (which would then enable users to pass along the existing U6006), adjacent to Elms Road and around the perimeter of E19 and E22, to link with existing routes to Red Lodge, between U6006 and E24 and across E26 to E27 to connect with Golf Links Road. These permissive paths will enable increased public access across the landscape and respond positively to published Green Infrastructure strategies.

5.2.5 Other embedded mitigation measures across the Sunnica East Sites A and B which are shown on **Figure 3-1 [EN010106/APP/6.3]** and on the Environmental Masterplans **[EN010106/APP/8.47** and **EN010106/APP/8.77]** are:

a. Parcel E01 – the solar panels are offset from the Fen woodland to the north and by 40m to 75m from the Lee Brook to the west. The proximity to the woodland aids in screening views from the wider landscape to the north. New willow tree planting is proposed along the Lee Brook edge of E01 to provide additional riparian planting;

b. Parcel E02 – new broadleaved woodland planting along the eastern edge of the parcel, to reinforce the vegetation structure and screen the panels in longer distance views from Ferry Lane to the east.

c. Parcel E03 – new broadleaved woodland to the north and south of the parcel, to screen views from the wider landscape to the north and from Lee Farm. The linear form of the woodland reflects the linear form of pine lines within the wider landscape and provides vegetation linkages east to west across this part of the scheme, between the Lee Brook and vegetation bordering Ferry Lane. Scattered trees will be included within the grassland bordering Lee Brook to filter views from the west;

d. Parcel E04 – as per E03, additional broadleaved woodland along the northern edge and the eastern edge, to screen the panels in views from Ferry Road and the River Lark and improve the vegetation cover;

e. Parcel E05 - the solar panels have been sited approximately 95m back from Beck Road via a landscape buffer of native grassland, to reduce the proximity of the panels to road users, retain views along the road corridor of the churches in Isleham and Freckenham and to retain a perception of travelling through the landscape that separates the settlements. Proposed woodland planting, mixed scrub and rush pasture around the edges of the parcel will assist with landscape integration and screening of views. A self-binding gravel permissive path parallel to Beck Road will connect Isleham and Freckenham via a new memorial to the B50 crash site. Mixed scrub with scattered tree habitats within the proposed

grassland will deter people from encroaching on the to the proposed stone-curlew plots within ECO1 and ECO2. A further permissive path will follow the boundaries of E05, providing a circular route with views across the open countryside;

f. Parcel ECO1 – the proposals are for an area of native grassland implemented via non-invasive methods, as a positive response to the below ground archaeology. In combination with ECO 2, this will retain the open character of land between Isleham and Freckenham, to the west of Beck Road;

g. Parcel ECO2 – native grassland and stone curlew plots, which in combination with ECO2 will retain the open character of the land between Isleham and Freckenham, to the west of Beck Road;

h. Parcels E08, E09 and E10 will be enclosed by existing hedgerows strengthened by additional mixed shrub planting and linear belts of trees and shrubs to screen views of the panels and reinforce existing vegetation patterns. There is also a proposed area of native grassland within E09, above an archaeological mitigation area;

i. Parcel ECO3 will establish a substantial offset from Freckenham Road, to reduce the perception of the solar panels and proximity to residents. The U6006 County Wildlife Site will be retained and existing arable areas reverted to lowland acid grassland as an improvement to the land cover compared to the agricultural fields;

j. Parcel E12 – solar panels have been sited to the south of Worlington and offset from the residential land uses by lowland acid grassland. These grassland areas would also provide opportunities for stone curlew mitigation. A new hedgerow is proposed along the eastern edge of E12 to join existing hedgerow to act as screening barrier from the solar panels for PRoW users.;

k. Parcels E12 to E17 – solar panels have been located within the smaller field parcels and offset from the intervening pine lines, to retain the field pattern and vegetation cover. The proposed security fence will be located 30m from the outside edge of the vegetation which lines U6006 and which will be enhanced through inter-planting and natural regeneration. Solar panels in E12 and E13 set back at least a further 5m to maintain the open setting. ;

l. Parcels E19 to E22 – the solar panels in this part of the Site have also been located within the smaller field parcels, to reflect the landscape pattern and retain and enhance the intervening pine lines through inter-planting and natural regeneration. New woodland is proposed around the perimeter of the parcels to screen views from residents adjacent to Bridge End Road and the PRoW to the south, as well as screen the structures and reduce the perception of the Scheme from Badlingham;

m. Parcels E24 and E25 – new woodland planting is proposed to the north, east and south of these parcels to screen the structures and reduce the perception of the scheme when travelling along Worlington Road;

n. Parcels E26 to E29 – the solar panels have been located within the small-scale fields and are offset from the boundary vegetation. This is to retain the landscape pattern and screen the panels from wider views;

o. Parcels E30 to E32 – the woodland in the south-east part of the Site and around the field parcels has been retained for visual screening and retaining the vegetation cover. Additional hedgerow and woodland planting are proposed adjacent to Golf Links Road to screen views for motorists and from views from the wider landscape to the north, as well as reduce the perception of the Scheme in relation to Worlington.

5.2.6 With reference to Parameter Plan **Figure 3-2 [EN010106/APP/6.3]**, the design principles have been incorporated across Sunnica West Site A by:

a. Siting the primary construction compound and the BESS and substation within W17, so that it is in part adjacent to existing barns and bordered by the mature woodland of Sounds Plantation which aids in screening the structures from the west and in views from the east, their suitable rendering in the context of the woodland, to aid in reducing the perceived overall massing of the structures;

b. Conserving the field boundaries and the vegetation patterns by locating the solar panels within the fields and offsetting them from the existing hedgerows and trees. This also retains views across the landscape to valued features including Avenue and plantations; and

c. Implementing new woodland and hedgerows to aid in visually screening the Scheme and reflect the vegetation patterns, as well as new modified grassland mixes beneath the solar panels to improve the range of fauna and increase the biodiversity across the Site in comparison to intensive agriculture.

5.2.7 Other embedded mitigation across the Sunnica West Site A site which is shown on **Figure 3-2 [EN010106/APP/6.3]** and secured within the Landscape Masterplan and Environmental Masterplans **[EN010106/APP/8.47 and EN010106/APP/8.77]** are:

a. Parcel W03 – siting the solar panels between woodland blocks and Foxburrow Plantation and reinforcing the vegetation patterns with new woodland planting to aid in screening this part of the Scheme from the wider landscape and retaining a physical separation from Chippenham Road and Snailwell;

b. Parcel W04 – new native grassland across part of the parcel, in response to below ground archaeology. The solar panels have also been sited away from The Avenue so that new woodland can be implemented. A temporary fence, rendered in a colour to aids its integration in the landscape will also be implemented in relation to views from Snailwell Gallops, until the establishment of the proposed planting, secured via the OLEMP;

c. Parcel W05 – siting the solar panels away from The Avenue so that new woodland can be implemented along the southern edges of the parcel, which is considered appropriate in the context of the Avenue and Chippenham Parl. There would also be a new woodland mix along the southern edge of the parcel which would include a higher percentage of evergreen species and a temporary fence, rendered in a suitable colour, to screen views from motorists on the A14, secured via the OLEMP.

d. Parcels W06 and W07 – new woodland planting to the west of the parcels, to reduce their visibility in longer distance views from The Limekilns, as well as provide new vegetation links across the landscape. The existing woodland between these parcels has also been retained, with panels and associated infrastructure offset from the woodland;

e. Parcels W08 and W09 – limiting the extent of the solar panels across these fields, so as to respond positively to below ground archaeology. New native grassland would extend across the archaeological areas, to create a continuous sward of grassland with that which will be present under the panels;

f. Parcels W10, W11 and W12 – the extent of the solar panels has been located to ensure a physical separation from the boundary wall of Chippenham Park and Chippenham Hall. New hedgerow and woodland are proposed along the northern edge of these parcels to provide visual screening from La Hogue Road. New woodland, hedgerow, mixed scrub and rush pasture is also proposed along the northern edge of W10, to provide visual screening from the same road and reinforce the existing vegetation patterns;

g. Parcel W15– the solar panels have been offset from the watercourse, along with the retention of the riverside trees and vegetation and road networks. New woodland is proposed around the perimeter of the parcels to screen the Scheme, as well as to soften views of the A11 from Kennett and increase the vegetation.

5.2.8 In relation to the below ground cable routes, there would be new planting to replace vegetation removed during the construction phase where practicable.

5.2.9 At Burwell National Grid Substation, there would be replacement planting along the Newnham drove where the vegetation is to be removed for cable route construction.

5.3 Proposed planting

Introduction

5.3.1 This section addresses the objectives, design principles and outline specification for woodland, hedgerow and tree planting, including the replacement of vegetation lost due to construction.

General objectives

5.3.2 The proposed planting will deliver the following:

a. Assist in integrating the Scheme into the landscape by responding to local character through layout and species selection.

b. Replacement of vegetation removed to facilitate construction of cable routes and access tracks to reinstate connectivity.

c. Creation and establishment of new hedgerow and woodland habitats that link with and enhance existing green infrastructure networks.

d. Maintain the screening function of existing vegetation during the lifetime of the Scheme.

e. Provide multiple functions and benefits, including visual screening, habitat, shade, flood attenuation, climate change resilience and amenity.

General design principles

5.3.3 The following design principles will guide the detailed design of proposed planting:

a. Proposed planting will be designed to integrate with existing vegetation to provide continuous habitat as far as practicable.

b. The edges of areas of planting will be feathered to increase habitat diversity with a greater proportion of shrubs.

c. Native species will typically make up the larger proportion of a planting mix within the proposed green infrastructure.

d. Plant mixes will comprise a diversity of species and provenances to maximise resilience to pests and diseases and climate change.

e. Plant mixes will be adapted to each part of the site to respond to local character and site conditions.

f. Inter-planting to fill gaps that may develop in existing vegetation where this provides a screening function.

g. When further topsoil soil analysis has been carried out, mulch/compost mixes will be considered to improve soil fertility and appropriate plant species will be chosen depending on soil type.

h. Root barriers will be provided to protect archaeological protection areas adjacent to W04 and E32. The specification for these features will be determined at the detailed design stage, post-consent.

i. Topsoil arising from the clearance of existing vegetation will be re-used on site within proposed woodland areas where appropriate.

j. Where trees cannot be planted over the cables, habitat continuity will be maintained through planting of shrub species.

Outline specification

5.3.4 As set out above, various habitats and species have been identified through baseline assessments, which are prevalent and adapted to the local environment. The longer a tree species has been present in the British Isles the wider the range of other species it can support to maximise biodiversity. These species will form an important part (at least 80%) of the planting mixes for the Scheme, which will be adapted to respond to and reinforce the different character areas of the landscape across the Scheme.

5.3.5 Species diversity is important as a diverse range of plants can help cope with warmer climates and limit the damage caused by pest and disease outbreaks, enhancing biosecurity. Current Forest Research guidance stresses this, by suggesting a mix of provenances (the geographical origin of the plant material) of recommended species that are resilient and adaptable for an unpredictable future climate. A mix of provenances will therefore be specified:

a.1/3 of seed from same local seed source as the site.

b. 1/3 of seed from source up to 2º of latitude south of the site.

c. 1/3 of seed from slightly warmer climate sources from 2 to 5° of latitude south of the site.

5.3.6 The species mixes will be agreed at the detailed design stage with the relevant local planning authority pursuant to the detailed LEMPs. The species proposed will be suitable for the location and take into consideration climate change, which may make it more suitable to plant non-native species that can still provide a habitat

opportunity. Indicative plant species lists are set out in Annex C, responding to the three National Character Areas defined by Natural England, as follows:

a. NCA 46: The Fens
b. NCA 85: The Brecks
c. NCA 87: East Anglian Chalk

5.3.7 Reference has also been made where relevant to the locally characteristic species listed in the Cambridgeshire Landscape Guidelines (Cambridgeshire County Council, 1991) (CLG).

5.3.8 Final species mixes for each proposed area of habitat, plant numbers, and detailed specifications for plant material, planting, establishment maintenance and long-term aftercare will be developed at the detailed design stage, post-consent. This will also include consideration of their resilience to predicted changes in climate.

Plant specification

5.3.9 There are many factors which will influence the selection and specification of plants for the Scheme, including:

a. Geology and soils;
b. Climate;
c. Latitude;
d. Availability of irrigation;
e. Function – e.g., habitat creation or visual screening;
f. Prevalence of pest and diseases in the environment, for example oak processionary moth;
g. Commercial availability; and
h. Management arrangements.

5.3.10 Climate change resilience and biosecurity, including the control of Invasive Non-Native Species (INNS), will be important considerations in developing the detailed specification for plants, implementation and management post-consent. The specification will be developed with reference to legislation and best practice including:

a. Forest Reproductive Material Regulations (Great Britain) (HMSO, 2002);
b. UK Forestry Standard (Forestry Commission, 2017);
c. Ecological Site Classification for Forestry in Great Britain – a tool to help select ecologically suited species to specific sites (Forest Research, 2019a);
d. Plant Health and Biosecurity: The Landscape Consultant's Toolkit, (Landscape Institute, 2019);
e. Tree Species Selection for Green Infrastructure: A Guide for Specifiers (TDAG, 2018);
f. Trees in hard landscapes: A guide for delivery (TDAG, 2014);

g. The Right Trees for Changing Climate Database (Forest Research, 2019b);

h. Urban Tree Manual (Forest Research, 2018); and

i. Blue Green Infrastructure Manual (Institution of Civil Engineers, 2023).

5.3.11 Relevant standards that will be applied include:

a. PAS 100:2018 - *Specification for composted materials*

b. BS 3882:2015 - *Specification for topsoil*

c. BS 3936-1:1992 - *Nursery stock - Specification for trees and shrubs*

d. BS 3936-4:2007 - *Nursery stock - Specification for forest trees, poplars and willows*

e. BS 4428:1989 - *Code of practice for general landscape operations (excluding hard surfaces)*

f. BS 8545:2014 - *Trees: from nursery to independence in the landscape. Recommendations*

g. BS 42020:2013 - *Biodiversity. Code of practice for planning and development*

h. BS 8683:2021 - *Process for designing and implementing Biodiversity Net Gain*.

5.3.12 Transplants and whips have been specified across the Scheme because they have less developed root systems than larger planting stock and establish better in the field.

General principles for establishment maintenance

5.3.13 All new tree planting will be subject to a five-year establishment maintenance regime. During this time, all plants found to be dead or dying at the end of each growing season will be replaced within the next planting season.

5.3.14 If areas of planting are seen to be failing, soil samples may be needed to identify potential soil issues affecting tree health. Either soil remediation would be required or, if not practical, a more suitable tree species or location would be chosen. Any changes to the original planting scheme within a detailed LEMP will be agreed with the relevant LPAs, although for the avoidance of doubt such approval would not be required for individual planting changes.

5.3.15 In the interests of wildlife, hand weeding, where feasible, should take precedence over the use of herbicides in hedgerows. However, for example in the treatment of invasive non-native species, herbicide may be required.

5.3.16 Where herbicide application is required and agreed through the LEMP with the relevant local authority, it will be applied in July - August in small, controlled areas around the base. Such herbicide application will only be undertaken by an appropriately certified operative qualified in accordance with statutory requirements relevant to their use and trained to the appropriate standard whose company was a member of recognised trade association. Only suitable products to be used as described on the product label.

General principles for long-term management

5.3.17 Maintenance works to existing trees will, as far as practicable, be planned to avoid the bird nesting season. If essential tree works are required during the bird nesting season, then an ornithologist will be required to check for the presence of active nests prior to any tree works.

5.3.18 Following the completion of the initial five-year establishment maintenance period all new planting plots will undergo a condition assessment twice annually until year 15 of operation and then annually until decommissioning. An appropriate programme of works will be developed to address changes in condition and site requirements. Such work may include; additional replacement planting, tube/stake removal, pruning, coppicing, or thinning out of plots to encourage establishment.

5.4 Hedgerows

Introduction

5.4.1 Native species hedgerows across the Order limits will provide valuable habitat and food source for local wildlife. Proposed hedgerows linking to the existing hedgerows will provide a continuation of wildlife corridors and protect adjacent fragile habitats. Hedgerows also provide a visual screening function.

5.4.2 The Scheme will introduce 6km of hedgerow infill planting and new hedgerow creation. Detailed surveys will be carried out at the detailed design stage to determine the extent of gapping up of existing hedgerows required.

Objectives

5.4.3 The proposed hedgerow planting will deliver the following:

a. Establish continuous, dense hedgerows with closed canopy by year 15 of operation.

b. Reinforce existing hedgerows by filling out gaps and providing a more resilient age structure and species composition.

c. Connect existing and proposed habitats within Scheme and the wider landscape, to enhance the nature network.

5.4.4 Many existing hedgerows will also provide a visual screening function.

Design principles

5.4.5 The following design principles will guide the detailed design of proposed planting:

a. Proposed hedgerows will, as far as practicable, follow the lines of existing or historic field boundaries.

b. The ultimate spread of hedgerows will be defined to allow for future maintenance and proximity to public rights of way and permissive paths when setting out. The minimum distance of vegetation from PRoW will be 2m.

c. Plant species mixes will be tailored for each plot depending on the soil, habitat and character at the detailed design stage, post-consent.

d. A wide range of native woody species of local provenance will be used to maximise biodiversity value.

Outline specification

5.4.6 Certain species poor hedgerows will be crossed by the Scheme and may need to be wholly or partially removed to facilitate construction works. If existing hedgerows have been coppiced and protected during construction, material protecting stools will be removed and the stumps allowed to regrow. On completion of construction, the affected hedgerow sections will be reinstated in full (respecting the legal extent of any public rights of way) and a diversity of native woody species of local provenance will be used to improve their biodiversity value. Species will include Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Hazel (*Corylus avellana*), Holly (*Ilex aquifolium*) and Field Maple (*Acer campestre*).

5.4.7 Hedgerow planting will be notch planted into cultivated ground in a double staggered row at five plants per linear metre with 60cm between rows. Plants will be supported by appropriate stakes and guards Gaps in existing hedgerows will be filled by interplanting with excavation by hand where necessary to minimise ground disturbance around existing plants. disturbance around existing plants. disturbance around existing plants. disturbance around existing plants.

5.4.8 Hedgerow planting will comprise a mix of 40-60cm and 60-80cm transplants. The exact species mix for each hedgerow will be developed at the detailed design stage to respond to the character and context of the site and species which a prevalent in the local landscape.

5.4.9 Hedgerow trees will also be introduced and is assumed that these would be planted as feathered trees of 150-175cm and 200-250cm, depending on species, at approximately 15m to 20m centres within the sections of infill and creation to allow for canopy spread. Fruit and nut bearing species would provide a food source for birds and small mammals.

5.4.10 An indicative list of key hedgerow shrub and tree species is given in **Annex C**.

Establishment maintenance

5.4.11 The following specific maintenance will be carried out within the five-year establishment period after planting:

a. Remove litter, rubbish and debris from the base of the hedgerow;
b. Clear weeds from around the base of each plant twice annually;
c. Spot treat undesirable species;
d. Re-firm plants after high winds or frost heave;
e. Inspect and adjust guards;
f. Check and record failed or defective plants for replacement in the next available planting season;
g. Replacement of failed or defective plants.

5.4.12 No cutting of hedgerows planted as part of the Scheme is anticipated within the five-year establishment period.

Long term management

5.4.13 The following principles will apply to the management of existing hedgerows within the Scheme and hedgerow planting once it has fully established.

a. Non-desirable woody species will be removed during management operations and at other times as necessary, where this does not prejudice screening functions.

b. In order to fulfil the OLEMP objectives, each hedgerow will be managed as appropriate, i.e. by trimming, laying, coppicing, bulking up, etc.

c. If managed by laying, this should be on a rotational basis. This is a traditional management technique and seeks to retain the structural integrity of hedgerows and maintain connections with other habitats. Cutting should be carried out at the end of the winter in February, thereby retaining berries through the winter months for wildlife, and avoiding the bird breeding season.

d. Where trimmed, hedges should, wherever possible, be managed on a three year rotation with only one side cut a year to help develop the desired tall bushy structure.

e. Cutting back undergrowth, overgrowing or overhanging shrubs and minor tree branches from any pathways to maintain an unobstructed width of at least 2m or the existing width of the pathway, whichever is the greater.

f. The treatment of arisings will be considered along roadsides and may determine maintenance techniques such as cutting with a tractor-mounted reach arm with reciprocating cutter bar.

g. Retaining dead, over-mature or dying hedgerow trees wherever possible, but those which are considered dangerous for health and safety reasons, for example adjacent to public footpaths or residences, to be felled or lopped as appropriate to maintain safety, and in accordance with protected species constraints. This includes the retention and management of native Elm (*Ulmus procera*) where it has naturally colonised hedgerows.

5.4.14 To sustain a dense structure requires frequent cyclical operations or phased maintenance in the initial years following planting. All proposed and existing hedgerows will be allowed to grow tall and wide and maintained between 2m and 3m in height to provide maximum benefits for biodiversity and this natural regeneration will encourage a mosaic of successional habitats, forming broad habitat corridors throughout the Scheme.

5.5 Trees and woodland

Introduction

5.5.1 A total of 45ha of woodland is proposed, which together with the 35ha of existing woodland which will be retained, totals approximately 80ha of woodland across the Scheme. This equates to an approximate increase of 122% in woodland cover across Sunnica East Sites A and B and Sunnica West Site A. Groups of feathered trees will also be planted to reinforce existing vegetation patterns and aid in

enclosing the Scheme (refer to Environmental Masterplan **[EN010106/APP/8.47 and EN010106/APP/8.77])**. It is envisaged that these tree groups will be located within areas of grassland on the peripheries of the Scheme. The location and extent of each tree group will be determined on site at the detailed design stage. It is assumed that there will be up to 20 tree groups across the Scheme, each of approximately 20 feathered or standard trees. Therefore, the total number of trees in groups will be approximately 400.

Objectives

5.5.2 The long-term objectives of proposed woodland and tree planting seek to deliver the following:

a. Establishment of trees and shrubs to the required density and species composition within the first five years following planting.

b. A closed canopy by year 15 of operation.

c. Reinforcement of existing woodland by filling out gaps and providing a more resilient age structure and species composition.

d. Connecting existing and proposed habitats within Scheme and the wider landscape to enhance the nature network.

e. Establishment of woodland with a well-developed structure and the following characteristics:

i. A ground layer - supporting grasses, ferns, flowering plants and lichens that cover the ground;
ii. A field layer - supporting low-growing plants and shrubs that reach up to about 5m in height;
iii. An understorey layer - consisting of low-growing shrubs and coppice stools, smaller tree species and emerging larger tree species;
iv. A canopy layer - with trees that are a range of different heights;
v. Retained deadwood - in all woodland layers, particularly edges which provide a useful habitat for insects and fungi; and
vi. Open areas – designating open ground as glades (at least 10%) that have no mature trees, letting light reach the ground and field layers.

Design principles

5.5.3 The following design principles will guide the detailed design of proposed planting:

a. Woodland planting will be designed to integrate with existing vegetation patterns to enhance habitat connectivity

b. The density of proposed woodland planting will be determined based on its typology and primary function.

c. Three principal types of woodland habitat are proposed with different primary functions. These different types of woodland, which all provide a visual screening function regardless of their primary function, are indicated on the Environmental Masterplans and are described below.

i. *Woodland* – blocks with an area greater than 0.5ha and generally wider than 20m with a higher proportion of trees to shrubs and a defined woodland edge

where there will be a higher proportion of shrubs and gaps where scrub can naturally colonise;

ii. *Linear belts of trees and shrubs* – generally less than 20m wide and with a minimum width of 10m. A higher proportion of shrubs than trees and a higher density of planting to maximise visual screening and enclosure at ground level;

iii. *Pine lines* – specific to the Breckland, these linear belts of trees will be planted with predominantly Scots Pine and shrubs and ground cover adapted to the acid soils.

d. Other sub-types of woodland may be defined at the detailed design stage, for example if opportunities to create wet woodland are identified.

e. The density of proposed climax trees within woodland planting will be designed to as far as possible limit the need for future thinning.

f. The extent of woodland planting proposed will take account of the future shading of the solar panel arrays by trees when fully established.

g. Woodland will be designed to respond to the conditions and character of each part of the site with reference to the landscape character assessment set out in Appendix 10D of the Environmental Statement and relevant updates to the evidence base available at the detailed design stage. For example, the planting palette for the parts of the Scheme which lie on the fringes of the Breckland will be characterised by stands of Scots Pine, interspersed with birch and occasional oak trees.

h. The understorey will be more sparsely planted, particularly at the edges, to allow natural colonisation with shrubs and perennial and annual ground flora. On the parts of the site which lie on the edge of the Fens, tree species in wetter areas will include Willow and Alder, which are characteristic of watercourses in the area.

Outline specification

5.5.4 The exact number of plants and stock size will be determined at the detailed design stage, taking consideration of the interface between proposed planting and existing vegetation and the need for interplanting.

5.5.5 The density of planting will reflect the function of each woodland block and will be determined at the detailed design stage, with reference to the following guidelines:

a. Woodland – 1.8m to 2.5m centres;

b. Linear belts of trees and shrubs – 1.2 to 1.8m centres;

c. Pine lines – 3m centres for trees, with 1.2 – 1.8m for shrubs.

5.5.6 The majority of plants will be nursery transplants, supplied at a height of between 40-60cm and 60-80cm. Such plants are easier to establish in the field than larger trees as their root systems adapt better to the growing position.

5.5.7 Approximately 20% of the planting mix will be larger feathered trees of 150-175cm and 200-250cm, depending on species.

5.5.8 English Elm (*Ulmus procera*) was once a prolific tree species in the Cambridgeshire landscape but were decimated by Dutch Elm Disease in the 20th century. They are

important for the diversity associated with them, primarily invertebrates as opposed to the species as part of floral diversity per se. They are important in parts of the study area, but rarely grow beyond 5m in height before succumbing to the disease. Elm will be allowed to colonise hedgerows and woodland through natural regeneration but will not form part of the planting mix.

5.5.9 All transplants will be notch planted into cultivated ground and will be enclosed by a biodegradable plant protection tube with appropriate support during establishment.

5.5.10 Feathered and standard trees will be pit planted supported by an appropriate timber stake and tree shelter, fitted as per manufacturer's recommendations.

5.5.11 A list of indicative woodland plant species is given in **Annex C** Table C3. This will be tailored and expanded for each plot depending on location to respond to character and context at the detailed design stage.

Establishment maintenance

5.5.12 The following specific maintenance will be carried out within the five-year establishment period after planting:

a. Remove litter, rubbish and debris from within woodland planting plots;
b. Clear weeds from around the base of each plant twice annually;
c. Spot treat undesirable species with an appropriate translocated herbicide;
d. Re-firm plants after high winds or frost heave;
e. Inspect and adjust guards;
f. Check and record failed or defective plants for replacement in the next available planting season;
g. Replace failed or defective plants.

5.5.13 No thinning of woodland plot is anticipated within the five-year establishment period.

Long term management

5.5.14 The following principles will apply to the management of existing woodland within the Scheme, including tree lines and pine lines and woodland planting once it has fully established.

a. Non-desirable woody species will be removed during management operations and at other times as necessary, where this does not prejudice screening functions.
b. Cutting back undergrowth, overgrowing or overhanging shrubs and minor tree branches from any pathways to maintain an unobstructed width of at least 2m or the existing width of the pathway, whichever is the greater.
c. Retaining dead, over-mature or dying trees wherever possible, but those which are considered dangerous for health and safety reasons, for example adjacent to public footpaths or residences, to be felled or lopped as appropriate to maintain safety, and in accordance with protected species constraints. This includes the

retention and management of native Elm (*Ulmus procera*) where it has naturally colonised woodland.

d. Coppicing of species which strongly regenerate on rotation to maintain habitat condition and woodland density.

e. Thinning of woodland will:

   i. Commence early to maintain light penetration to the woodland floor for biodiversity development at the lower layers (e.g. crown reduction). The exact timing will be determined through annual vegetation surveys on a plot-by-plot basis and is not likely to commence until at least 10 years after planting;
   ii. Thin the trees that are suppressed (i.e. negative selection) by more dominant (i.e. positive selection) established trees;
   iii. Remove less than 15-20% of trees;
   iv. Select trees for thinning that are based on the management objectives, such as overrepresented species or those of poor form and condition; and
   v. Provide a continuity of different tree ages over time to support the woodland habitat.

f. Hibernacula will be created within woodland using brash and logs and poles from coppicing and thinning where available.

5.6 Mixed Scrub

Introduction

5.6.1 Mixed scrub is proposed within two areas of wide grassland. These are the area south of E05 and north of Beck Road within Sunnica East Site A and the area east of Lee Brook and south of La Hogue Road within Sunnica West Site A. Mixed scrub is also proposed to broaden habitats adjacent to existing hedgerows to improve connectivity, ground cover and visual screening where woodland is not appropriate or feasible.

Objectives

5.6.2 The proposed mixed scrub will deliver the following:

a. Habitat mosaics comprising scrub edge and shrubs which increase habitat diversity which respond to local soil conditions.

b. Create connections with adjacent habitat types.

c. Broaden the width of adjacent hedgerows to enhance visual screening.

d. Provide cover and food sources for birds and mammals.

e. Within the area south of E05, contribute to the amenity of the permissive path and discourage people from accessing the ECO1 and ECO2 areas to the south of Beck Road.

Design Principles

5.6.3 The following design principles will guide the detailed design of proposed planting:

a. Scrub will be encouraged to colonise patches within the areas shown on the Environmental Masterplans and on the edges of proposed woodland adjacent to grassland.

b. Species for planting will be appropriate to soil type, fertility and pH based on soil analysis and function.

c. Natural regeneration through the exposure of the bare ground will be used which encourages germination from the local seed bank, existing root systems and cut stumps to extend existing habitats and create new patches of scrub within grassland.

Establishment maintenance

5.6.4 The following specific maintenance will be carried out within the five-year establishment period after planting:

a. Remove litter, rubbish and debris from within the planted area;

b. Clear weeds from around the base of each plant twice annually;

c. Mechanically remove and spot treat undesirable species;

d. Re-firm plants after high winds or frost heave;

e. Inspect and adjust guards;

f. Check and record failed or defective plants for replacement in the next available planting season;

g. Replacement of failed or defective plants.

Long term management

5.6.5 The following principles will apply to the management of existing and proposed mixed scrub within the Scheme once it has fully established.

a. The extent of scrub will be controlled through cyclical cutting with no more than one third of each area cleared in each year.

b. The composition of scrub will be monitored to maximise structural variety and biodiversity benefit.

c. Chemical weed control may be necessary when controlling bramble if this becomes dominant.

5.7 Inter-planting

Introduction

5.7.1 The integrity and condition of existing woodland and hedgerow habitats varies across the site. The Scheme provides an opportunity to strengthen and diversify habitat areas to enhance ecosystem services and resilience and retain and improve the visual screening of solar panels and other infrastructure. It also creates opportunities for improving age structure, by planting trees which will eventually replace those which are towards the end of their life, for example within the pine lines which are characteristic of the Breckland. Inter-planting will be applied alongside natural regeneration and careful management to achieve the management objectives for each plot.

5.7.2 Inter-planting will require localised ground clearance and soil preparation to create areas for interplanting. The exact locations for inter-planting and species will be defined at the detailed design stage based on detailed site assessment.

Objectives

5.7.3 The proposed inter-planting will help deliver the following:

a. Enhanced resilience of woodland and hedgerows to the effects of climate change and biosecurity.

b. Dense visual screening of solar panels and other infrastructure.

c. Increase soil coverage to shade and crowd out weeds, reducing the need for maintenance.

Design Principles

5.7.4 The following design principles will guide the detailed design of proposed inter-planting:

a. Species will be appropriate to soil type, fertility and pH based on soil analysis, existing species composition and the functions of the habitat of each plot with reference to the tables in Annex C.

b. The density of inter-planting will be determined based on the existing density of vegetation, typology and proposed functions of the plot.

c. Planting will be set out in groups of three, five or seven plants of the same species for shrubs and one to three plants for trees.

d. Areas of inter-planting will be clearly marked on as-built drawings for establishment maintenance.

e. All planting will be protected against grazing by individual biodegradable tree guards.

f. Interplanting within existing pine lines will focus on improving age class distribution and density through planting Scots Pine as eventual replacement canopy trees and an understorey of scrub and ground flora.

Establishment maintenance

5.7.5 Competition within existing vegetation is higher than new planting in bare ground and therefore the maintenance requirements will be higher in the initial establishment period. The following specific maintenance will be carried out within the five-year establishment period after planting:

a. Remove litter, rubbish and debris from within the planted area;

b. Clear weeds from around the base of each plant four times annually;

c. Mechanically remove and spot treat undesirable species;

d. Re-firm plants after high winds or frost heave;

e. Inspect and adjust guards;

f. Check and record failed or defective plants for replacement in the next available planting season;

g. Replace failed or defective plants.

Long term management

5.7.6 Once established, inter-planting will be managed as part of the woodland in accordance with the principles set out in Section 5.7 above.

5.8 Natural Regeneration

Introduction

5.8.1 Natural regeneration is the process of allowing plants to naturally colonise the land. This can occur where there is a ready source of seed, where scrub has previously been cut down to ground level or suckers (new growth on existing plants that develops under the ground from the root or the main stem), from existing scrub.

5.8.2 Vegetation established by natural regeneration is likely to adapt well to local conditions. It will be facilitated through active management and alongside inter-planting where there are existing stands of trees and shrubs which require strengthening. This will be used to enhance habitat condition, connectivity and visual screening, for example along U6006 between E12 and E13. It will also be used to expand habitats, for example to enhance the edges of woodland to increase habitat diversity.

Objectives

5.8.3 Natural regeneration will deliver the following:

a. Enhance existing habitat resilience by improving the age structure.

b. Increase the density of existing habits to enhance visual screening.

c. Retain existing stands of Elm as a source of new plant material.

Design Principles

5.8.4 The following design principles will guide the detailed design:

a. Natural regeneration will be used to increase the density or expand the extent of existing habitats.

b. Shrub species will be allowed to establish around scattered trees in mixed scrub habitats, for example pine lines.

c. Natural regeneration should be planned and based on an assessment of desirable species which appear to naturally succeed locally.

d. Natural regeneration species will be encouraged to colonise around habitat edges to increase the length of the permitter and density.

Long term management

5.8.5 Natural regeneration will be managed as part of the woodland in accordance with the principles set out in Section 5.5 above.

5.9 Grassland habitat creation and management – General Principles

Introduction

5.9.1 The Sunnica Scheme includes 752ha of grassland of which 710ha is created grassland. The grassland habitat creation will include the components of:

a. planning
b. measures/actions to be undertaken pre-construction
c. implementing grassland creation
d. enhancing existing grassland
e. maintenance of grassland
f. monitoring.

5.9.2 The planning for grassland creation is underpinned by the objectives for a given grassland area or plot within the Scheme and the soils and other related factors including shading. Before finalisation of the LEMP at detailed design, a thorough review of soil type and nutrient content will be undertaken to inform and underpin the creation of grasslands.

Objectives

5.9.3 There are a number of objectives that grassland creation needs to meet:

a. a diversification of the flora of the parcels/fields over and above that presently found at a landscape acle on what are mostly arable fields, encouraging a species composition as indicated by the soil characteristics, e.g. relatively acid or relatively calcareous with plots being given target species mixes to be attained within a fixed time period to meet biodiversity net gain (BNG) criteria;
b. the provision of resources for a range of insects and other invertebrates achieving a broader increase in biodiversity;
c. habitat for a number of lowland farmland birds including provision of foraging for Stone Curlew;
d. enabling the restoration of the soils across the Scheme including a reduction in nutrients and an increase in the organic content;
e. the stabilisation of the soils under and around the solar arrays to prevent any loss of soil in run-off; and
f. a resilience to changing climate and its impacts.

Design principles

5.9.4 The design of the proposed grassland will be governed by:

a. the nature of the landscape occupied by the Scheme which sits in between Breckland and the Fens, the former being the more dominant;

b. the nature of the soils which will be further investigated prior to construction;

c. consideration of the previous and current land usage throughout the working landscape (see in Annex B Table 1); and

d. the planned biodiversity net gain (BNG) as inputted to the BNG assessment and calculation to ensure that the Scheme meets its biodiversity targets.

5.9.5 Breckland soils are mostly sands and loamy sands with variable amounts of a stone, mainly flint and are typically far from simple in nature and distribution. Within short distances, variation in the amount of silt, clay, chalk and stone can result in variations in acidity, alkalinity and moisture retention, which affect the vegetation and its species composition. Blown sand is a key element of the edaphic environment, which can vary from a few to many centimetres in depth, underneath of which, or mixed in lie the weathered surface of the chalk, chalky sandy tills, more loamy tills and chalky boulder clays, or chalk-sand mixtures, loams and gravels derived from them.

5.9.6 Fen peat soils, in contrast, are high in organic content accumulated over the millennia. Leaching nutrient ions from these soils depends to a certain extent on the drainage of the soils. A relatively high water table will accelerate this process as well as providing the conditions needed for the plant species of wet lowland grassland.

5.9.7 The plans for grassland creation at this stage are based on existing knowledge of the soils (Appendix 12B) and the soil map (Annex D), the baseline data for which will be further expanded prior to construction. The soils are generally quite basic due to the presence of chalk and are light and sandy with a relatively low surface area for the retention of nutrient cations and phosphate. Nitrate is very weakly retained in these soils such that any unused excess is rapidly leached out. Ammonia is very rapidly consumed and given that fertilisation will cease, nitrogen will decline to a low equilibrium. Phosphate binds very strongly to the narrow edges of clay mineral sheets (cations being held on the larger faces between clay sheets), so the decline in current phosphate availability will be slower. Given that these are sandy soils with low clay content, this leaves relatively fewer sites in a volume of soil to which phosphate can bind. See data tables from page 91 in Appendix 12B.

5.9.8 Forward planning and preparation pre-construction would include:

a. determining the areas and locations of different grassland types, quantifying the amount of seed needed for each and identifying sources of seed;

b. identifying those plots/field where rapid grassland establishment is necessary, e.g. Stone Curlew plots, and how to achieve this;

c. identifying and procuring seed with local, i.e. East Anglia, provenance including seed houses and donor grassland sites;

d. planning the soil preparation ahead of grassland creation for all plots/fields and ensuring that this is integrated into other pre-construction Scheme preparation works;

e. developing a grazing strategy for the Scheme based on successful implementation of grazing on other solar farm schemes including procurement and establishing key resources on-site; and

f. for some plots/fields, pre-sowing with a nurse crop.

5.9.9 The end point of the planning stage will be a table listing all of the plots/fields with a prescription for the grassland creation (and for any other habitat) and proposed maintenance and monitoring.

Implementing grassland creation

5.9.10 The grassland habitat created will not be treated with any insecticides, molluscicides or other such pesticides. In order to enable target species to establish and to maintain bare areas, herbicide will be used in those fields/plots where such undesirable plants appear from existing seed banks, volunteer (self-sown) crops and, or via wind dispersal. This control can be achieved in a targeted manner using a weed wiper or targeted spraying using a knapsack sprayer. There will be no application of fertilisers.

5.9.11 There will be three main approaches to implementing grassland creation, partly in recognition of different conditions and constraints across the Scheme, the needs of particular grassland types and the objectives of the grassland, e.g. habitat for lowland farmland birds. These approaches will be developed with input and comment from the Ecology Advisory Group and other local stakeholders. The approaches include sowing appropriate seed mixes on plots/fields prepared by:

a. Ploughing: Plots/fields will be ploughed by the present land owner prior to the plots/fields being handed over. The field will receive light harrowing to prepare for the sowing of the seeds. Where the dry acid soil was the pre-arable situation, the soil will naturally approach a natural equilibrium once fertiliser inputs cease, a process which will take a number of years.

b. Soil skimming: A part of the existing ploughed topsoil would be skimmed off particularly for those areas where the amount of chalk influence is low. This effectively reduces phosphate availability and removed topsoil can then be stored as with that from the areas of track and hard standing. This soil remains available for reinstatement on decommissioning were the grassland area so created is not to be retained. If it is being retained the topsoil can be beneficially spread with similar material outside the habitat area. This approach avoids ploughing as this would dilute what topsoil was left, which although good for grassland creation, would be a loss of the productive topsoil resource.

c. Natural regeneration: A small number of plots/fields or parts thereof will be selected which will be allowed to regenerate naturally with selective removal of unwanted species.

5.9.12 Recognising the variations that are likely to be encountered in soil conditions across a plot/field, the success rates in germination and establishment will be spatially variable, necessitating follow up with respect to local conditions and the need to alter

the species composition of a given mix, e.g. responding to drier soil with more sand. Overall, as for Breckland, this variation will enhance floral biodiversity.

5.9.13 For those areas of lowland wet grassland, the drainage will be managed to ensure a higher water table to enable appropriate plant species to establish. This could be through manipulating in-field drainage or through raising water levels in ditches and streams, e.g. using woody debris to hold water back.

5.9.14 Seed used on the Scheme will be of local provenance, i.e. with respect to East Anglia. The three main sources would be:

a. commercially available seed, necessitating contacting appropriate seed houses well ahead of construction;
b. seed harvested from sites in East Anglia, for some species preferably from Breckland and, or the Breckland edge; and
c. green hay, again, from sites in East Anglia, for some species preferably from Breckland and, or the Breckland edge.
d. Seed sowing would be using drills appropriate to the size of parcel/field or plot.

Enhancement

5.9.15 There is relatively little existing grassland habitat within the Scheme. That which is present, is either within a Local Wildlife Site or riparian to streams and ditches. Based on the biodiversity objectives for a given area of such grassland (these will already exist for Local Wildlife Sites), measures will be determined to enhance the biodiversity of these grasslands. This would be as part of the grassland maintenance programme and could be through, e.g. introducing a grazing regime or by through raising water levels in ditches and streams, e.g. using woody debris to hold water back. In the case of Local Wildlife Sites, the Ecology Advisory Group would have a key role in deciding on appropriate regimes.

Establishment maintenance and long-term management

5.9.16 The maintenance of the grasslands will comprise post-sowing remediation works and establishment of on-going management including frequency and levels of intensity as well as the responsible agency.

5.9.17 Depending on the level of plant establishment, post seed sowing remediation could entail:

a. understanding why establishment is low or failed and determining follow up measures;
b. measures to deal with unacceptable weed growth using spot weeding and including herbicide treatment where appropriate;
c. boost soil mycorrhiza using soil or commercial inocula; and, or
d. re-seeding with the same or a modified seed mix.

5.9.18 On-going management will be based on either sheep grazing and, or mowing depending on the objectives for a given plot/field of grassland and type of grassland. The sheep grazing programme would have been established pre-construction with

an element of flexibility built in to accommodate differential rates of establishment and, where necessary, complement mowing.

5.9.19 An example of a grazing regime would be through low intensity pulse grazing using sheep with a stocking density of:

a. January-February: Light grazing on any new growth
b. Early March: Remove grazing to allow plants to grow and create good habitat for ground nesting birds
c. September - end of December: Main grazing period with light grazing down to a short sward height.

5.9.20 The mowing programme would likewise need to be flexible, particular at the early stages of sward establishment. The programme will include criteria for decisions on whether or not to gather cuttings, criteria which will alter as the soil changes and flora establishes. Specific mowing regimes will be needed to accommodate certain insect and invertebrate biodiversity more generally, e.g. a mosaic of plant heights helps encourage insects, and for particular lowland farmland birds. Where cut vegetation is removed from the grassland area, it will be taken to a composting location located nearby to avoid the need for material to be moved long distances. Composting points can be sited to provide nesting and hibernating habitat for reptiles.

Monitoring

5.9.21 Based on the objectives for the different areas of grassland across the Scheme, a monitoring regime will be established including:

a. criteria against which the grassland will be monitored;
b. when monitoring will take place: year post construction and season;
c. who will undertake the monitoring;
d. inclusion of any proposed remediation; and
e. to whom the outcome of the monitoring is communicated.

5.9.22 The planned monitoring will be included in the table of all plots/fields and their grassland type and management.

5.10 Grassland habitat creation and management – Modified Grassland (Panelled Areas)

Introduction

5.10.1 The Sunnica Scheme includes 752ha of grassland of which 466ha will be created as modified grassland mainly located under the PV panels. The locations for modified grassland are illustrated on the Outline Environmental Masterplans **[EN010106/APP/8.47** and **EN010106/APP/8.77]**.

5.10.2 The following list of attributes is characteristic of modified grasslands:

a. typically dominated by a few species, most notably perennial rye grass (Lolium perenne) and white clover (Trifolium repens);

b. comprising common grasses palatable to livestock including rye grass (Lolium spp.), timothy-grass (Phleum pratense), cock's-foot (Dactylis glomerata), crested dog's-tail (Cynosurus cristatus) and Yorkshire fog (Holcus lanatus) and herbaceous species including, creeping buttercup (Ranunculus reopens), greater plantain (Plantago major) and dandelion (Taraxacum officinale); and

c. typically about nine species per m^2.

Objectives

5.10.3 There are a number of objectives that modified grassland creation needs to meet:

a. enabling the restoration of the soils under the panels including a reduction in nutrients and an increase in the organic content;

b. the stabilisation of the soils under the solar arrays to minimise any loss of soil in run-off s;

c. the provision of resources for a range of insects and other invertebrates achieving a broader increase in biodiversity and foraging for pollinators; and

d. a resilience to changing climate and its impacts.

Design Principles

5.10.4 The design of the proposed modified grassland will be governed by:

a. sowing seed mixes of local provenance and appropriate for the conditions;

b. implementing a long-term management regime suitable for the site, soil and grassland type, e.g. grazing; and

c. monitoring grassland to analyse changes in grassland composition and structure to inform future management.

5.10.5 The modified grassland will be obtained from local sources and will not be treated with any pesticides including insecticides or fungicides. Also, there will be no application of fertilisers and no irrigation. If any pernicious weed is considered to become a problem, then hand pulling or spot treatment with a herbicide should be undertaken prior to the weeds setting seed.

5.10.6 The approach to implementing modified grassland creation will be developed with input and comment from the Ecology Advisory Group and set out in the detailed LEMP for the relevant locations.

Enhancement

5.10.7 The 469ha of modified grassland that will be created is immediately more biodiverse than the arable habitat and its biodiversity value will increase as more species colonise including more grass and herbaceous species and mosses. This represents a significant enhancement in the biodiversity as evidenced by a biodiversity net gain of >10%. (There is only a small area of existing modified grassland habitat within the Scheme, 15ha, mainly located along the proposed cable route which will be restored once the construction works are finalised.

5.10.8 The ecology of the proposed energy farm will be substantially enhanced by the cessation of agro-chemical inputs and irrigation benefiting the soils and the quality of the watercourses draining from and through the Scheme.

Establish maintenance and long-term management

5.10.9 This section outlines the key considerations for the management of established modified grassland. A detailed plan for the establishment and management of modified grassland under the panels will be developed for the 4-5 year establishment maintenance period.

5.10.10 Post-sowing, the maintenance of the modified grassland will comprise remediation works and establishment of on-going management including frequency and levels of intensity of grazing and, where necessary, mowing. To create the modified grassland under the panels, the field will be left uncultivated by the landowner prior the handover. The soils will be lightly harrowed followed by sowing of the seeds across the existing surface. It is anticipated that commercially available seed of regional provenance will be required. A typical seed mix appropriate for the freely draining lime-rich loamy soils (east site) would be Emorgate's EM5 - Meadow Mixture for Loamy Soils and for freely draining sandy Breckland soils (west site) would be Emorgate's EM7 – Meadow Mixture for sandy soils.

5.10.11 Immediately after sowing, the ground will be left undisturbed and unwatered to allow grassland to establish naturally.

5.10.12 The modified grassland within the solar farm should be cut or grazed to 50mm length several times during the first spring following sowing. Arisings will be raked into piles and left *in situ* for seven days before collection and either use in making on-site compost piles for use by reptiles or removal to an off-site green waste composting facility.

5.10.13 On-going management will be based on either low density sheep grazing, e.g. between September and February and, or mowing (where necessary) depending on the objectives for the modified grassland.

5.10.14 Once modified grassland is established, good grassland management seeks to:

a. maintain grassland cover; and

b. increase species diversity and species-richness.

5.10.15 The appropriate overall stocking rate for modified grassland is dependent on the aims of management and will vary significantly depending on soil fertility and annual variation in weather. The appropriate stoking rate should be used as a starting point and adjusted if necessary, depending on more detailed knowledge of the site, or following a period of monitoring.

5.10.16 An example of a grazing regime for modified grassland (target condition: moderate) would be through low intensity pulse grazing using sheep with a stocking density of between 0.6-0.8 livestock units (LU) per hectare, I.e. (4-5 sheep/ha):

a. January-February: light grazing on any new growth

b. early March: remove grazing to allow plants to grow and create good habitat for ground nesting birds

c. September - end of December: main grazing period with light grazing down to a short sward height.

5.10.17 Where grassland becomes rich in wildflowers, grazing should be kept at a low level or excluded from early March through to early/ mid-August, which may also benefit ground nesting birds. Late summer and autumn grazing is probably the best management option for modified grassland, quite high stocking rates may be possible for short periods, although a longer period (3-4 months) of light grazing is preferable.

5.10.18 The vegetation is unlikely to have much nutritional value from December onwards and the aim should be to have achieved the year's grazing objectives by this time. However, some light sheep grazing may be possible during the late winter. Water troughs for sheep will be provided.

5.10.19 The following measures should be implemented for mowing grassland to maximise biodiversity by:

a. limiting cutting height: to prevent harm to reptiles and amphibians, grassland should initially be cut to a minimum sward height of 150mm.

b. varying the sward height to provide structural diversity, which is beneficial to wildlife;

c. once cut, leaving all arisings for seven days to allow for annual seeds to drop, after which, all arisings should be removed to compost piles on-site or offsite to prevent nutrient enrichment;

d. retaining and conserving ant hills as important grassland features, introducing varied aspects and exposing soils to a habitat, which can enhance biodiversity;

e. checking for ground nesting birds by an ecologist before mowing as, although birds typically finish breeding before July, some species, such as Skylark are known to have prolonged breeding periods, such that if an active bird's nest is found, the nest should be monitored, and mowing should be delayed until the chicks have fledged.

Monitoring

5.10.20 Based on the objectives for the modified grassland across the Scheme, a monitoring regime will be established to ensure that the biodiversity of the site is being maximised, to identify potentially new ecological constraints and to track the development of the modified grassland condition (moderate).

5.10.21 Monitoring the effects of grazing will be essential to inform the future development of grazing management. Given the number of variables that can affect the outcomes of a grazing management plan, site monitoring is essential to ensure that the aims of management are being achieved. If the aims are not being achieved, then changes to the management regime will be required. There is a wide range of monitoring methods available, from simple measures of grassland height to quadrat surveys measuring the frequency and condition of key indicator plants. Where the creation of

priority grassland types are proposed detailed surveys using quadrat surveys will be undertaken.

5.10.22 Monitoring for weed species will be essential, especially during the early stages of grassland establishment. Assuming an autumn sowing, the site should be monitored for weeds regularly during the following spring as the sward develops.

5.10.23 A detailed botanical monitoring plan will be developed, using specific indicators and key time intervals to track the progress of establishment.

5.10.24 The frequency of monitoring depends on the goals of monitoring and management. There is always uncertainty where new habitat is being established. This relates to weather conditions, the quality of seed stock or green hay, variations in the conditions of the recipient sites, and problems with pernicious weeds. It is therefore recommended the monitoring of the target habitats be intensive during the first 4 years to ensure any problems are identified early and resolved as quickly as possible

5.10.25 Short-term monitoring (the first 4 years) will be used to assess grassland target condition and success of the different management techniques (mowing and the long-term low intensity grazing).

5.10.26 Long-term monitoring (+4 years) will be used to assess the biodiversity of the site and new ecological constraints. Should be done every 5 years throughout the life of the development at regular intervals.

5.10.27 Modified grassland habitat indicators would typically include the presence and abundance of key herb species (usually those rarer species within the seed mix) as well as the number of flowering species present. The monitoring should be based upon the species list and thresholds identified. Once the target habitat(s) have been identified, a comprehensive species list of grassland species present will be compiled and used as the basis for monitoring. A scoring system will be used to determine the progression of the site towards the target habitat. Rarer plants will be scored more highly, and higher abundance will also be scored more highly. Target scores will be set for different time intervals, e.g. a score of 15 will be required in year 2 and 25 in year 4.

5.10.28 Monitoring will be carried out by competent botanists.

5.11 Grassland habitat creation and management – other Neutral Grassland, Lowland Acid Grassland and Lowland Calcareous Grassland (Outside Panelled Areas)

Introduction

5.11.1 The Sunnica Scheme includes 752ha of grassland of which 286ha will be created as either neutral grassland, lowland acid grassland or lowland calcareous grassland. These areas of grassland are outside those areas of the Scheme being used for the solar arrays (modified grassland), the locations for which are illustrated on the Environmental Masterplans **[EN010106/APP/8.47 and EN010106/APP/8.77]**.

5.11.2 The following list of attributes is characteristic of neutral grassland, lowland acid grassland or lowland calcareous grasslands:

a. high dependence on soil type, e.g. freely draining slightly acid sandy soils (lowland acid grassland) and freely draining lime-rich loamy soils (lowland calcareous grassland);

b. target plant species require low nutrient levels in the soil, regardless of grassland type and soil type, to avoid competition from other more competitive plant species; and

c. the previous and current land usage will have a strong influence initially.

5.11.3 The plans for this grassland creation at this stage are based on existing knowledge of the soils (Appendix 12B), the baseline data for which will be further expanded prior to construction. The soils are generally quite basic due to the presence of chalk and are light and sandy with a relatively low surface area for the retention of nutrient cations and phosphate. Nitrate is very weakly retained in these soils, such that any unused excess is rapidly leached out. Ammonia is very rapidly consumed and given that fertilisation will cease, nitrogen will decline to a low equilibrium relatively quickly. Phosphate binds very strongly to the narrow edges of clay mineral sheets (cations being held on the larger faces between clay sheets), so the decline in current phosphate availability will be slower. Given that these are sandy soils with low clay content, this leaves relatively fewer sites in a volume of soil to which phosphate can bind (see data tables from page 91 in Appendix 12B). This indicates that the establishment of neutral grassland, lowland acid grassland or lowland calcareous grassland will be facilitated by this diminution of soil nutrients.

Objectives

5.11.4 Forward planning and preparation objectives pre-construction will include:

a. determining the areas and locations of different grassland types, quantifying the amount of seed needed for each and identifying sources of seed;

b. identifying those plots/field where rapid grassland establishment is necessary, e.g. Stone Curlew plots, and how to achieve this;

c. identifying and procuring seed with local, i.e. East Anglia, provenance including seed houses and donor grassland sites;

d. planning the soil preparation ahead of grassland creation for all plots/fields and ensuring that this is integrated into other pre-construction Scheme preparation works;

e. developing a grazing strategy for the Scheme based on successful implementation of grazing on other solar farm schemes including procurement and establishing key resources on-site; and

f. for some plots/fields, pre-sowing with a nurse crop.

5.11.5 Post-construction, the emphasis will be on:

a. creating an island of grassland habitats that will benefit the wider landscape and support nature recovery within Suffolk and Cambridgeshire;

b. the stabilisation of the soils within the Scheme and their restoration in terms natural status;

c. the provision of resources for a range of insects and other invertebrates achieving a broader increase in biodiversity and foraging for pollinators; and

d. a resilience to changing climate and its impacts.

Design Principles

5.11.6 The design of the proposed grassland will be governed by:

a. sowing seed mixes of local provenance and appropriate for the conditions in the field/parcel;

b. implementing a long-term management regime suitable for the site, soil and grassland type, e.g. sheep grazing; and

c. monitoring grassland to analyse changes in grassland composition and structure to inform future management;

d. not using any pesticides including insecticides or fungicides; and

e. not applying fertilisers and not using irrigation.

5.11.7 If pernicious weeds become a problem, then hand pulling or spot treatment with a selective systemic herbicide should be undertaken prior to the weeds setting seed and becoming dominant.

5.11.8 The approach to implementing the creation of these grasslands will be developed with input and comment from the Ecology Advisory Group and set out in the detailed LEMP for the relevant locations. The approach includes sowing appropriate seed mixes on plots.

Enhancement

5.11.9 The 288ha of neutral, lowland acid and lowland calcareous grassland that will be created will be immediately more biodiverse than the arable habitat. The biodiversity value of these grasslands will increase as nutrient levels reduce and more species colonise including more grass and herbaceous species and mosses. This represents a significant enhancement in the biodiversity as evidenced by a biodiversity net gain of >10%.

5.11.10 The ecology of the proposed energy farm will be substantially enhanced by the cessation of agro-chemical inputs and irrigation benefiting the soils and the quality of the watercourses draining from and through the Scheme.

Establish maintenance and long-term management

5.11.11 This section outlines the key considerations for the management of established grasslands. A detailed plan for the establishment and management of these grasslands will be developed for the 4-5 year establishment maintenance period.

5.11.12 To create these grasslands, the field will be left uncultivated by the landowner prior the handover. The soils will be lightly harrowed followed by sowing of the seeds across the existing surface.

5.11.13 Seed used on the Scheme will be of local provenance, i.e. with respect to East Anglia. The three main sources in order of preference would be:

a. seed harvested from sites in East Anglia, for some species preferably from Breckland and, or the Breckland edge;

b. green hay, again, from sites in East Anglia, for some species preferably from Breckland and, or the Breckland edge; and

c. commercially available seed, necessitating contacting appropriate seed houses well ahead of construction.

5.11.14 Seed sowing would be using drills appropriate to the size of parcel/field or plot.

5.11.15 Immediately after sowing, the ground will be left undisturbed and un-watered to allow grassland to establish naturally.

5.11.16 Post-sowing, the maintenance of the grasslands will comprise:

a. mowing the grass to 50mm length several times during the first spring following sowing and removing the cuttings with mowing continued for at least the first two years to assist in depleting the soil of nutrients;

b. arisings will be raked into piles and left in situ for seven days before collection and either use in making on-site compost piles for use by reptiles or removal to an off-site green waste composting facility;

c. remediation works and establishment of on-going management including deciding when to use grazing, its intensity and frequency to match grassland establishment and sward.

5.11.17 On-going management will be based on either low density sheep grazing, e.g. between September and February and, or mowing (where necessary) depending on the objectives for a given grassland type and, or parcel/field.

5.11.18 Once these grasslands are established, good grassland management will seek to:

a. maintain grassland cover; and

b. increase species diversity and species-richness.

5.11.19 The appropriate overall stocking rate for these grasslands for grazing will be dependent on the aims of management and will vary significantly depending on soil fertility and annual variation in weather. The appropriate stocking rate should be used as a starting point and adjusted if necessary, depending on more detailed knowledge of the site, or following a period of monitoring.

5.11.20 Grazing (and mowing) will be kept at a low level or excluded from early March through to early/ mid-August, to enable plants to flower and seed, which may also benefit ground nesting birds. Late summer and autumn grazing is probably the best management option for these grasslands, quite high stocking rates may be possible for short periods, although a longer period (3-4 months) of light grazing is preferable.

5.11.21 The vegetation is unlikely to have much nutritional value from December onwards and the aim should be to have achieved the year's grazing objectives by this time.

However, some light sheep grazing may be possible during the late winter. Water troughs for sheep will be provided.

5.11.22 The following measures should be implemented for mowing grassland to maximise biodiversity by:

a. limiting cutting height: to prevent harm to reptiles and amphibians, grassland should initially be cut to a minimum sward height of 150mm.

b. varying the sward height to provide structural diversity, which is beneficial to wildlife;

c. once cut, leaving all arisings should be left for seven days to allow for annual seeds to drop, after seven days, all arisings should be removed to compost piles on-site or off from site to prevent nutrient enrichment;

d. retaining and conserving ant hills as important grassland features, which can enhance biodiversity; and

e. checking for ground nesting birds by an ecologist before mowing as, although birds typically finish breeding before July, some species, such as Skylark are known to have prolonged breeding periods, such that, if an ecologist should check for nesting birds before mowing. If an active bird's nest is found, the nest should be monitored, and mowing should be delayed until the chicks have fledged.

Monitoring

5.11.23 Based on the objectives for these grasslands across the Scheme, a monitoring regime will be established to ensure that the biodiversity of the various fields/parcels is being maximised, to identify potentially new ecological constraints and to track the development of the grassland condition of the different grasslands and the fields/parcels (moderate).

5.11.24 Monitoring the effects of grazing will be essential to inform the future development of grazing management. Given the number of variables that can affect the outcomes of a grazing management plan, site monitoring is essential to ensure that the aims of management are being achieved. If the aims are not being achieved, then changes to the management regime will be required. There is a wide range of monitoring methods available, from simple measures of grassland height to quadrat surveys measuring the frequency and condition of key indicator plants

5.11.25 Monitoring for weed species will be essential, especially during the early stages of grassland establishment. Assuming an autumn sowing, the site should be monitored for weeds regularly during the following spring as the sward develops.

5.11.26 A detailed botanical monitoring plan will be developed, using specific indicators and key time intervals to track the progress of establishment.

5.11.27 The frequency of monitoring depends on the goals of monitoring and management, as well as available resources. There is always uncertainty where new habitat is being established. This relates to weather conditions, the quality of seed stock or green hay, variations in the conditions of the recipient sites, and problems with pernicious weeds. It is therefore recommended that the monitoring of the target

habitats be intensive during the first 4 years to ensure any problems are identified early and resolved as quickly as possible

5.11.28 Short-term monitoring (the first 4 years) will be used to assess grassland target condition and success of the different management techniques (mowing and the long-term low intensity grazing).

5.11.29 Long-term monitoring (+4 years) will be used to assess the biodiversity of the different grasslands, the fields/parcels and any new ecological constraints. This should be done every 5 years throughout the life of the development.

5.11.30 Habitat indicators for the different types of grassland would typically include the presence and abundance of key herb species (usually those rarer species within the seed mix) as well as the number of flowering species present. The monitoring should be based upon the species list and thresholds identified. Once the target habitat(s) have been identified, a comprehensive species list of grassland species present will be compiled and used as the basis for monitoring. A scoring system will be used to determine the progression of a field/parcel towards the target habitat. Rarer plants will be scored more highly as will higher abundance of these rarer species. Target scores will be set for different time intervals, e.g. a score of 15 will be targeted for Year 2, and 25 in Year 4.

5.11.31 Monitoring will be carried out by competent botanists.

5.12 Grassland habitat creation and management - marshy grassland (Purple Moor-grass and rush pastures)

Introduction

5.12.1 Marshy grassland or to be more specific the category of grassland termed “Purple moor grass and rush pastures” is a distinctive grassland type of damp pasture which is generally found as a component of lowland fen and in undeveloped corners of otherwise intensively farmland. Purple moor grass and rush pastures is a Biodiversity Action Plan habitat in the UK occurring on poorly drained neutral and acidic soils of the lowlands and upland fringe.

Objectives

5.12.2 The overall objective is to establish pockets and strips of marshy grassland along the ditches and rivers within the Scheme with the latter creating the hydrology for damp grassland. The objectives would include establishing a flora of dominated by a variety of grasses with rushes, sedges and broad-leaved herbs, underneath which there may be extensive patches of mosses and liverworts. The marshy grassland would include tall vegetation usually close to the watercourse and dominated by large tussocks of grass or tall rushes, or fairly short and even, often with an abundance of small sedges amongst the grasses.

5.12.3 Establishing such a grassland will encourage lowland farmland birds such warblers and Reed Bunting in the tall vegetation and Lapwing and Snipe in the shorter grassland. Common Frog is the most likely amphibians to be seen in marshy pastures and Grass Snake will take advantage of the range of sunny and shady

conditions provided by the tussocks for basking and seeking their prey, which includes frogs and small mammals.

Design Principles

5.12.4 Three key factors underpin the creation of marshy grassland:

a. acidic or calcareous soils
b. low nutrient levels within the soil; and
c. a relatively high water table.

5.12.5 The Scheme provides areas of both acidic and calcareous soils and although soils are likely to have nutrient levels above the optimum levels, will decrease as fertiliser inputs will cease. Those watercourses flowing through the Scheme will bring water of unnaturally high levels of nutrients. The tall vegetation riparian to the watercourses will help to fix these nutrients thereby protecting the shorter species rich sward beyond.

5.12.6 The water table will increase in level as result of the solar farm not requiring such a severe drainage regime Indirectly, the change in hydrological regime including the cessation of crop irrigation, benefitting and part of the management of marshy grassland.

5.12.7 The marshy grassland will be based on:

a. sowing seed mixes (one for tall grassland riparian to the watercourse and one for the short grassland) of local provenance;
b. implementing a long-term management regime suitable for a given plot/field including soil and degree of wetting;
c. monitoring the marshy grassland to analyse changes in condition and structure to inform future management;
d. not applying any pesticides including insecticides and fungicides; and
e. not applying fertilisers and not using irrigation.

Enhancement

5.12.8 Once established, these patches and strips of marshy grassland provide habitat for a range of insects including This habitat is home to a varied invertebrate fauna, some found almost exclusively in this habitat including species of butterflies, beetles and day-flying moths. Given suitable habitat, a programme will be agreed with donor sites to provide insects to introduce into the solar farm to benefit from these marshy grasslands achieving significant biodiversity enhancement.

Establish maintenance and long-term management

5.12.9 Establishing and maintaining the biodiversity of marshy grassland depends on their careful management and the right level of grazing (neither too heavy nor too light). Light early summer grazing should aim to achieve a variable height, with the shorter patches usually no less than 5 cm, should be the aim. Some species of insect are particularly sensitive to sward structure and have more stringent requirements. In

order to ensure that animals kept for prolonged periods on marshy grassland gain weight and avoid losing condition (particularly in late summer), these plots/fields should be grazed in rotation with more productive grassland. Marshy grassland on acid soil may be y unsuitable for lactating ewes, because of the low mineral content of the forage.

Monitoring

5.12.10 Based on the objectives for marshy grassland, a monitoring regime will be established to ensure that the biodiversity is being optimised, to identify potential new ecological constraints and to track the development of the condition of the patches and strips of marshy grassland. If the objectives are not being achieved, then changes to the management regime will be required. There is a wide range of monitoring methods available, from simple measures of grassland height to quadrat surveys measuring the frequency and condition of key indicator plants. A detailed botanical monitoring plan will be developed, using these specific key indicators and key time intervals to track the progress of establishment.

5.12.11 The frequency of monitoring will be at least annual for the first four years, with subsequent surveys being dependent on the rate of establishment.

5.13 River and Riparian Habitats

5.13.1 Enhancements to the watercourses will consist of soft engineering techniques and improvements to the riparian corridor to improve channel diversity and biodiversity. These measures will be defined at detailed design stage, following grant of the DCO and prior to construction.

5.13.2 Reinstatement of watercourses and ditches after intrusive works (culverting or open trenching) will aim to provide an improved channel form with enhancement works to be carried out (where relevant and appropriate to do so) up to 10 m upstream and downstream of the open trench or culvert. The River Metric assessment of the BNG has assumed (“a best-case scenario”) that 10 m upstream and 10 m downstream of the works will be enhanced.

5.13.3 The following watercourses were identified for enhancement opportunities with the target of achieving a 10% net gain in the river metric. Where planting of vegetation is required, either within the channel or riparian zone, plants of local provenance should be used. Alternatively, vegetation may be allowed to develop naturally over time where adjacent habitats allow. Care will be taken to avoid transferring or introducing invasive non-native species.

5.13.4 The Kennett – Lee Brook (Lee Brook) (WFD water body ID: GB105033043020) flows north from Freckenham through Lee Farm until it joins the River Lark; 240 m of the river lies within the Order Limits, plus an additional 1,174 m2 of its riparian zone. At the southern end of the reach near Beck Road, substrate consisted of a gravel and sand bed with areas of fine silt deposits. At the northern end of the reach there was no perceived flow and a layer of floating macrophytes covering the whole width of the river. Substrate here consisted of silt and leaf litter. The river is bordered by arable fields for most of its length and its riparian zone consists mainly of grassy banks and short reaches of trees. An area of marshy reedbed is present towards the northern end of the reach. The Kennett – Lee Brook (Lee Brook) is assigned as

having major watercourse encroachment, due to the presence of a weir directly upstream of the bridge at Beck Road. Based on the MoRPh survey, the river is considered to be in “Moderate” condition. The section of the Kennett – Lee Brook (Lee Brook) within the Order Limits is a Priority River habitat and is mentioned within the Chalk Stream Restoration Strategy.

5.13.5 The tributary to the River Lark (Ditch 02) runs parallel to the Kennett – Lee Brook (Lee Brook) and is bordered by arable fields and marshy grassland. At the time of survey, the water was clear, heavily shaded by bankside vegetation and the bed was dominated by leaf litter and silt. The ditch has steep banks, likely due to historic dredging, with un-managed bank tops. No non-native plant species were recorded in the reach surveyed. The tributary fits the definition of a ditch and is therefore not a Priority River habitat and is not mentioned in the Local Plan, River Basin Management Plan or Catchment Plans.

Impacted ditches

5.13.6 A total of 366 m of the tributary ditch of the River Lark (E01-E02) will be retained in its current condition. An enhancement length of 20 m is proposed to offset the loss of habitat from the creation of a new culvert or clear span bridge.

5.13.7 A total of 76 m of the tributary ditch of the River Snail (W7) will be retained in its current condition. An enhancement length of 20 m (10 m both upstream and downstream of the works) is proposed to offset any minor impacts from the intrusive crossing proposed by the cable corridor.

5.13.8 A total of 46 m of the tributary of the New River (W13) will be retained in its current condition. An enhancement length of 20 m (10 m both upstream and downstream of the works) is proposed for this tributary to offset any minor impacts from the intrusive crossing proposed by the cable corridor.

5.14 Retained existing grassland

5.14.1 The management of existing grassland that will be retained within the Scheme will be based on either sheep grazing and, or mowing depending on the location and objectives given for the individual plot or site and type of grassland. Reference should also be made to section 5.15 of this document which set out details for designated sites within the Order limits and contain the majority of retained grasslands. Many of the existing grassland areas will also be incorporated into the overall management prescriptions set out for the grassland creation areas set out in section 5.11 The grazing of these plots/fields will be included in the sheep grazing programme developed in the LEMP(s).

5.14.2 The grazing and mowing regimes will consider the productivity of a given plot/field and its management in the recent past and the programme will include criteria for decisions on whether or not, for example, to remove cuttings, criteria which will change as the swards and soils change. An overall objective will be to reduce nutrient levels by using mowing and collection and removal of cuttings to assist in achieving this end.

5.14.3 Grassland management will also seek to accommodate certain insect and invertebrate biodiversity more generally, e.g. a mosaic of plant heights to encourage

insects and for particular farmland birds. Where cut grass is removed from the grassland area, it will be taken to a composting location located nearby to avoid the need for material to be moved long distances. Composting points can be sited to provide nesting and habitat for hibernating reptiles.

5.14.4 In some instances, e.g. where the management of a plot/field of grassland has been managed in a way inimical to a biodiverse flora, there may be a need to undertake seeding or re-seeding in order to enable the plot/field to achieve its full biodiversity potential. Such measures would only be used after the grassland has had chance to respond to nutrient depletion and optimal grazing and, or mowing regimes.

5.14.5 Indirectly, the change in hydrological regime, e.g. no crop irrigation, will benefit and be part of the management of marshy grassland.

5.15 Biodiversity features

County Wildlife Sites

Introduction

5.15.1 The following County Wildlife Sites (CWS) are present within the Order limits:

a. Worlington Heath CWS;
b. Badlingham Lane CWS; and
c. Havacre Meadows and Deal Nook CWS.

5.15.2 In addition, there are a number of CWSs present adjacent to, but not within, the Order limits. Appropriate measures are in place to secure protection of these sites, where necessary, during construction (refer to Framework CEMP), operation (refer to Framework OEMP) and decommissioning (refer to Framework DEMP).

5.15.3 Of the three CWSs within the Order limits, Havacre Meadows and Deal Nook CWS is located within the grid connection corridor between Sunnica East Site B and West Site A. Non-intrusive measures will be used to lay the cable underneath the CWS, along with appropriate setbacks and pollution control measures during construction. These are secured in the Framework CEMP. No further management measures are required during operation and Havacre Meadows and Deal Nook CWS will return to and remain under the control of current landowners.

5.15.4 Worlington Heath CWS and Badlingham Lane CWS will be retained within the Order limits during operation of the Scheme and will be included within the wider management of the Scheme. Measures to protect the CWSs are secured in the Framework CEMP. The following sections outline the proposed management plans for Worlington Heath and Badlingham Lane CWSs. These will be further developed post consent, following detailed design and in conjunction with the Ecology Advisory Group. The detailed management of these sites will be set in the detailed LEMP for that location.

Worlington Heath CWS

Introduction

5.15.5 Worlington Heath CWS has freely draining slightly acid sandy soils and contains:

a. lowland dry acid grassland and lowland heathland (a Priority Habitat) that has had historical records of Marsh Stitchwort (Stellaria palustris) (a Priority Species included within Suffolk's Rare Plant Register)

b. wet hollows, the remnants of seasonal ponds as shown to be present on the OS within the site, which support Bog Pimpernel (Anagallis tenella) and Marsh Speedwell (Veronica scutellata) (locally scarce and included within Suffolk's Rare Plant Register) (at the time of survey (2019 and 2020) these were dry and not present); and

c. small pockets of scrub and mature hedge (a Priority Habitat).

Objectives

5.15.6 The objectives for Worlington Heath CWS are to:

a. ensure that there will be no direct impacts during construction including fragmentation of habitats, or of populations of species using habitats during construction and no incursion into this designated site and no indirect effects such as pollutant spills and dust deposition

b. establish a management regime to sustain and enhance the biodiversity value of Worlington Heath CWS with particular reference to the features for which it is designated a CWS.

Management

5.15.7 There are three parts to the management of Worlington Heath CWS: minimising direct effects of the Scheme on the CWS, minimising indirect effects and management post-construction.

Direct effects

5.15.8 There will be no fragmentation of habitats, or of populations of species using habitats during construction and no incursion into this designated site during construction as secured through the CEMP. This includes the establishment of security fencing and a buffer zone early on in the construction process. The boundary hedgerows and grassy margins will be retained, which will allow for connectivity within and across the Order limits.

Indirect effects

5.15.9 During construction, there is potential for pollutant spills and dust deposition onto Worlington Heath CWS, which have the potential to adversely affect habitats associated with the CWS and, consequently, species associated with them. Unmitigated, these indirect effects might adversely affect the integrity of the CWS. The unmitigated impact, while short term during the period of construction, could result in medium term effects to important ecological features within this designated

site. Standard environmental protection measures will be implemented during construction, formalised through the CEMP and these measures will include:

a. siting construction routes away from Worlington Heath CWS;
b. fencing to prevent construction activity in proximity to CWS whilst including gaps to allow mammals to pass underneath at strategic locations;
c. establishing buffer zones between Worlington Heath CWS and the construction area;
d. dust suppression; and
e. pollution prevention.

5.15.10 These measures will be embedded into the Scheme through the CEMP. Consequently, there are no pathways, either directly or indirectly, that would impact upon the integrity or functioning of Worlington Heath CWS.

5.15.11 With respect to operation of the Scheme, there are no pathways, e.g. habitat loss or disturbance to site features such as through noise, air quality, water quality, lighting or visual, that will adversely affect Worlington Heath CWS during the operation of the Scheme.

Post-construction management

5.15.12 The post-construction management for Worlington Heath CWS focuses on the key habitats of lowland dry grassland and heathland for which it designated a CWS. This will initially be targeted at assessing the status of scrub across the CWS and, despite its classification as a Priority Habitat, it is likely that some or all of this may need to be removed. A detailed survey of the vegetation will be undertaken pre-construction, the results of the latter would inform a grassland and heathland management plan which would be integrated into the regime implemented for other areas of lowland dry grassland in the Scheme.

5.15.13 Given the indications that the wet hollows are becoming dried out and dominated by terrestrial plants, the feasibility of opening up these hollows to return them to seasonal ponds should be explored

5.15.14 The management of the hedgerows on the CWS boundary will be undertaken as in Section 5.4.11 to 5.4.13 in this document.

E*nhancements*

5.15.15 Biodiversity enhancement would be achieved through the management of the CWS and in particular the grazing regime to enable the grassland and heathland to achieve a more favourable condition, developing into good condition within the life of the Scheme.

Monitoring

5.15.16 The vegetation of Worlington Heath CWS including plant species composition and distribution should be undertaken pre-construction to provide the basis for detailed management planning. This baseline will form the basis of surveillance undertaken

every second year for the first 10 years and subsequently as recommended by the Ecology Advisory Group.

Badlingham Lane CWS

Introduction

5.15.17 Part of the historic Icknield Way and a valuable local amenity, popular with walkers, riders and cyclists, Badlingham Lane CWS has freely draining slightly acid sandy soils and contains:

a. verges supporting species-rich flora characteristic of lowland dry acid grassland including:
b. Sainfoin (Onobrychis viciifolia) which is listed as near threatened within Suffolk's Rare Plant Register;
c. a plant species composition of Great Brome (Anisantha diandra), Thyme-leaved Sandwort (Arenaria serpyllifolia), Soft Brome (Bromus hordeaceus), Ribwort Plantain (Plantago lanceolata), Lady's Bedstraw (Galium verum), Common Couch (Elymus repens) and White Campion (Silene latifolia), which, with bare ground cover of 10 to 30%, has an affinity to the National Vegetation Classification (NVC) community type SD10 Carex arenaria dune community; and
d. a small population of Sand Catchfly (Silene conica), a plant listed in the Red Data Book and as nationally scarce within Suffolk's Rare Plant Register;
e. a patch of lowland calcareous grassland;
f. mature trees
g. wide hedgerows with a value for foraging and roosting bats; and
h. part of a short grassland strip with abundant Sand Sedge (Carex arenaria).

5.15.18 There is no obvious management being undertaken of Badlingham Lane CWS, apart from some low intensity deer browsing. There is potential for future shading from planted trees.

Objectives

5.15.19 The objectives for Badlingham Lane CWS are to:

a. ensure that there will be no direct impacts during construction including fragmentation of habitats, or of populations of species using habitats during construction and no incursion into this designated site and no indirect effects such as pollutant spills and dust deposition
b. establish a management regime to sustain and enhance the biodiversity value of Badlingham Lane CWS with particular reference to the features for which it is designated a CWS.

Management

5.15.20 There are three parts to the management of Badlingham Lane CWS: minimising direct effects of the Scheme on the CWS, minimising indirect effects and management post-construction.

5.15.21 Badlingham Lane will be retained as part of the Scheme design and will remain undeveloped as secured through the limits of deviation shown on the Works Plan. The construction of the Scheme will not directly impact on habitat within this designated site and measures to ensure that there is no incursion into this designated site during construction will be secured through the CEMP. This includes the establishment of security fencing and a buffer zone early on in the construction process.

5.15.22 There will be no fragmentation of habitats, or of populations of species using habitats during construction. Boundary vegetation such as hedgerows and grassy margins will be retained, which will allow for connectivity across the Order limits.

Indirect effects

5.15.23 During construction, there is potential for pollutant spills and dust deposition onto Badlingham Lane CWS, which have the potential to adversely affect habitats associated with the CWS and, consequently, species associated with them. Unmitigated, these indirect effects might adversely affect the integrity of Badlingham Lane CWS. The unmitigated impact while short term during the period of construction would result in medium term effects to important ecological features within this designated site. Standard environmental protection measures will be implemented during construction, formalised through the CEMP and these measures will include:

a. siting construction routes away from Badlingham Lane CWS;
b. fencing to prevent construction activity in proximity to CWS whilst including gaps to allow mammals to pass underneath at strategic locations;
c. tree protection measures including fencing and construction exclusion zones;
d. establishing buffer zones between Badlingham CWS and the construction area;
e. dust suppression; and
f. pollution prevention.

5.15.24 These measures will be embedded into the Scheme through the CEMP. Consequently, there are no pathways, either directly or indirectly, that would impact upon the integrity or functioning of Badlingham Lane CWS.

5.15.25 With respect to operation of the Scheme, there are no pathways, e.g. habitat loss or disturbance to site features such as through noise, air quality, water quality, lighting or visual, that will adversely affect Badlingham Lane CWS during the operation of the Scheme.

Post-construction management

5.15.26 The post-construction management for Badlingham Lane CWS centres on verge management to sustain species-rich flora characteristic of lowland dry acid grassland including the NVC community type SD10 Carex arenaria dune community, Sand Catchfly and the patch of lowland calcareous grassland. The verges will be maintained in order to keep an open vegetation and preventing vegetation succession. This will comprise:

a. monitoring of the sward during the growing season to determine grazing pressure by wild mammals, such as rabbits. If present, rabbit grazing will also generate periodic small-scale disturbance of the soil which benefits species such as Sand Catchfly, but if rabbits are not present, small-scale disturbance will need to be mimicked as for the arable flora strips (see Section 5.12.57 in this document); and

b. cutting or pruning back shrubs and trees to prevent shading of the verges integrated into hedgerow and tree management (see Section 5.4.11 in this document),

5.15.27 The mature trees and hedgerows within the CWS boundary will be undertaken as in Sections 5.4.11 and 5.5.12 in this document.

Enhancements

5.15.28 Biodiversity enhancement would be achieved through the management of the verges of the CWS and in particular the grazing regime to achieve a more favourable condition, developing into good condition within the life of the Scheme.

Monitoring

5.15.29 The vegetation of Badlingham Lane CWS including plant species composition and distribution should be undertaken pre-construction to provide the basis for detailed management planning. This baseline will form the basis of surveillance undertaken every second year for the first 10 years and subsequently as recommended by the Ecology Advisory Group.

Stone Curlew Offsetting Areas

Introduction

5.15.30 The text presented in this section makes reference to the measures outlined in the Offsetting Habitat Provision for Stone-curlew Specification and has been provided as an Annex F to this Outline LEMP.

Nesting Plots

5.15.31 A minimum of ten 2ha plots will be created across Sunnica East Sites A and B, in fields where Stone-curlew have been recorded during surveys. To maximise the potential for take up two plots have been allocated per pair. Plots unoccupied for nesting will contribute an important resource for foraging pairs. Three are proposed in ECO1, three in ECO2, and four across ECO3. Details of plot creation and management in the Brecks are provided by the RSPB information Note ‘Managing nest plots for stone-curlews’, with further requirements set out in the Countryside Stewardship Higher Tier ‘AB4: Nesting plots for Stone-curlew’ guidance note and the work undertaken by Hawkes et al. (2021). Plots will be a minimum of 100m apart. Various cultivation techniques will used to create a rough tilth and/or areas of bare ground, depending on ground conditions and other environmental factors or constraints. The new plots will be provided in advance of the loss of any existing habitat. This will mean that the new plots will be to be available in the breeding season prior to construction commencing.

Foraging Habitat

5.15.32 Recent research has shown that the creation of bare ground provides an important foraging resource for breeding Stone-curlew, particularly if this is located near to the nesting site; most foraging by Stone-curlew occurs within 1km of the nest. As well as providing suitable nesting opportunities, the plots, delivered in advance of the loss of any existing habitat and located within areas shown by surveys to be used by Stone-curlew, will also deliver important foraging areas in close proximity to the nest site (approximately 100m).

5.15.33 As well as the bare ground plots, approximately 108ha of predominantly arable farmland have been embedded within the Scheme for reversion to grassland, specifically managed to create a close-cropped sward, suitable for Stone-curlew. Small areas of existing acid grassland have also been retained within the Scheme design in Sunnica East Site B and these will form the basis of reverting adjacent areas in Sunnica East Site B to semi-natural grassland, characteristic of the Breckland heaths. In time this will provide a high quality habitat, offering both nesting and foraging opportunities for Stone-curlew. The disturbed plots will be retained within these established grassland areas for the lifespan of the project and remain undeveloped. The areas containing these plots are shown on the Environmental Masterplans.

5.15.34 Within Sunnica East Site A the offsetting area (ECO1 and ECO2) will be sown with a grassland mix (with calcareous species) and managed specifically for Stone-curlew, i.e. maintaining a close-cropped sward. The plots will be retained within these established grassland areas for the lifespan of the project.

Establishment and Management of Plots and Grassland in ECO1

5.15.35 Tables 4 and 5 provide a summary of the nesting plot and grassland creation and management within ECO1. In total ECO1 amounts to 40.1 ha of land allocated for Stone-curlew. This consists of 6 ha of bare ground/short sward (i.e., nesting plots) and 34.1 ha of grassland (sward height <5cm).

Table 4: Summary of Nesting Plot Management in ECO1

Number of Nesting Plots	Management Objective	Creation Technique	Management Technique
3	Bare ground 2 ha plot with sward height not exceeding 2cm between March and September (no scarification).	Retention of bare ground/short sward through annual removal of ruderal plants.	Non-selective herbicide spray in May. Retention of fallow through autumn and winter.

Table 5: Summary of Grassland Management in ECO1

Grassland Type[1] and Size (ha)	Management Objective	Creation Technique	Management Technique
Other Neutral Grassland (with calcareous influence) (34.1ha)	Sward height <5cm	Arable reversion. Uncultivated by landowner prior to handover, then lightly harrowed and sown with appropriate seed mix.	Years 0-5. Mown 2-4 times during growing season, with a single autumn cut (mowing to be determined by presence of Stone-curlew and other ground-nesting bird species). Targeted weeding where necessary. Years 5+. Low intensity grazing by sheep.

5.15.36 Within ECO 1 the Scheme would replicate uncultivated field conditions within the plots to constitute 'bare-earth'. This would be managed through visual inspection and manual removal of aggressive weeds, to keep the sward and vegetative growth on the plots very short on an annual basis.

5.15.37 To create the grassland outside the plots, the surface would receive a light harrowing (75mm) followed by sowing of the seeds across the existing surface. It is anticipated that commercially available seed will be required, and this will be sourced well ahead of construction. A typical seed mix appropriate for the freely draining lime-rich loamy soils present in ECO1 would be Emorgate's EM5 - Meadow Mixture for Loamy Soils. This would have a slightly calcareous influence and the overall outcome of grassland for Stone-curlew would be more reminiscent of conditions present in the species' south and south-west range in the UK, i.e., Wessex.

5.15.38 The short-term management (0-5 years) would involve the following:

a. Visual inspections during the growing season.
b. Looking for establishment rates and whether certain species are at risk of out-competing the grassland.
c. Grassland mown between two and four times at even intervals throughout the growing season to control the more competitive species and allow the newly sown less competitive species to establish.
d. Grassland cut in autumn (once grassland has set seed) with cut grass left in situ for 24hrs.
e. Cut vegetation will be removed from the grassland area (in combination with a litter pick).
f. Targeted weeding (including no residual herbicide) if invasive species.

[1] Grassland types follow the classification used in the UK Habitats definitions.

5.15.39 The long-term management (5+ years) will involve low intensity conservation grazing once the grassland has established (if grazing can be introduced before year 5 than this will be explored). The sheep grazing programme will be established pre-construction with an element of flexibility built in to accommodate differential rates of establishment and, where necessary, complement mowing. An example of a grazing regime would be through low intensity pulse grazing using sheep with a stocking density of between 0.5-1 livestock units per hectare:

a. January-February: Light grazing on any new growth
b. Early March: Remove grazing to allow plants to grow and create good habitat for ground nesting birds
c. September - end of December: Main grazing period with light grazing down to a short sward height.

5.15.40 Water troughs for animals will be provided in locations away from sensitive archaeological remains.

Establishment and Management of Plots and Grassland in ECO2

5.15.41 Tables 6 and 7 provide a summary of the nesting plot and grassland creation and management within ECO2. In total ECO2 amounts to 34.2 ha of land allocated for Stone-curlew. This consists of 6 ha of disturbed and bare ground/short sward (i.e., nesting plots) and 28.2 ha of grassland (sward height <5cm).

Table 6: Summary of Nesting Plot Management in ECO2

Number of Nesting Plots	Management Objective	Creation Technique	Management Technique
3	Bare ground 2 ha plot with sward height not exceeding 2cm between March and September.	Annual mechanical rotovation prior to 15th March.	Non-selective herbicide spray in May. Retention of fallow through autumn and winter.

Table 7: Summary of Grassland Management in ECO2

Existing Habitat Type and Size (ha)	Grassland Type and Size (ha)	Management Objective	Creation Technique	Management Technique
Arable (28.2ha)	Other Neutral Grassland (with calcareous influence) (28.2ha)	Sward height <5cm	Arable reversion. Uncultivated by landowner prior to handover, then lightly harrowed and sown with appropriate seed mix.	Years 0-5. Mown 2-4 times during growing season, with a single autumn cut (mowing to be determined by presence of Stone-curlew and other ground-nesting bird species). Targeted weeding where necessary.

Existing Habitat Type and Size (ha)	Grassland Type and Size (ha)	Management Objective	Creation Technique	Management Technique
				Years 5+. Low intensity grazing by sheep.

5.15.42 Within ECO 2 the creation of plots will follow the details of plot creation and management provided by the RSPB information Note 'Managing nest plots for stone-curlews', with further requirements set out in the Countryside Stewardship Higher Tier 'AB4: Nesting plots for Stone-curlew' guidance note.

5.15.43 Various cultivation techniques can be used to create a rough tilth. The best results for Stone-curlew are achieved by using a spring tine cultivator, discs, cultivator with a press (not a pack roller or flexi-coil) or a plough with press. Where plot locations are already bare, cultivation may not be necessary, but weeds should be controlled with herbicide so that the plot remains bare until April.

5.15.44 The following cultivation programme would be required:

a. By 15th March (prior to construction), prepare the whole 2ha plot by discing/ light cultivation, ideally in February. This creates a rough bare fallow that provides suitable conditions for the first Stone-curlew nesting attempt.

b. During May, spray the whole plot using a non-selective herbicide ideally when the vegetation is no more than a few centimetres tall. This will create bare ground rather than a mat of dead vegetation. Spraying reduces the risk associated with intrusive management (such as through mowing) to a level that will not impact the population of Stone-curlew. The only danger to Stone-curlew nests/chicks from spraying, is from tractor wheels. If the nest location is known, it may be possible to reduce this risk by avoiding the area around the nest and/or by spraying only half of the plot.

c. Retain the fallow through the autumn/winter (at least until 30th September). Stone-curlew can nest late into the year so the fallow must be left until the end of September. If left through winter, it will provide a vital source of seeds for farmland birds.

5.15.45 To create the grassland outside the plots, the surface would receive a light harrowing followed by sowing of the seeds across the existing surface. It is anticipated that commercially available seed will be required, and this will be sourced well ahead of construction. A typical seed mix appropriate for the freely draining lime-rich loamy soils present in ECO1 would be Emorgate's EM5 - Meadow Mixture for Loamy Soils. This would have a slightly calcareous influence and the overall outcome of grassland for Stone-curlew would be more reminiscent of conditions present in the species' south and south-west range in the UK, i.e., Wessex.

5.15.46 The short-term management (0-5 years) would involve the following:

a. Visual inspections during the growing season.

b. Looking for establishment rates and whether certain species are at risk of out-competing the grassland.

c. Grassland mown between two and four times at even intervals throughout the growing season to control the more competitive species and allow the newly sown less competitive species to establish.

d. Grassland cut in autumn (once grassland has set seed) with cut grass left in situ for 24hrs.

e. Cut vegetation will be removed from the grassland area (in combination with a litter pick).

f. Targeted weeding (including no residual herbicide) if invasive species.

5.15.47 The long-term management (5+ years) will involve low intensity conservation grazing once the grassland has established (if grazing can be introduced before year 5 than this will be explored). The sheep grazing programme will be established pre-construction with an element of flexibility built in to accommodate differential rates of establishment and, where necessary, complement mowing. An example of a grazing regime would be through low intensity pulse grazing using sheep with a stocking density of between 0.5-1 livestock units per hectare:

a. January-February: Light grazing on any new growth

b. Early March: Remove grazing to allow plants to grow and create good habitat for ground nesting birds

c. September - end of December: Main grazing period with light grazing down to a short sward height.

5.15.48 Water troughs for animals will be provided in locations away from sensitive archaeological remains.

Establishment and Management of Plots and Grassland in ECO3

5.15.49 Tables 8 and 9 provide a summary of the nesting plot and grassland creation and management within ECO3. In total ECO3 amounts to 51.4 ha. This consists of a core Stone-curlew area of 32.7 ha and additional area of 18.7 ha, which encompasses existing unimproved acid grassland within Worlington Heath County Wildlife Site (CWS) and immediately to the south of the CWS and semi-improved acid grassland and arable farmland to the east of the CWS. Within the core Stone-curlew area there will be 8 ha of disturbed and bare ground/short sward (i.e., nesting plots) and 24.7 ha of grassland (sward height <5cm).

Table 8: Summary of Nesting Plot Management in ECO3

Number of Nesting Plots	Management Objective	Creation Technique	Management Technique
4	Bare ground 2 ha plot with sward height not exceeding 2cm between March and September.	Annual mechanical rotovation of 50% of plot (1 ha) prior to 15th March.	Non-selective herbicide spray in May. Retention of fallow through autumn and winter.

Table 9: Summary of Grassland Management in ECO3

Existing Habitat Type and Size (ha)	Target Grassland Type[2] and Size (ha)	Management Objective	Creation Technique	Management Technique
Arable/Bare ground (Core Stone-curlew Area) (20ha)	Lowland dry acid grassland (20ha)	Maintain a sward height not exceeding 5cm.	Arable reversion. Skim off the existing uncultivated topsoil to reduce phosphate. Lightly harrow and sow with a combination of appropriate commercial seed mix, locally harvested seed and green hay.	Years 0-5. Mown 2-4 times during growing season, with a single autumn cut (mowing to be determined by presence of Stone-curlew and other ground-nesting bird species). Targeted weeding where necessary. Years 5+. Low intensity grazing by sheep.
Other lowland dry acid grassland (Semi-improved grassland and semi-improved acid grassland) (Core Stone-curlew Area) (12.7ha)	Lowland dry acid grassland (12.7ha)	Maintain a sward height not exceeding 5cm.	N/A	Years 0-5. Mown 2-4 times during growing season, with a single autumn cut (mowing to be determined by presence of Stone-curlew and other ground-nesting bird species). Targeted weeding where necessary. Years 5+. Low intensity grazing by sheep.
Additional areas in ECO3 (non-core areas), including, Lowland dry acid grassland (Unimproved acid grassland) (18.7ha)	Lowland dry acid grassland	Worlington Heath CWS – as per CWS prescriptions in the OLEMP. Existing habitats as per prescriptions in OLEMP.	N/A	Refer to prescriptions in OLEMP.

5.15.50 Within ECO 3 the creation of plots will follow the details of plot creation and management provided by the RSPB information Note 'Managing nest plots for

[2] Grassland types follow the classification used in the UK Habitats definitions.

stone-curlews', with further requirements set out in the Countryside Stewardship Higher Tier 'AB4: Nesting plots for Stone-curlew' guidance note.

5.15.51 The plot locations will remain fixed, as Stone-curlew have been shown to re-use plots when made available in consecutive years.

5.15.52 Various cultivation techniques can be used to create a rough tilth. The best results for Stone-curlew are achieved by using a spring tine cultivator, discs, cultivator with a press (not a pack roller or flexi-coil) or a plough with press. Where plot locations are already bare, cultivation may not be necessary, but weeds should be controlled with herbicide so that the plot remains bare until April.

5.15.53 The following cultivation programme will be used:

a. By 15th March (prior to construction), prepare the whole 2ha plot by discing/ light cultivation, ideally in February. This creates a rough bare fallow that provides suitable conditions for the first Stone-curlew nesting attempt.

b. During May, spray one half (1 ha) of the plot using a non-selective herbicide ideally when the vegetation is no more than a few centimetres tall. This will create bare ground rather than a mat of dead vegetation. Spraying reduces the risk associated with intrusive management (such as through mowing) to a level that will not impact the population of Stone-curlew. The only danger from spraying, to Stone-curlew nests/chicks, is from tractor wheels. By only spraying half the plot this risk is further reduced, providing cover for chicks, as well as allowing important flora, *e.g.,* arable plants to grow.

c. Retain the fallow through the autumn/winter (at least until 30th September). Stone-curlew can nest late into the year so the fallow must be left until the end of September. If left through winter, it will provide a vital source of seeds for farmland birds.

5.15.54 Where arable farmland is to be reverted to semi-natural grasslands, the preferred option for achieving this is by skimming off the existing ploughed topsoil which effectively reduces phosphate availability. Alternatively, options to reduce phosphate levels can include a continuation of cropping for a number of years, but without additional nutrients being added. Once ready, the soil will be subject to light harrowing to prepare for the sowing of the seeds. Whilst, natural regeneration and colonisation of the existing seedbank may be desirable, this may take many years to establish. To achieve quicker ground coverage and establishment of the desired grassland, seeding is likely to be the most appropriate approach. Seed will come from three main sources:

a. commercially available seed sources, identified well ahead of construction;

b. seed harvested from either external sites in East Anglia, for some species preferably from Breckland and, or the Breckland edge, but also incorporating seed harvested from existing grasslands in ECO3; and

c. green hay, again, either from external sites in East Anglia, for some species preferably from Breckland and, or the Breckland edge, but also incorporating arisings from existing grasslands in ECO3.

5.15.55 The short-term management (0-5 years) would involve the following:

a. Visual inspections during the growing season.
b. Looking for establishment rates and whether certain species are at risk of out-competing the grassland.
c. Grassland mown between two and four times at even intervals throughout the growing season to control the more competitive species and allow the newly sown less competitive species to establish.
d. Grassland cut in autumn (once grassland has set seed) with cut grass left in situ for 24hrs.
e. Cut vegetation will be removed from the grassland area (in combination with a litter pick).
f. Targeted weeding (including no residual herbicide) if invasive species.

5.15.56 The long-term management (5+ years) will involve low intensity conservation grazing once the grassland has established (if grazing can be introduced before year 5 than this will be explored). The sheep grazing programme will be established pre-construction with an element of flexibility built in to accommodate differential rates of establishment and, where necessary, complement mowing. An example of a grazing regime would be through low intensity pulse grazing using sheep with a stocking density of between 0.5-1 livestock units per hectare:

a. January-February: Light grazing on any new growth
b. Early March: Remove grazing to allow plants to grow and create good habitat for ground nesting birds
c. September - end of December: Main grazing period with light grazing down to a short sward height.

Arable Flora Plots

Introduction

5.15.57 Areas throughout the Scheme where notable arable flora has been recorded will be subject to the provision of disturbed field margin strips to provide suitable conditions for annual species. Parts of the Order limits will continue to be cultivated to allow rare arable plants to persist within the Scheme following the cessation of arable farming.

Objectives

5.15.58 The objectives of the arable flora plots are to provide the long-term continuity of arable flora within the Order limits. The arable flora assemblage should consist of species representative of the landscape types and broadly contain a similar range of species as recorded during baseline surveys.

Design Principles and Management

5.15.59 The following areas within the Order limits, where notable species were recorded, will be managed for arable plants:

a. Sunnica East Site B: 3m wide strips in field E30 and in field E17/18

b. Sunnica West Site A: 3m wide strips in field W09.

5.15.60 For all arable plant areas there will be no routine application of herbicides, but where a pernicious weed burden becomes an issue, targeted herbicide application and or hand pulling will be necessary. No seed or crop will be added to these areas, to encourage the existing seed bank to germinate, grow and re-seed. The management will be in accordance with that described within Natural England Entry Level Stewardship Option EF11. The strips will be cultivated in either spring (February-March) or autumn (September-November) each year for the lifetime of the Scheme, to a depth of 150mm to establish a firm, fine tilth. This will then be left undisturbed to naturally regenerate. The cultivation depth can be adjusted to control germination of problematic weeds. The disturbed strips located in Sunnica East Site B will also benefit specialist terrestrial invertebrate species which require disturbed bare ground. These strips will be disturbed using disc harrowing to a depth of between 80-180cm. Disc-harrowing will occur in February with the vegetation left to naturally regenerate within the strips.

Monitoring

5.15.61 Annual monitoring of arable flora plots will be undertaken to establish the range of species occurring.

Farmland Birds

Introduction

5.15.62 The surveys for breeding and non-breeding birds, undertaken to support the assessment presented in the ES and presented in **Appendix 8I: Report on Surveys for Breeding Birds** of the Environmental Statement **[APP-085]** and **Appendix 8H: Wintering Bird Survey Report** of the Environmental Statement **[APP-084]**, identified that the Site supports a wide variety of declining farmland bird species. To mitigate for the loss of arable farmland, which supports ground-nesting species such as Skylark, Lapwing and Yellow Wagtail, as well as enhance existing retained features, such as hedgerows and field margins, a package of measures has been embedded into the Scheme design to benefit farmland birds. These will be finalised post consent and detailed in the final version of the LEMP, approved by the relevant LPAs.

5.15.63 In addition, measures proposed for farmland birds and Stone-curlew will also benefit other notable species, such as Quail and Little Ringed Plover.

Objectives

5.15.64 The objectives of measures for farmland birds are to retain the existing species assemblage, whilst increasing the abundance of species populations. This will be achieved through the measures identified in Table 10.

Design Principles and Management

Table 10: Farmland Birds Habitat Prescriptions

Habitat	Prescription	Management Options	Species Benefit
Hedgerows	Plant up gaps in hedgerows with native species, including thorny species, such as Blackthorn and Hawthorn, that provide nesting cover. Allow hedgerows to grow thick and bases to become dense and tussocky, to provide nesting sites and promote invertebrate diversity during the chick rearing period. Integrate hedgerow enhancement with provision of wild-flower rich field margins, to create a mosaic of habitats providing nesting and foraging habitat.	Trimming should only be undertaken between October and February and any hedgerow management should be undertaken on a rotational basis, to allow adequate cover and berry resource across the Site for non-breeding farmland bird species.	Grey Partridge, Linnet, Corn Bunting, Yellowhammer, Reed Bunting.
Seed-rich set-aside areas.	Retain and extend existing areas of set-aside, ensuring that annual growth includes a wide variety of seed-rich species. Re-seed, where necessary.	Leave fallow over autumn and winter to provide a seed resource for non-breeding farmland birds. Management prescriptions can follow Natural England Entry Level Stewardship Option EF2, with the aim of maximising the production of small seeds suitable as bird food in either annual or annual/biennial mixtures	Grey Partridge, Turtle Dove, Linnet, Corn Bunting, Skylark, Reed Bunting, Yellowhammer.
Field margins	Undeveloped margins between panelled areas and hedgerows. Included species such as Cocksfoot, in the seed mix to create tussocks.	After the margins are established, cut only in the autumn once every three years. Avoid cutting all margins in the same year. Graze or cut in September every two to three years.	Grey Partridge, Linnet
Scrub planting / natural regeneration	Thick thorny scrub cover, e.g., gorse or bramble. Allow bases of scrub and natural regeneration areas to grow thick and tussocky.	Allow areas of scrub and natural regeneration to slowly establish with minimal intervention, providing a mosaic of successional habitats.	Linnet, Turtle Dove, Nightingale.
Open grassland	Maintain a mosaic of sward heights, with suitably diverse native wildflower seed mix, including grass species that create abundant tussocks.	Low intensity grazing from late summer/early autumn.	Skylark, Lapwing, Yellow Wagtail.

Grassland Translocation

Introduction

5.15.65 An area of grassland in E13 at the apex of the parcel field, an area of lowland acid grassland on freely draining slightly acid sandy soils will be used for erecting solar panel. This patch of grassland will be translocated into ECO3.

Objectives

5.15.66 The objectives of the translocation are:

a. translocation of a patch of grassland from E13 to ECO3; and
b. integrating the management of this grassland into that of the grassland in ECO3.

Design Principles

5.15.67 The design of the grassland translocation will be governed by:

a. selecting soils of the right type onto which the turves removed from E13 can be laid;
b. augmenting the translocation by sowing seed mixes of local provenance and appropriate for the conditions in the field/parcel; and
c. implementing a long-term management regime suitable for the parcel/field, soil and grassland type, e.g. sheep grazing.

5.15.68 If pernicious weeds become a problem, then hand pulling or spot treatment with a selective systemic herbicide should be undertaken prior to the weeds setting seed and becoming dominant.

5.15.69 The approach to translocating this patch of grassland will be developed with input and comment from the Ecology Advisory Group and and set out in the detailed LEMP for the relevant locations.

Enhancement

5.15.70 The translocation this area of grassland will support the creation of lowland acid grassland in ECO3, further enhancing its value in terms of plant species composition and diversity. This grassland will provide for a range of insects and other invertebrates including pollinators with benefit to surrounding agriculture and providing foraging for birds such as Stone-curlew, Skylark and Lapwing.

Establish maintenance and long-term management

5.15.71 This section outlines the key considerations for the translocation and establishment of the patch of dry lowland grassland in E13 to ECO3. A detailed plan for the translocation and establishment and management of this patch of grassland will be developed for a 4-5 year establishment and maintenance period.

5.15.72 Translocation will be undertaken using a turf lifting excavator attachment, each turf measuring approximately 1m by 2m.

5.15.73 The donor area in E13 will be reinstated as required.

5.15.74 Post-translocation, the maintenance of the grasslands will comprise;

a. undertaking watering of the translocated turves as necessary;
b. mowing the grass to 50mm length several times during the first spring following sowing and removing the cuttings with mowing continued for at least the first two years to assist in depleting the soil of nutrients;
c. arisings will be raked into piles and left in situ for seven days before collection and either use in making on-site compost piles for use by reptiles or removal to an off-site green waste composting facility;
d. remediation works and establishment of on-going management including deciding when to use grazing, its intensity and frequency to match grassland establishment and sward.

5.15.75 On-going management will be as for the remainder of ECO3 (see Table 9).

Monitoring

5.15.76 Based on the objectives for lowland acid grasslands across the Scheme, a detailed botanical monitoring plan will be developed, using specific indicators and key time intervals to track the progress of translocation and establishment. This will ensure that the translocated grassland has established effectively and to track its integration into the lowland acid grassland being established by seeding in ECO3. Feedback from the monitoring over the first two years will be used to determine if watering and or supplementary seeding is necessary. Monitoring for weed species will be essential, especially during the early stages of grassland establishment. Assuming an autumn sowing, the site should be monitored for weeds regularly during the following spring as the sward develops.

5.15.77 Monitoring after the first two years will be as for lowland acid grassland (see Section 5.11.6).

5.16 Other environmental features

Provision of wildlife boxes

5.16.1 A range of artificial bird and bat boxes will be installed in existing woodland areas to increase the availability of nesting and roosting features and enhance the value of the woodlands for these species' groups.

5.16.2 A total of 40 bird nest boxes and 30 bat roost boxes of varying types to suit different species of birds and bats will be installed within the retained woodland areas on suitable trees, in locations to be determined by an ecologist at the time of installation.

5.16.3 Bird and bat boxes made from long lasting materials (such as Woodcrete) will be used and would be expected to have a life expectancy of 20-25 years. However, the condition of all wildlife boxes installed would be monitored every five years during

the operation of the scheme and replacements will be made as necessary. Inspections can be timed to coincide with the required inspections of new tree and shrub plantings.

5.16.4 All wild birds, their active nests and eggs are protected under the Wildlife and Countryside Act (1981), as amended. This makes it an offence to deliberately, or recklessly kill or injure any wild bird or damage or destroy any active nest or eggs of a wild bird.

5.16.5 Therefore, annual cleaning of bird boxes cannot be undertaken between the months of March and August inclusive, when birds may be using the boxes. Therefore, bird boxes should be cleaned between October and February to prevent the build-up of nest parasites in the boxes whilst avoiding the risk of disturbing birds using the boxes as a roost site during the cold winter months.

5.16.6 Bat boxes will be inspected by an appropriately licensed bat surveyor for evidence of uptake, and any evidence of roosting bats will be recorded to assist with ongoing management of the woodland on site.

5.16.7 Bat boxes are, in most circumstances, unlikely to be used by hibernating bats during winter months (between November and February inclusive). Therefore, any maintenance that is required on bat boxes should be undertaken during these months, when bat droppings and any bird nests will be removed.

If bats are inadvertently discovered during maintenance, the person undertaking the maintenance should replace the box and leave site.

Creation of habitat piles

5.16.8 Habitat piles and hibernacula would be constructed throughout the Scheme areas using natural materials generated during clearance of the site, such as logs, turf and grass strimmings. These would provide refuge and hibernation opportunities for amphibians and reptiles, as well as dead wood habitat for invertebrates, which would in turn benefit fauna such as bats and birds.

Integration with existing public rights of way and local roads and creation of permissive paths

Introduction

5.16.9 The existing public rights of way (PRoW) network is shown in **Figure 10-4** of the Environmental Statement. The network is sparse, particularly in the southern part of the Scheme. The local road network is also used by people for recreation, both to access the PRoW network and in its own right as a recreational resource, and in moving between settlements and local services. It is acknowledged that the Scheme has the potential to affect the way that people perceive their local landscape through the journeys that they make, the places that they visit and their lived experience. These effects will be felt particularly during construction, the early years of operation and decommissioning, when activity will be highest and the planting provided as mitigation will not yet have established. The Scheme has been designed to as far as possible avoid impacts on users of the PRoW and local road network by using existing vegetation as visual screening and incorporating offsets from solar farm

development. It will also inform the provision of additional PRoW that local authorities bring forward through a s106 agreement associated with the Scheme, provided that the agreement completes. The Applicant has committed to monitoring and maintaining all vegetation within the Scheme boundaries, including existing vegetation, and re-planting vegetation which fails or dies during the lifetime of the Scheme.

5.16.10 Several PRoW which intersect the Scheme will be affected by construction, requiring short-term, temporary closures and diversions. Arrangement for pedestrians using PRoW will be described in Construction Traffic Management Plan. During construction, the contractor will endeavour to ensure that all Public Right of Way remain open and accessible at all times. Appropriate signage will be used to warn the public of the existence of construction vehicles and to warn construction vehicles to give priority to Public Right of Way users. These PRoW will be restored following completion of construction of each section of cable route.

5.16.11 Badlingham Road (U6006) is identified as an “other route with public access” on Ordnance Survey maps. It passes through the centre of Sunnica East Site B and is enclosed by dense trees and scrub on both sides through the section where solar panels are proposed (E12 and E13). The boundary fences of parcels E12 and E13 will be offset by 30m from the edges of the vegetation which line this section of U6006 to preserve its open setting. This existing vegetation will also be strengthened through interplanting, to fill gaps and enhance resilience.

5.16.12 Additional planting is proposed along the western edge of parcels E14, E15 and E16 and the northern edges of E12 and E13 to screen views of panels from U6006 whilst retaining longer views towards the wooded skyline.

5.16.13 Although no PRoW will be located within the Scheme, a small number will be located in proximity. The Scheme has been designed to make use of existing dense vegetation to provide screening and preserve alterative views. Bridleway 204/5 is located to the west of Sunnica West Site A, connecting Snailwell to the north with Newmarket to the south. It is open in the north but enclosed by dense woodland along the majority of its length. Additional planting is proposed on the northern edge of parcel W03 and the southern edge of W04 to reinforce the screening provided by existing woodland. The amenity of this route and existing views across the Snailwell Gallops and north towards Chippenham Fen will be preserved.

Objectives

5.16.14 The Scheme design will deliver the following:

a. Retain and enhance existing vegetation to screen built elements of the Scheme, including from glint and glare effects.
b. Restore the character and condition of existing PRoW affected by construction.
c. Retain longer distance views which contribute to sense of place and wayfinding.
d. Provide new permissive routes which connect with the existing PRoW network and enhance access to the countryside with a choice of longer and shorter routes.
e. Encourage use of existing PRoW and new permissive routes and discourage incursions into ECO areas through signage and fencing.

f. Contribute to enhancement of the wider PRoW beyond the Scheme through s106 contributions.

Design principles

5.16.15 The Scheme will retain visual screening associated with existing PRoW within the Scheme boundaries and implement new permissive routes during the lifetime of the Scheme as illustrated on the **Environmental Masterplans [EN010106/APP/8.47 and EN010106/APP/8.77]** and **Works Plans [EN010106/APP/2.2]**, as follows:

a. Retain and maintain existing vegetation within the Scheme boundaries which provides a visual screening function.

b. Apply the design principles set out in the Cambridgeshire Highways Development Management: General Principles for Development (2023) to proposed permissive paths and interfaces with existing roads and PRoW where appropriate.

c. around the solar panels in parcel E05 and running parallel with Beck Road within Sunnica East Site A. This will provide a connection between Isleham to the west and Freckenham to the south via bridleway W-257. It will also provide opportunities for shorter circular routes and will connect with a new space to the west of E05 where a memorial to the B50 crash site will be constructed.

d. along the southern edge of Sunnica East Site B and adjacent to Elms Road; to connect existing routes from Red Lodge with U6006; and

e. along the north part of Sunnica East Site B, between U6006 and Golf Links Road.

5.16.16 The following design principles will be applied to the proposed permissive paths:

a. The interface of proposed permissive paths with existing PRoW and roads will be clearly marked.

b. The permissive route between Sheldricks Road and Beck Road south of E05 within Sunnica East Site A will be constructed as a minimum 2m wide and finished with self-binding gravel without edging. It will be routed close to the proposed planting and with additional scrub and tree planting to discourage use of the land further south close to Beck Road within ECO1 and ECO2.

c. The remaining permissive paths either follow existing tracks or will be marked with signage and strimmed through grassland. They will neither be surfaced or bound to retain the existing field character.

d. Planting will be offset by a minimum of 2m from proposed permissive paths to avoid encroachment.

e. Permanent environmental fencing will be installed around ECO1 and ECO2 and along the western side of bridleway W-257 to prevent public access and predation of stone curlew plots. Signage and interpretation material will be installed at Beck Road to explain the Scheme and the purpose of the mitigation.

f. A formal space, raised approximately 1.5m above existing ground levels, will be created at a gap in the proposed linear belt of trees and shrubs south of E05. This space will be surfaced with self-binding gravel and will provide a place to

dwell with seating and interpretation materials describing views towards the B50 aircraft crash site and RAF Mildenhall and Lakenheath beyond.

g. Routes will be located outside of security fencing with clear lines of sight to avoid a sense of being fenced in.

h. Routes will be designed to integrate with existing vegetation and proposed planting to enhance amenity.

i. Where routes pass through existing vegetation of proposed planting, the minimum width will be 2m with occasional glades to increase openness.

Maintenance and long term management

5.16.17 The self-binding gravel path south of E05 will be monitored quarterly during the first year of use and annually thereafter until decommissioning. Additional rolling will be applied if the surface begins to lift. If puddles form, depressions will be filled with self-binding gravel and compacted.

5.16.18 Other permissive paths will follow existing tracks or will be strimmed through the grass sward.

Environmental fencing

Introduction

5.16.19 Temporary fencing for visual screening will be installed in addition to the security fencing which will enclose parcels or groups of parcels.

5.16.20 To further enhance the potential for breeding success of Stone-curlew within ECO1, ECO2 and ECO3 (core Stone-curlew area) permanent anti-predator fencing will be placed around the perimeter of the three areas. During the breeding season this will be electrified. The fencing will be installed taking regard of the requirements set out in para 3.4.2 OHEMP, see Annex E of this OLEMP.

5.16.21 A good, attractive PRoW network is important to the success of Stone Curlew mitigation. Fencing and signage is needed to help avoid potential impacts with the ecology of ECO areas by making permissive paths attractive alternatives and discouraging access to ecologically sensitive areas.

Objectives

5.16.22 The environmental fencing will be designed to deliver the following objectives:

a. Screening of solar panel arrays in key locations, including for glint and glare, while proposed planting establishes.

b. Protect ECO areas from ground-based predators during the nesting season and public access, including dogs.

Design principles

5.16.23 The following design principles will be applied to the environmental fencing:

a. Temporary timber screening fencing shall be located along the southern edge of W5, the western edge of W4 to screen views from the A14 and Snailwell Gallops and the eastern edge of E20 to screen views from the adjacent traveller's site at the start of the construction phase. The fencing shall be up to 2.5m in height and toned to be integrated into the landscape, e.g. olive green.

b. Anti-predator fencing. This will be compatible with Countryside Stewardship Higher Tier FG7 and will be electrified between March and August, prior to Stone-curlew returning to site and following completion of nesting. The fence specification will need to: be buried about 25 cm deep into the ground; extend at least 1 m above ground and have electric wires set at around 65cm, 115cm, 130cm and 150cm above ground level, offset 5cm to 10cm out from the post.

c. Any fencing must be placed outside of any highway, including PRoW, boundaries. This will require consultation with the local highway authority, that will determine the location of the highway boundary.

Maintenance and long-term management

d. Temporary screening fencing shall be removed once the proposed planting has reached 2.5m in height and provides effective screening.

e. Anti-predator fencing will be checked annually before the nesting season and any gaps will be fixed.

Signage and interpretation boards

Introduction

5.16.24 Signage will be provided at entry points to the Scheme at the junctions of key PRoW and local roads to demarcate the routes of new permissive paths. Interpretation material will be provided, which explains the key features and functions of the Scheme. This information will be specific to each location, for example describing the purpose of the mitigation and the habitats and species it supports or the archaeology which has been found within the site. Interpretation material provided at the B50 crash site viewing place will be specific to this historical event.

Objectives

5.16.25 The signage and interpretation boards will provide the following:

a. Define the routes and use of proposed permissive paths and connections with the wider PRoW and local road network.

b. Information on the features and functions of the Scheme.

c. Information on the existing and proposed habitats and the species that these support.

d. Signage will be designed for inclusive access.

e. Advice on minimising disturbance to ecology, for example where PRoW and permissive routes and located close to areas of stone curlew mitigation.

f. Information on the archaeology of the site.

Design principles

5.16.26 The following design principles will be applied to the proposed signage and interpretation material:

a. A common style and palette of durable materials will be used across the Scheme and details are reserved for post-consent in agreement with relevant local authorities.

b. Signage will comply with relevant British Standards.

Maintenance and long-term management

c. Signage will be designed such that interpretation material can be replaced or updated during the lifetime of the Scheme.

B50 crash site memorial place

Introduction

5.16.27 On 13 October 1949 a Boeing B-50A Superfortress undertaking a training mission originating from RAF Lakenheath crashed into a field within E05 to the east of Isleham, killing all 12 members of the crew. The location of the crash site has been identified via geophysical survey but is currently unmarked and inaccessible to the public. The crash is an important part of the history of Isleham and the local community. The Scheme provides an opportunity to create a memorial those who died and to tell their story.

Objectives

5.16.28 The B50 memorial place will provide the following:

a. A formal memorial place with seating and interpretation materials with views towards the crash site.

b. Access via the proposed self-binding gravel permissive path linking Isleham to the west with bridleway W-257 from Freckenham to the east.

c. Protection of the crash site through a 50m exclusion zone and native grassland.

d. Spatial reference to the location of the crash site.

Design principles

5.16.29 The following design principles will be applied to the proposed memorial place:

a. The memorial place will be raised up to 1.5m above the surrounding ground level with slopes battered at a maximum gradient of 1:12 to maximise accessibility and landscape integration.

b. The memorial place will be set back at least 20m from the security fencing around E05 and will be surfaced with self-binding gravel, linking to the permissive path network.

c. Interpretation material will focus on the story of the crash and will provide visual aids to understand the location of the crash within the context of the view north towards RAF Lakenheath where the aircraft originated from.

d. Seating will be made from seasoned hardwood and will be informal in character and will comply with relevant British Standards for street furniture.

e. An artist will be commissioned to design an artwork, visible above the intervening solar panels marking the location of the crash site.

Maintenance and long-term management

5.16.30 The self-binding gravel surfacing will be monitored quarterly during the first year of use and annually thereafter until decommissioning. Additional rolling will be applied if the surface begins to lift. If puddles form, depressions will be filled with self-binding gravel and compacted.

5.16.31 Vegetation along the southern edge of E05 will be managed to prevent encroachment within the view of towards the B50 crash site from the viewing place.

5.16.32 The hardwood seating and interpretation signage will be inspected annually. Minor defects or damage will be repaired. If major damage or defects are recorded, the item will be replaced.

6 Monitoring

Post-construction Monitoring

6.1.1 Monitoring will be undertaken to determine that the objectives documented within this OLEMP are being achieved and whether remedial action may be required.

6.1.2 The project landscape architect will carry out quarterly inspections to monitor the establishment of planting during the first five years and then twice annually until year 15 of operation. Thereafter annual inspections will be carried out. The results of these inspections will be formalised in reports supported by photographs to monitor progress against the objectives set out in the LEMP and any remedial actions required. These reports will be provided to the appointed contractor as part of the formal contract administration process and copies will be shared with the Ecology Advisory Group and relevant officers of the local planning authorities. Remedial actions will be formalised through written instructions and further inspections will be carried out to determine success.

Ecological Monitoring

6.1.3 For ecology, the baseline against which the effects of the actions resulting from the monitoring can be compared against, comprise the pre-construction baseline data. A post-construction monitoring programme for the first ten years from the date of commissioning of each relevant phase to which a detailed LEMP applies will be formalised and included within the finalised LEMP for that phase in line with the principles set out in section 5.

However, it is also recognised that habitat monitoring has to meet the criteria as set out in the process for the BNG assessment using metric 3.1 and the upcoming

policy requirements for BNG more generally. As such, a 'Habitat Monitoring Plan' will be submitted to and agreed with the Local Authorities following the construction of any relevant phase and the establishment and monitoring of the detailed LEMP measures and prior to the tenth anniversary of the date of commissioning of each relevant phase to which a detailed LEMP applies. This plan will detail the monitoring measures proposed for the remainder of the Scheme's lifetime starting from the tenth anniversary of the commissioning of the relevant phase, having learnt the lessons of ten years of monitoring the measures put in place. This Plan will set out how the Ecology Advisory Group would be used as an appropriate forum in which to review the monitoring reports and data produced through the lifetime of that plan and to determine, if necessary, what remedial actions may be needed. The commitment to produce this plan will be set out in the detailed LEMPs.

6.1.4 Post-construction monitoring for flora, including arable plants, birds (breeding and non-breeding), riparian mammals, Badger, bats, reptiles and terrestrial invertebrates will be undertaken by the project ecologist following relevant guidance in terms of methods, in the respective seasons, annually in years 1 to 5 post construction and then in Years 7, 9 and 11 post-construction, with subsequent frequency being advised by the Ecology Advisory Group as part of the development of the Habitat Management and Monitoring Plan.

6.1.5 An annual check of wildlife boxes would be made by the project ecologist each winter to ensure that all boxes are still in position and secure.

6.1.6 The management plan will be amended accordingly, based on the post-construction monitoring.

Stone-curlew

6.1.7 The objective of the Stone-curlew offsetting areas is to ensure that there is no net loss in breeding population by ensuring there is no reduction in nesting opportunities for the Stone-curlew population. The success of this will be measured as follows:

a. An average of 50% of the Stone-curlew plots to be in use (*i.e.,* equivalent of 5 breeding pairs) in the first 5 years post construction and then in the 5 year periods following, until decommissioning.

6.1.8 The following monitoring will be undertaken during construction and operation to establish the baseline populations of Stone-curlew present within the Order limits and 500m buffer. This population will also be consisted in the context of the wider Breckland population and the species national trend.

6.1.9 Construction related monitoring is detailed and secured in the Framework CEMP. This will consist of pre-commencement surveys being undertaken in advance of works commencing, and will cover the Order limits and 500m buffer. The survey methods will follow those recommended by the RSPB. Construction will be phased so that areas within 500m of the new habitat provisions are developed outside the Stone-curlew breeding season of March to October and that the replacement nesting plot provisions are ready for use by Stone-curlew by the breeding season at the start of construction. Monitoring during construction will be undertaken of the Stone Curlew offsetting areas, including the condition of these habitats, in the context of providing optimal nesting and foraging habitat. The monitoring will

additionally include those areas within 500m of construction where there is suitable nesting habitat during the breeding season.

Operational monitoring is detailed and secured in the Framework OEMP. The use of the Stone-curlew offsetting areas will be monitored annually for the lifetime of the Scheme, along with the population present within 500m of the Scheme. Monitoring will include both the occupancy of the offsetting habitats by Stone-curlew and the condition of these habitats, in the context of providing optimal nesting and foraging habitat. Annual monitoring reports will be submitted for review and consultation with the Ecology Advisory Group, to allow any remedial actions to be identified and agreed. Any remedial actions agreed with the Ecology Advisory Group will be implemented as a commitment by the Scheme.

6.2 Roles and Responsibilities

Introduction

6.2.1 The contractor responsible for undertaking planting and aftercare of proposed planting and existing vegetation within the boundaries of the site will be a member of the British Association of Landscape Industries (BALI) of equivalent. The Applicant and/or the Appointed Contractor(s) will appoint a suitably qualified ecologist, landscape architect and arboriculturist to monitor the creation, establishment and long-term management of planting and existing habitats. Their roles are defined as follows:

a. Ecologist – responsible for undertaking ecological surveys and watching briefs and recording and reporting on the biodiversity of the site against project commitments, including Biodiversity Net Gain.

b. Landscape architect – responsible for finalising the design and specification of proposed planting and management of existing habitats and overseeing the planting, establishment aftercare and long-term management of new habitats,

c. Arboriculturist – responsible for carrying out tree surveys during construction establishment maintenance and long-term management to monitor tree health and the safety of the public and the operation of the Scheme.

The Applicant and/or the Appointed Contractor(s)

6.2.2 The Applicant and appointed contractor(s) and their Environmental Clerk of Works would be responsible for:

a. correct instruction of all parties contributing to delivery of the final approved LEMP (including but not restricted to the Applicant's staff and their appointed ecologists, landscape architects, landscape contractors, construction contractors and management organisations) based upon the principles stated within the OLEMP;

b. compliance with the final approved LEMP, relevant legislation and any relevant planning commitments;

c. keeping the appointed ecologist, landscape architect and arboriculturist informed of work activities that require support and supervision, so that it is clear when attendance at the Order limits is required;

d. Enacting and, or enforcing recommendations made by the appointed ecologist, landscape architect and arboriculturist, or otherwise agreeing an appropriate alternative course of action, if it is subsequently determined that previous advice is not practicable or is out of date; and

e. keeping a record of measures taken to deliver the requirements of the final LEMP, to provide an auditable record of compliance.

The Appointed Ecologist

6.2.3 The appointed ecologist would be responsible for:

a. advising the Applicant and the appointed contractor(s) on ecological matters and requirements for compliance with relevant legislation and protected species licences, providing support as instructed, and monitoring compliance with the final approved LEMP;

b. reviewing the LEMP at appropriate intervals and revising management requirements as necessary for the following five year period and subsequently for the duration of the Plan;

c. where a European Protected Species Mitigation Licence (EPSML) has been granted it is the responsibility of the 'Named Ecologist' and licence holder or otherwise appointed ecologists to ensure the compliance of the licence and working activities associated with the agreed licence; and

d. providing the Applicant and the appointed contractor(s) with survey reports and other written evidence required in accordance with the agreed scope of work and contractual obligations.

The Appointed Landscape Architect and Arboriculturist

6.2.4 The appointed landscape architect and arboriculturist will be responsible for:

a. providing specialist site supervision in the form of walkover assessments relating to relevant landscape areas. This would be to assess the implementation and maintenance of landscape components and their condition and identify the need for landscape enhancement as instructed and in accordance with the agreed scope of work and contractual obligations, once the power station is operational;

b. monitoring and assessing the landscape related elements of the approved LEMP for their effectiveness;

c. The LEMP shall be amended accordingly to suit any changing landscape conditions and ultimately inform the maintenance operations throughout the operational life of the Scheme; and

d. ensuring that any reviews associated with landscape related elements of the approved LEMP clearly identifies any changes to site conditions and circumstances, whether the aims and objectives of the approved Plan are being met, and where identified changes are needed to existing management practices and timeframes.

e. The Appointed Landscape Architect and Arboriculturist will note any outbreaks of pests and diseases and instruct remedial action if required. If large scale unavoidable loss of vegetation which is relied upon for visual screening cannot

be avoided, for example through an outbreak of Ash dieback, additional planting with alternative species will be carried out.

f. Providing the Applicant and the appointed contractor(s) with survey reports and other written evidence required in accordance with the agreed scope of work and contractual obligations.

The Ecology Advisory Group

6.2.5 This section sets out the Terms of Reference (ToR) for the Ecology Advisory Group (EAG). In doing so, it will be a requirement of the detailed LEMPs approved pursuant to Requirement 8 to reference and append these ToR. The Applicant will engage with the EAG on the development of the detailed LEMPs, and require that the detailed LEMPs explains how this has been done. There is to be one EAG whose remit will cover all measures brought forward under all detailed LEMPS that are brought forward.

6.2.6 The EAG is to be a long-term partnership providing an interactive and sustainable vehicle for dealing with biodiversity matters to meet the ambition for the Scheme. The EAG will advise on:

a. the achievement of biodiversity mitigation and enhancement as laid out in the Development Consent Order

b. communication regarding biodiversity matters between the Scheme and relevant stakeholders;

c. the need to respond within these terms of reference of the EAG to the changes that will occur over its lifetime, e.g. in policy and legislation; and

d. the co-ordination of any research projects planned around the Scheme and dissemination of the outcomes providing both feedback within the Scheme and externally.

6.2.7 The Applicant will establish the EAG prior to the submission of the first detailed LEMP to help inform its development, with the EAG convening in advance of the commencement of the authorised development and the EAG shall continue to exist until completion of decommissioning works, unless a shorter period is agreed between the members of the EAG.

6.2.8 The EAG shall comprise:

a. two representatives to be nominated by the Applicant (one of which will be a suitably qualified and experienced ecologist);

b. one representative to be nominated by East Cambridgeshire District Council;

c. one representative to be nominated by West Suffolk Council;

d. one representative to be nominated by Cambridgeshire County Council; and

e. one representative to be nominated by Suffolk County Council.

6.2.9 The EAG shall encourage participation at its meetings by representatives of Natural England, the RSPB, any relevant Wildlife Trust or other ecology stakeholders, from time to time.

6.2.10 The Applicant shall be responsible for the administration of convening and holding meetings of the EAG.

6.2.11 The EAG shall meet at least annually either virtually or in a convenient location to be identified by the Applicant and with agreement from the members of the EAG.

6.2.12 Meetings will be:

a. Chaired by the Applicant;
b. be quorate if at least five members are present;
c. review monitoring undertaken in accordance with the detailed LEMP;
d. consider and review proposals for research projects submitted by interested parties and where satisfied approve; and
e. review and consider research reports received.

6.2.13 The EAG shall:

a. be consulted and provide advice on implementation of the ecological aspects of the detailed LEMPs secured by the DCO, including monitoring and the requirement for adaptive management, in line with the requirements of this OLEMP;
b. be involved in the development of the detailed LEMPs and the Habitat Management and Monitoring Plans as set out in this OLEMP;
c. determine whether the ecological commitments and outcomes set out in this OLEMP for all stages of the Scheme, are being met;
d. if the commitments and outcomes in this OLEMP are not being met, agree reasonable actions that the Applicant must implement in an agreed period of time (which may, but are not required to, include updating and amending the detailed LEMPs), in order to meet the relevant commitments and outcomes; and
e. work with the Applicant in meeting its commitments in the Framework DEMP with regards to dealing with ecological habitats post the carrying out of the decommissioning works.

6.2.14 The Applicant will meet all reasonable costs of attendees related to the attendance of meetings and reviewing supplied material. Additional costs will be met where deemed necessary and agreed in advance between the EAG members.

Annex A Illustrative Sections

Section Plan
1:25,000 @ A3

1
1'
2
2'
3
3'
4
4'
5
5'
6
6'

Frackenham
Worlington
Badlingham
Red Lodge
Chippenham
Kennett

0 1Km North

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Notes:
- All dimensions given in Metres unless otherwise specified.
- APFP Regulation: 5(2)(a)

Purpose of Issue
For DCO Submission

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
Figure 1
Section location plan

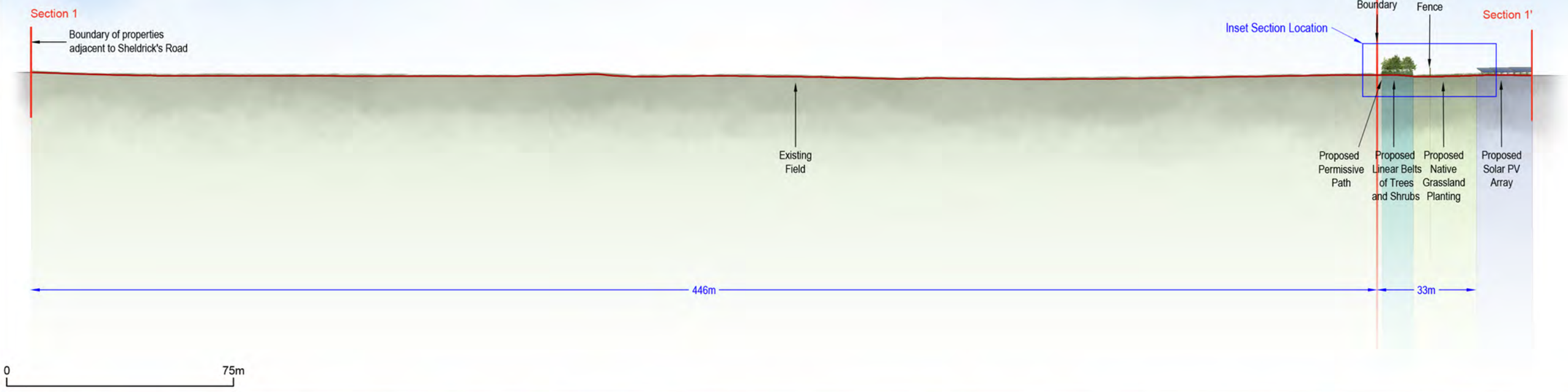
Drawn	Checked	Approved	Date
TR	RH	NC	10/11/2021

AECOM Internal Project No.	Scale @ A3
60589004	Refer to Image

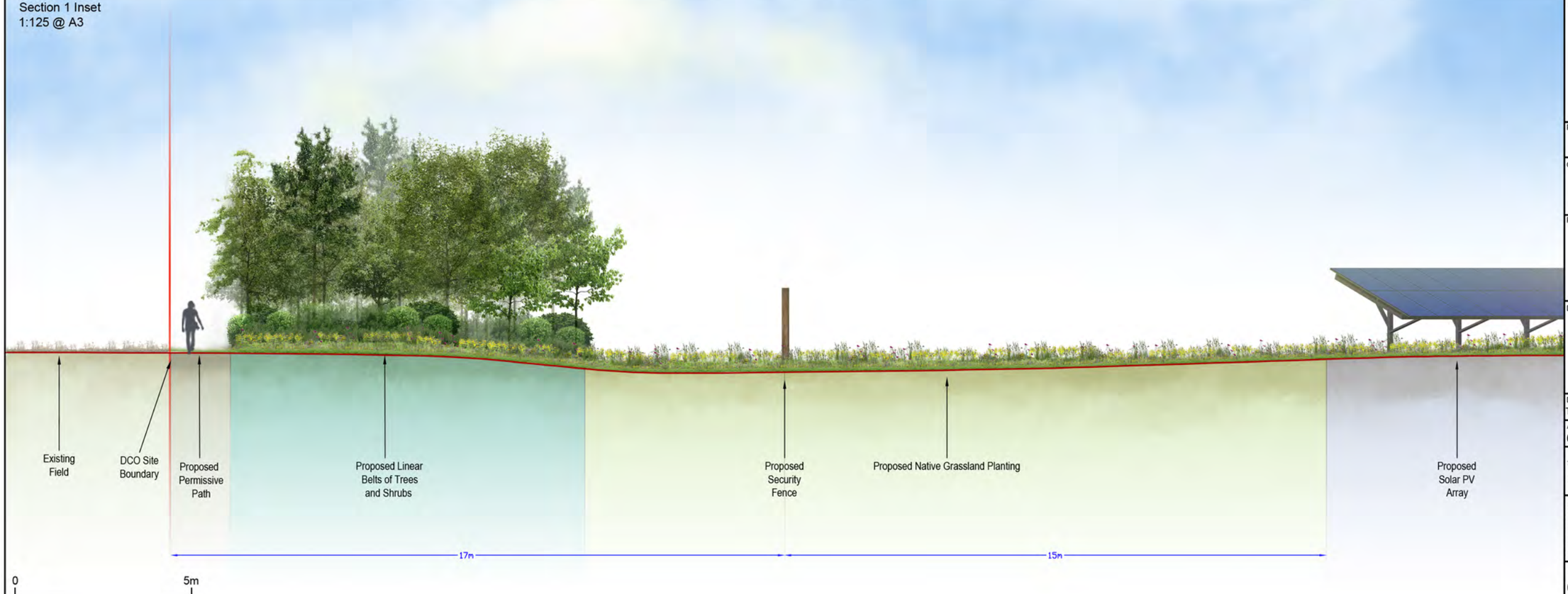
AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004_ES_LSP_030A	1

Section 1-1'
1:1,500 @ A3



Section 1 Inset
1:125 @ A3



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Key Plan 1:20,000 @ A3

Section 1-1'
Between properties on Sheldrick's Road and the north-west edge of Sunnica East Site A (E05)

Note:
All dimensions given in Metres unless otherwise specified.

Purpose of Issue: ES

Client: SUNNICA LTD

Project Title: sunnica energy farm

Drawing Title: Figure 2
Illustrative Cross Section 1 – Sheldrick's Road to Sunnica East Site A

Drawn	Checked	Approved	Date
TR	RH	NC	01/10/2021

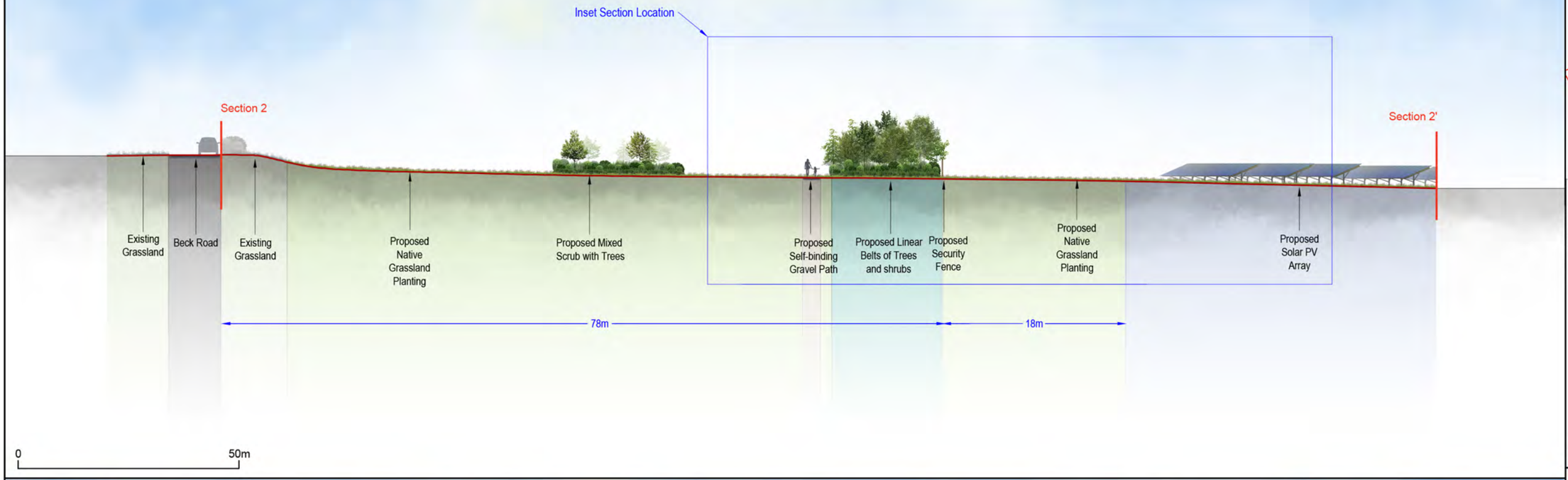
AECOM Internal Project No.	Scale @ A3
60589004	Refer to Image

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

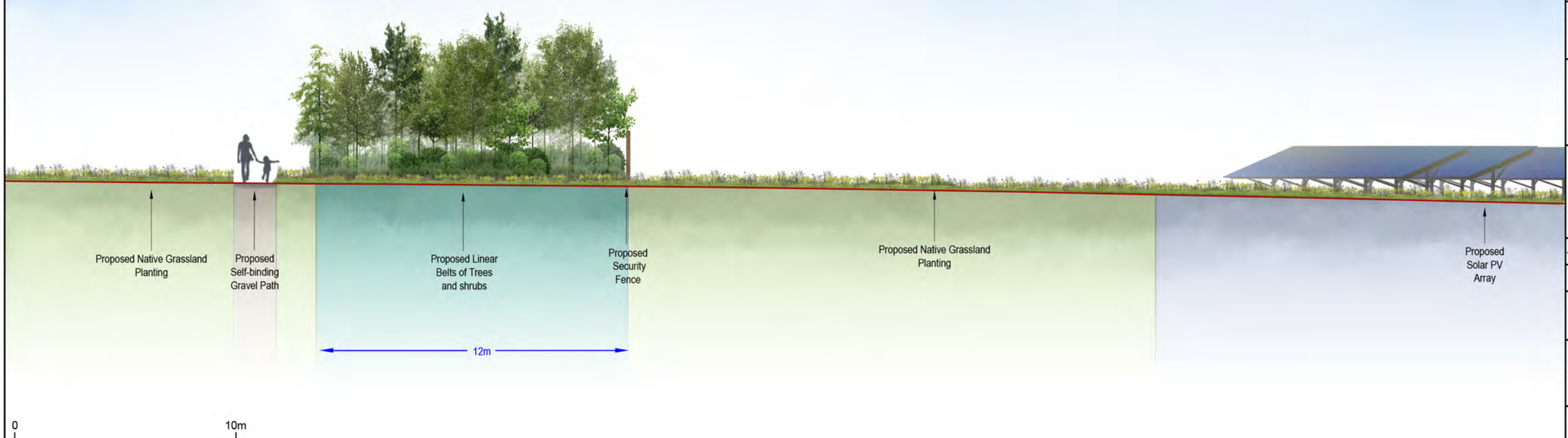
Drawing Number	Rev
60589004_ES_LSP_030B	1

File Name:

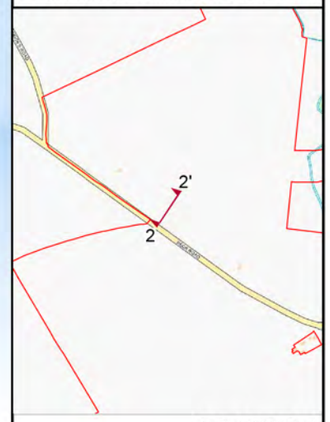
Section 2-2'
1:500 @ A3



Section 2 Inset
1:200 @ A3



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT



Key Plan 1:20,000 @ A3

Section 2-2'
Between Beck Road and Sunnica East Site A (E05)

Note:
All dimensions given in Metres unless otherwise specified.

Purpose of Issue
ES

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
Figure 3
Illustrative Cross Section 2 – Beck Road

Drawn	Checked	Approved	Date
TR	RH	NC	02/03/2021

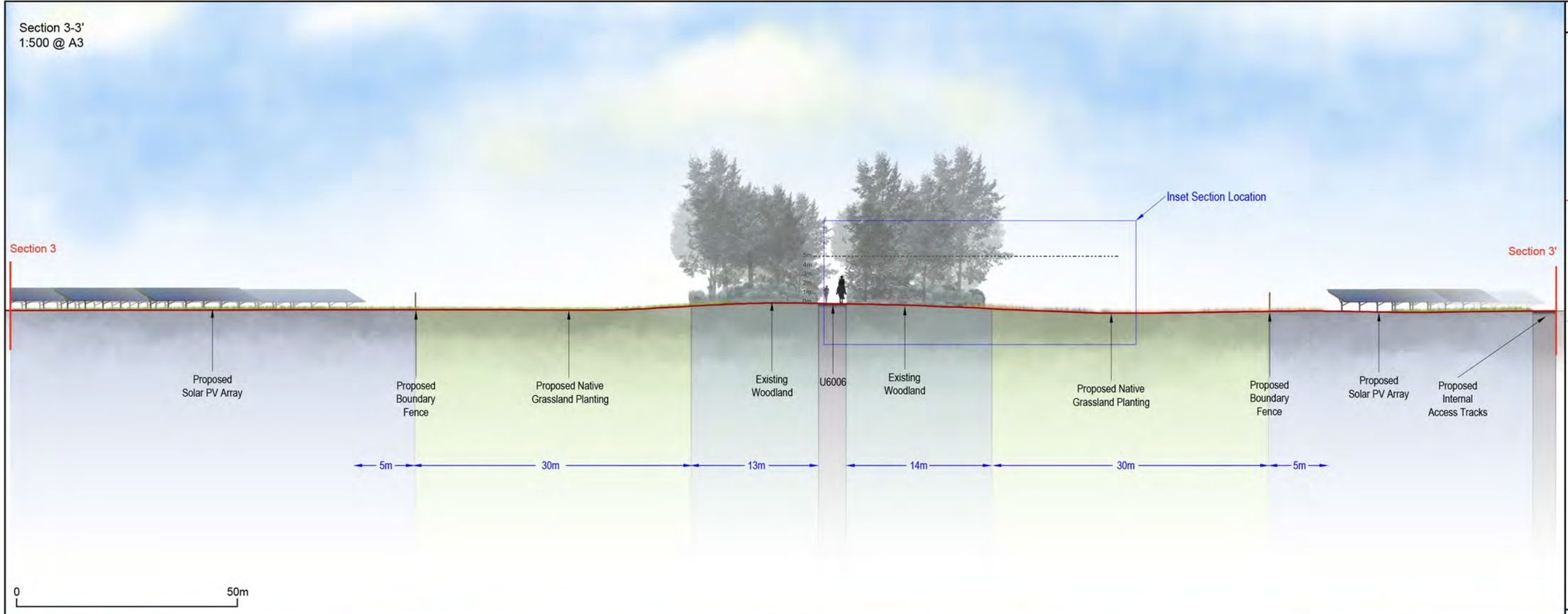
AECOM Internal Project No.	Scale @ A3
60589004	Refer to Image

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

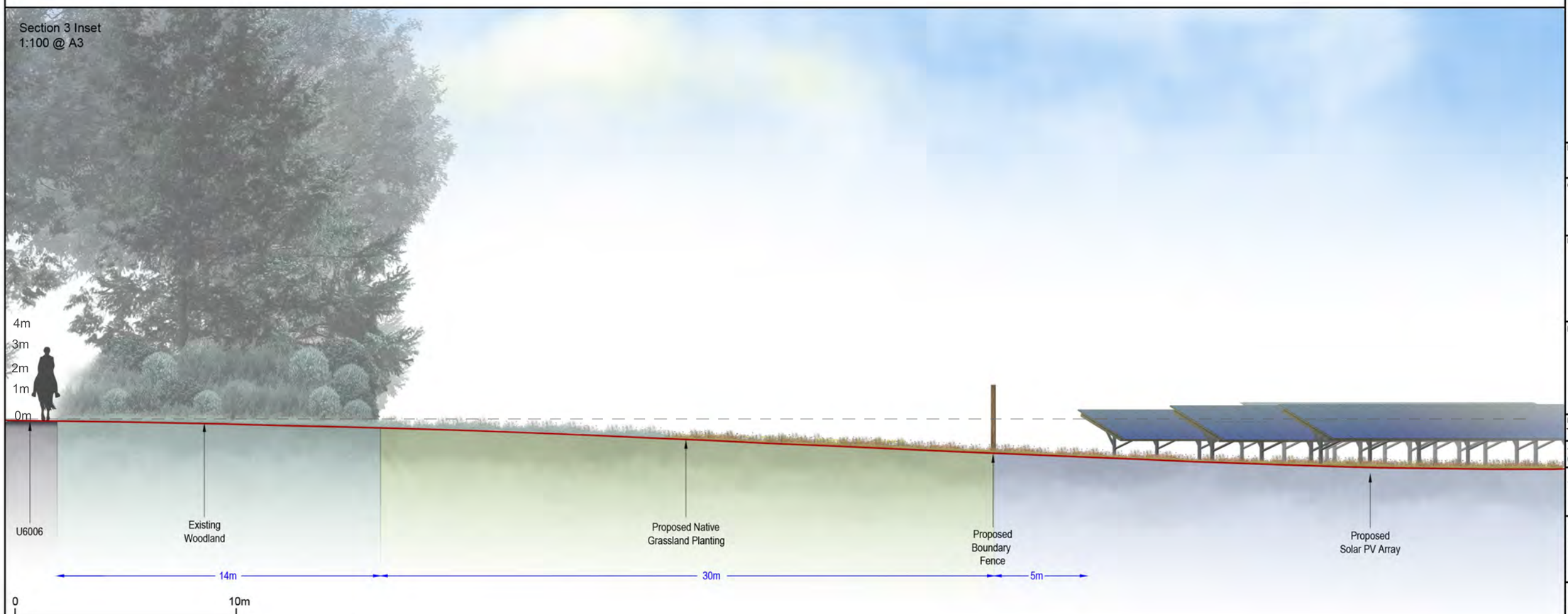
Drawing Number	Rev
60589004_ES_LSP_030C	1

File Name:

Section 3-3'
1:500 @ A3



Section 3 Inset
1:100 @ A3



File Name:

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Key Plan 1:20,000 @ A3

Section 3-3'
Adjacent to Public Right of Way U6006

Note:
All dimensions given in Metres unless otherwise specified.

Purpose of Issue
ES

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
Figure 4
Illustrative Cross Section 3 – U6006

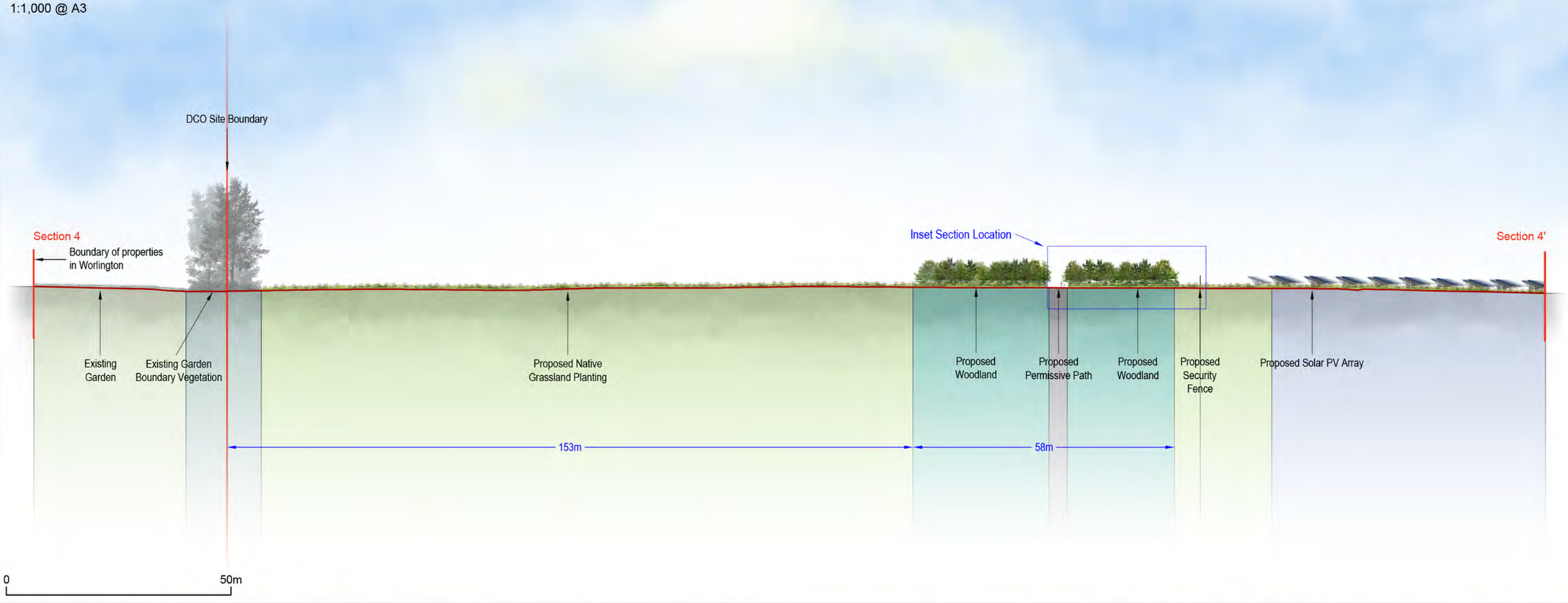
Drawn	Checked	Approved	Date
TR	RH	NC	01/10/2021

AECOM Internal Project No.	Scale @ A3
60589004	Refer to Image

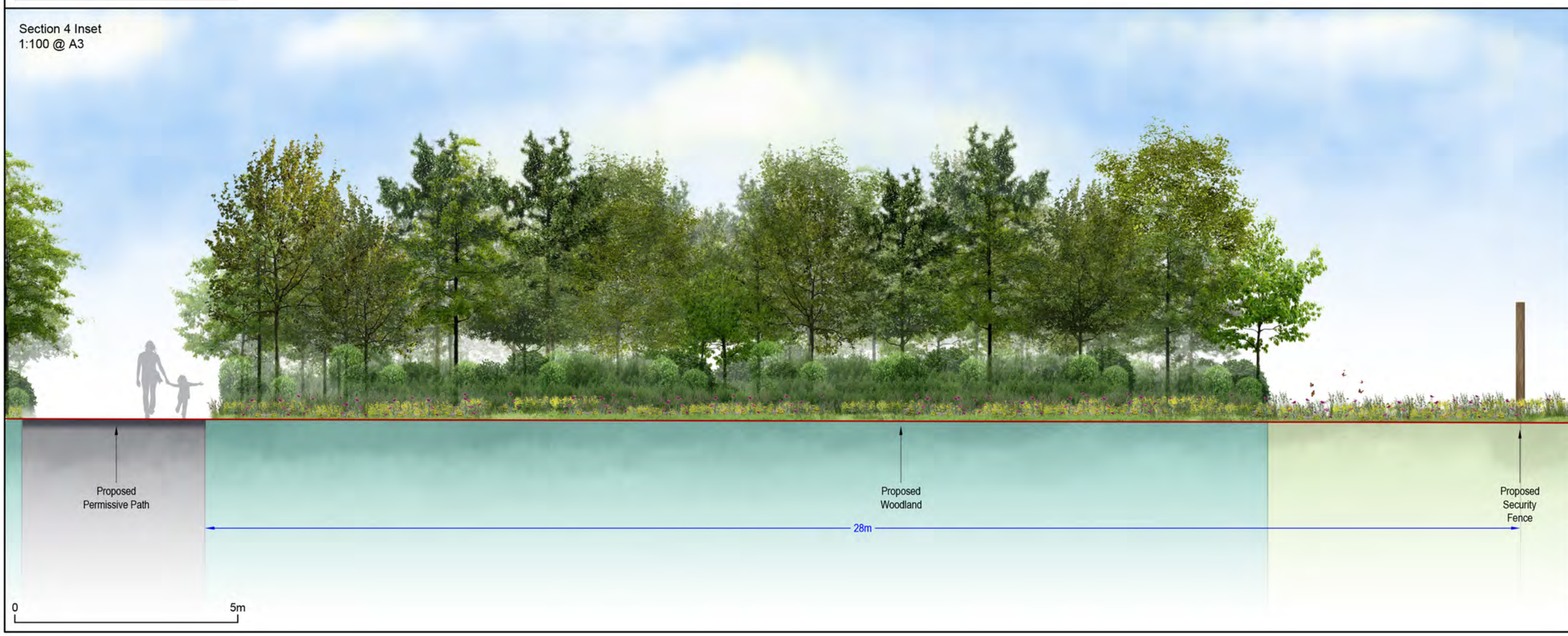
AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004_ES_LSP_030D	1

Section 4-4'
1:1,000 @ A3



Section 4 Inset
1:100 @ A3



File Name:

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Key Plan 1:20,000 @ A3

Section 4-4'
Between properties at the southern edge of Worlington and Sunnica East Site B (E25)

Note:
All dimensions given in Metres unless otherwise specified.

Purpose of Issue
ES

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
Figure 5
Illustrative Cross Section 4 – Worlington

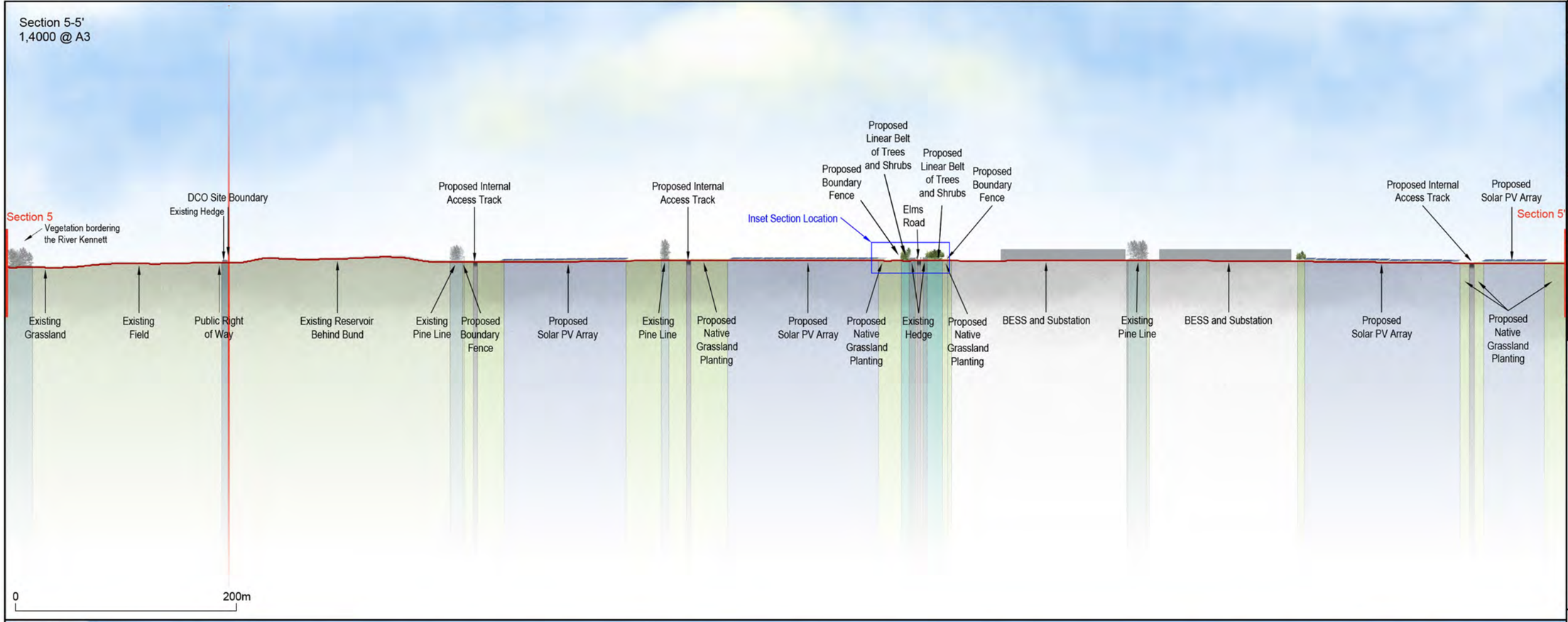
Drawn	Checked	Approved	Date
TR	RH	NC	02/07/2021

AECOM Internal Project No.	Scale @ A3
60589004	Refer to Image

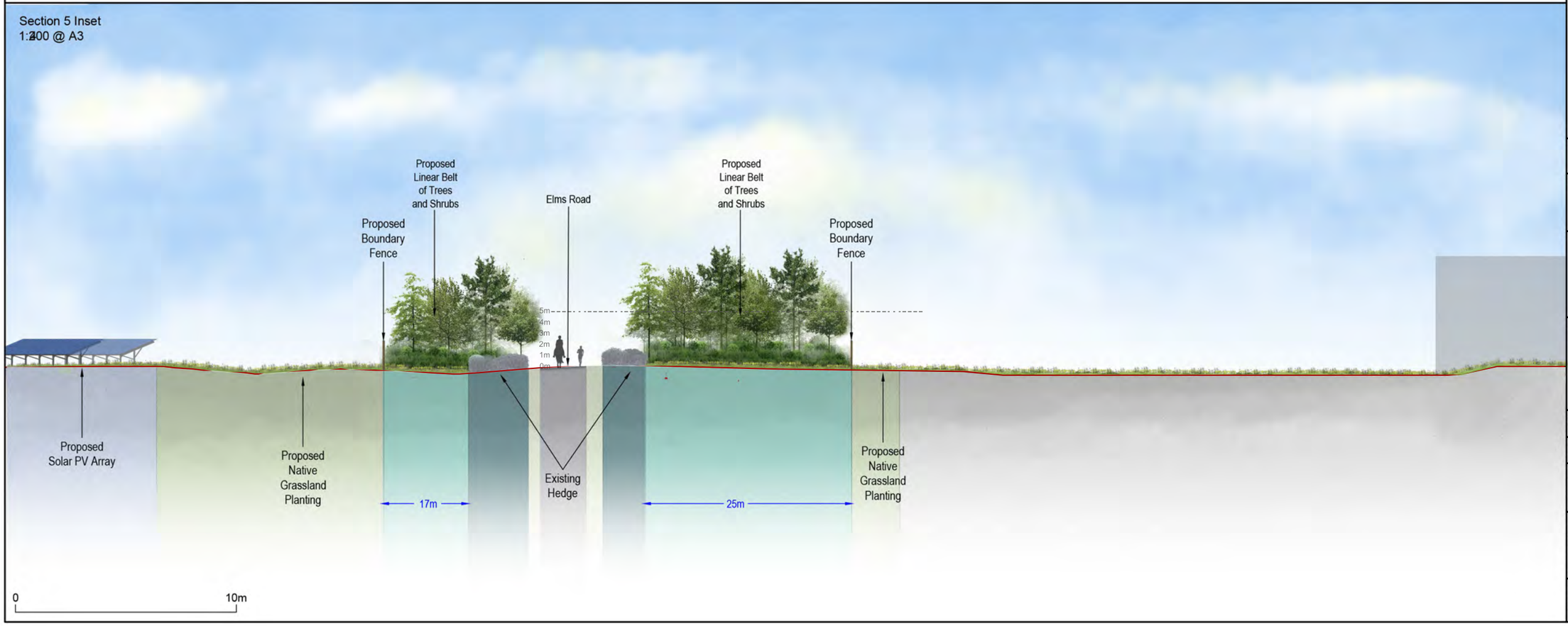
AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004_ES_LSP_030E	1

Section 5-5'
1,4000 @ A3



Section 5 Inset
1:200 @ A3



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Key Plan 1:20,000 @ A3

Section 5-5'
Across Sunnica East Site B, either side of Elms Road

Note:
All dimensions given in Metres unless otherwise specified.

Purpose of Issue
ES

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
Figure 6
Illustrative Cross Section 5 – Elms Road

Drawn	Checked	Approved	Date
TR	RH	NC	01/10/2021

AECOM Internal Project No.
60589004

Scale @ A3
Refer to Image

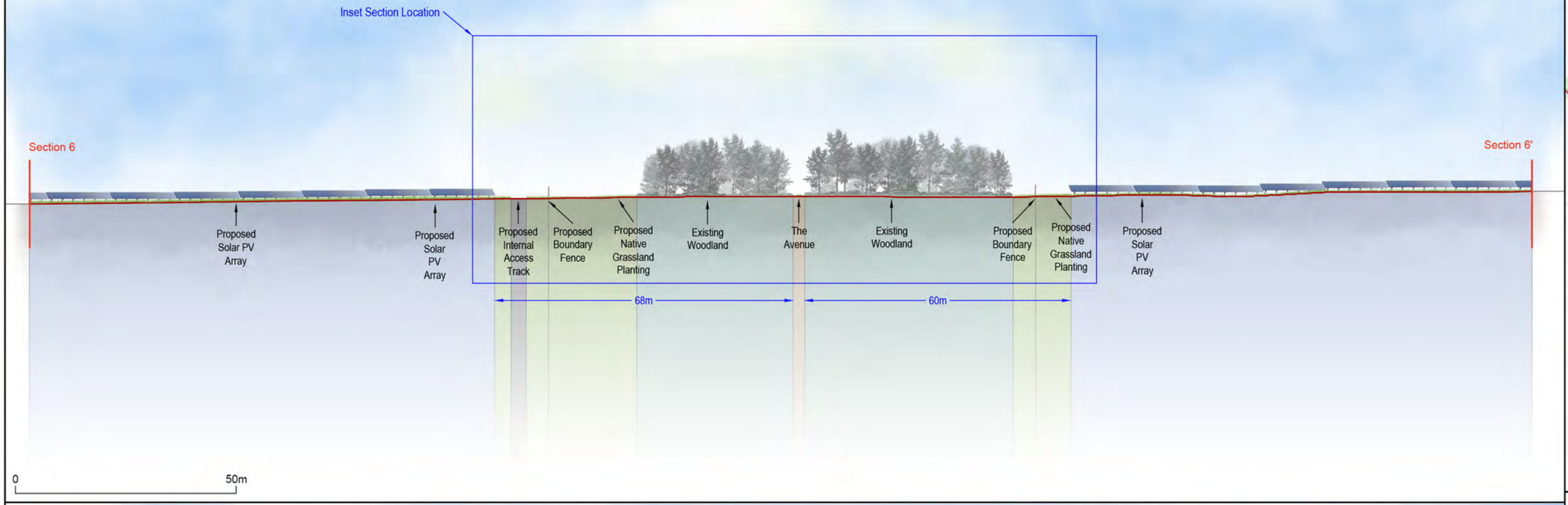
AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number
60589004_ES_LSP_030F

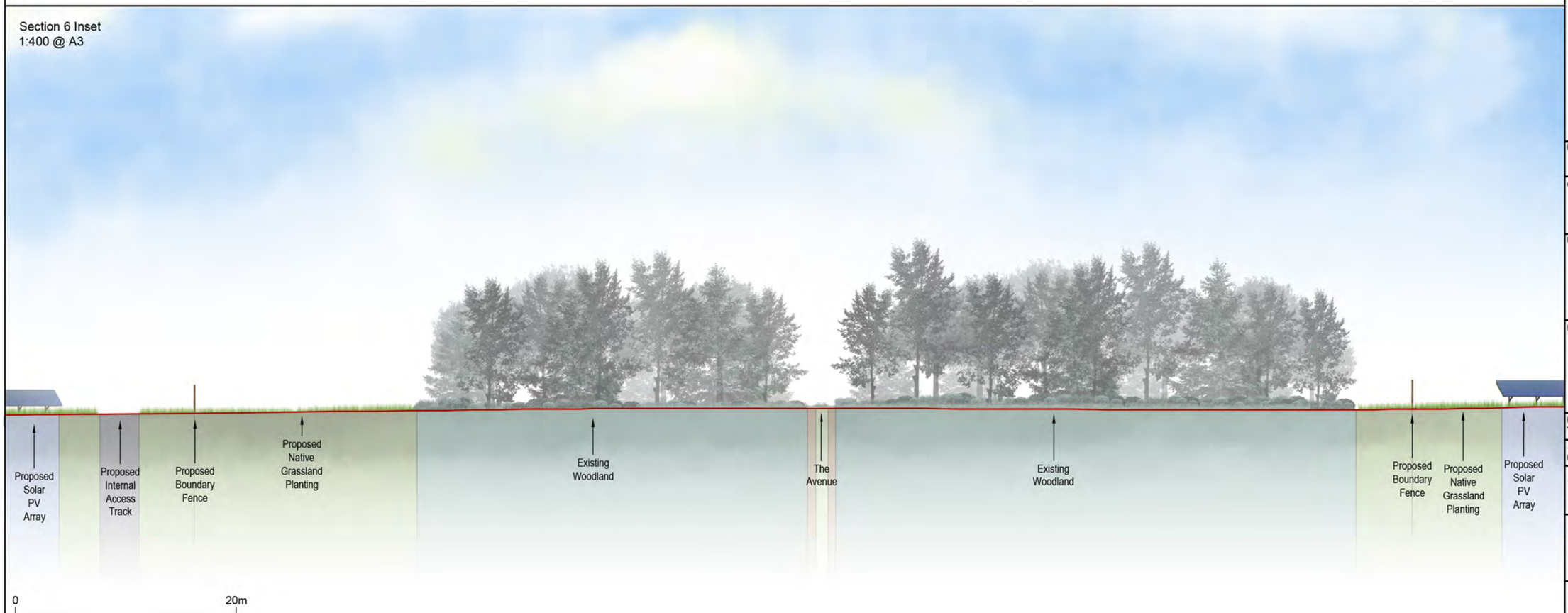
Rev
1

File Name:

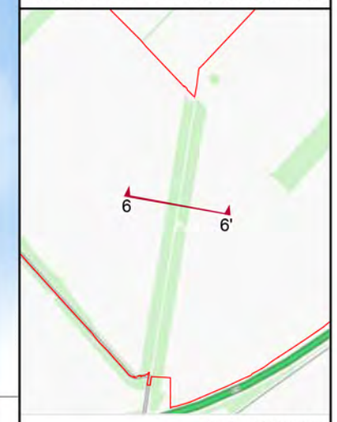
Section 6-6'
1:1,000 @ A3



Section 6 Inset
1:400 @ A3



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT



Key Plan 1:20,000 @ A3

Section 6-6'
Across The Avenue at Sunnica West Site A

Note:
All dimensions given in Metres unless otherwise specified.

Purpose of Issue
ES

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
Figure 7
Illustrative Cross Section 6 – The Avenue

Drawn	Checked	Approved	Date
TR	RH	NC	01/10/2021

AECOM Internal Project No.	Scale @ A3
60589004	Refer to Image

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004_ES_LSP_030G	1

File Name:

Annex B Field Management after Establishment

Table B1. Field Habitat Descriptions and Management Sunnica East Site A and B, and West Site A

Plot/ field	Area (ha)	Location within the Scheme (county)	Soil types (approximate)	UK Hab type (baseline/pre-development),	Distinctiveness (baseline/ pre-development)	BNG UK Hab type (post-development)	BNG UK Hab type (post-development): Retained / Created	BNG habitat condition (post-development)	Distinctiveness (post-development)	Time to condition	Management after establishment of the grassland	Special features / ecological receptor	Mitigation measures
E01	11.7	East A (Suffolk)	Fen peat soils (30%, northern part) and shallow lime-rich soils over chalk or limestone (70%, southern side)	Other neutral grassland	Medium	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February) within the boundary fencing.	Purple moor grass and rush pasture (retained) (LBAP Habitat of Principal Importance). Existing reed along the Lee Brook will be allowed spread. Individual willow trees will be sporadically planted along the Lee Brook to improve the mosaic of riparian habitats present. Sensitive management for reedbeds	The solar panels are offset from the fen woodland to the north and by a minimum 8m strip along the Lee Brook to the west. Existing areas of rush pasture (marshy grassland) and other neutral grassland will be retained.
				Cereal crops	Low	Other neutral grassland	Created	Good	Medium	10			
				Other rivers and streams	Medium	Other neutral grassland	Created/ Retained	Poor	Medium	5			
				Urban Trees	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
				Purple moor grass and rush pasture	V.High	Urban Trees	Created	Good	Low	15			
						Other rivers and streams	Retained	Good	Medium				
						Purple moor grass and rush pasture	Retained	Good	V.High				
E02	1.8	East A (Suffolk)	Fen peat soils (65%, northern part) and freely draining slightly acid but base-rich soils (35%, southern part)	Ruderal/Ephemeral	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February) within the boundary fencing.	Scrub planting will benefit a host of farmland bird species, including Linnet and, Yellowhammer -	New woodland planting along the eastern edge of the parcel to reinforce the vegetation structure adjacent to Ferry Lane and screen the panels in longer distance views from the east.
				Native hedgerow - associated with bank or ditch	High	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Other neutral grassland	Medium	Mixed scrub	Created	Good	Medium	10			
				Mixed scrub	Medium	Developed land; sealed surface	Created	N/A	V. Low	0			
				Other rivers and streams	Medium	Other neutral grassland	Created	Good	Medium	10			
				Native hedgerow; with ditch	High	Other neutral grassland	Created	Poor	Medium	5			
						Native hedgerow; with ditch	Retained	Moderate	High				
						Other rivers and streams	Retained	Good	Medium				
E03	22	East A (Suffolk)	Shallow lime-rich soils over chalk or limestone (35%, north-west side). Freely draining slightly acid but	Other neutral grassland	Medium	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Purple moor grass and rush pasture (retained) (LBAP Habitat of Principal Importance). Grassland margins would be retained north	Proposed new woodland to the north and south of the parcel, to screen views from the wider landscape to the north and from Lee Farm. The
				Developed land: sealed surface	V.Low	Other lowland acid grassland	Created	Good	Medium	15			

			base-rich (65%, south-east side)	Ruderal/Ephemeral	Low	Other neutral grassland	Created	Poor	Medium	5		of Lee Farm for Barn Owl.	linear form of the woodland reflects the linear form of pine lines within the wider landscape and provides vegetation linkages east to west across this part of the scheme, between the Lee Brook and vegetation bordering Ferry Lane.
				Native hedgerow	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Other rivers and streams	Medium	Lowland calcareous grassland	Created	Poor	High	5			
				Cereal crops	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
				Purple moor grass and rush pasture	V. High	Other rivers and streams	Retained	Good	Medium				
				Mixed scrub	Medium	Native hedgerow	Retained	Moderate	Low				
				Other coniferous woodland	Low	Purple moor grass and rush pasture	Retained	Good	V.High				
						Mixed scrub	Retained	Moderate	Medium				
						Other coniferous woodland	Retained	Moderate	Low				
E04	12.5	East A (Suffolk)	Freely draining slightly acid but base-rich soils (85%) and shallow lime-rich soils over chalk or limestone (15%, north-west corner)	Vacant/derelict land/bare ground	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	-	Additional woodland along the northern edge and the eastern edge, adjacent to Ferry Lane, so as to screen the panels and improve the vegetation cover.
				Ruderal/Ephemeral	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Other rivers and streams	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Other neutral grassland	Medium	Other neutral grassland	Created	Poor	Medium	5			
						Developed land; sealed surface	Created	N/A	V. Low	0			
E05	37.6	East A (Cambridgeshire)	Freely draining lime-rich loamy soils (90%) and shallow lime-rich soils over chalk or limestone (10%, eastern side)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological exclusion area. Sensitive management area for Stone- curlew, Skylark, Corn Bunting and Turtle Dove.	The solar panels have been sited back (80m) from Beck Road via a landscape buffer of native grassland, to reduce the proximity of the panels to road users, retain views along the road corridor of the churches in Isleham and Freckenham and to retain a perception of travelling through the landscape that separates the settlements.
				Native hedgerow	Low	Other neutral grassland	Created	Good	Medium	10			
				Lowland mixed deciduous woodland	High	Other neutral grassland	Created	Moderate	Medium	5			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Mixed scrub	Created	Good	Medium	10			
						Purple moor grass and rush pasture	Created	Moderate	V.High	30			
						Urban Trees	Created	Good	Low	15			

						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native hedgerow	Retained	Moderate	Low				
E08	5.9	East A (Suffolk)	Freely draining slightly acid but base-rich (100%)	Vacant/derelict land/bare ground	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Undeveloped wide margins, good habitat for insect pollinators	Enclosed by new hedgerows planting to strengthen existing vegetation patterns and to enclose the BESS and substation and enhance habitat connectivity.
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Native Hedgerow with trees	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Native hedgerow: species rich	Created	Good	Medium	12			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Native hedgerow with trees	Retained	Moderate	Medium				
						Native Hedgerow	Retained	Moderate	Low				
E09	7.8	East A (Suffolk)	Freely draining slightly acid but base-rich (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological exclusion area. Undeveloped wide margins, good habitat for insect pollinators.	New woodland planting to the west of E09
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
						Other neutral grassland	Created	Moderate	Medium	5			
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Native hedgerow	Retained	Moderate	Low				
E10	10.5	East A (Suffolk)	Freely draining slightly acid but base-rich soils (100%)	Vacant/derelict land/ bare ground	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Undeveloped wide margins, good habitat for insect pollinators	
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow with trees	Medium	Native hedgerow: species rich	Created	Good	Medium	12			
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Other woodland: broadleaved	Created	Moderate	Medium	15			

						Other neutral grassland	Created	Moderate	Medium	5			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Native hedgerow	Retained	Moderate	Low				
						Native hedgerow with trees	Retained	Moderate	Medium				
E12	35.5	East B (Suffolk)	Freely draining slightly acid but base-rich (78%). Freely draining slightly acid sandy soils (15%, southern), Freely draining slightly acid but base-rich soils (7%, north-west)	Cereal crops (removed)	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	-	Solar panels have been sited to the south of Worlington and offset from the residential land uses
				Other woodland; mixed	Medium	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Vacant/derelict land/ bare ground	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
				Other neutral grassland	Medium	Other woodland; mixed	Retained	Moderate	Medium				
				Lowland mixed deciduous woodland	High	Lowland mixed deciduous woodland	Retained	Moderate	High				
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
E13	12.9	East B (Suffolk)	Freely draining slightly acid sandy soils (80%). Freely draining slightly acid but base-rich (20%, north-west side).	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Sensitive management area for insect pollinators (B-Lines). Areas of acid grassland on E13 will be translocated to ECO3. Wide margins, sensitive management for potential reptiles.	
				Other lowland acid grassland	Medium	Other lowland acid grassland	Created	Good	Medium	15			
				Other woodland: mixed	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Vacant/derelict land/bare ground	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
						Other woodland; mixed	Retained	Moderate	Medium				
E14	8.8	East B (Suffolk)	Freely draining slightly acid sandy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate/Poor	Low	4	Conservation grazing (Low density, September – February)	Managed for pollinators (B-Lines). Arable field plots (pollen and nectar). (LBAP Habitat of principal importance). Areas to be managed for arable weeds.	
				Other woodland: mixed	Medium	Other lowland acid grassland	Created	Good	Medium	15			
				Line of trees	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			

						Arable field margins pollen and nectar	Created	Moderate	V.High	5		Managed for terrestrial invertebrates. Wide margins, sensitive management for potential reptiles.	
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Line of trees	Retained	Moderate	Low				
						Other woodland; mixed	Retained	Moderate	Medium				
E15	8.8	East B (Suffolk)	Freely draining slightly acid sandy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for pollinators (B-Lines). Managed for terrestrial invertebrates Wide margins, sensitive management for potential reptiles.	
				Line of trees	Low	Other lowland acid grassland	Created	Good	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Line of trees	Retained	Moderate	Low				
E16	8.1	East B (Suffolk)	Freely draining slightly acid sandy soils (60%, north-east) and freely draining slightly acid but base-rich soils (40%, south-west)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for insect pollinators (B-Lines). Sensitive management for Skylark.	
				Line of trees	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Line of trees	Retained	Moderate	Low				
						Native hedgerow	Retained	Moderate	Low				
E17	7.5	East B (Suffolk)	Freely draining slightly acid sandy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Managed for insectpollinators (B-Lines). Arable field plots. (LBAP Habitat of principal importance). Areas to be managed for arable weeds. Wide margins, sensitive management for potential reptiles.	
				Vacant/derelict land/bare ground	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Line of trees	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Other neutral grassland	Medium	Arable field margins pollen and nectar	Created	Moderate	V.High	5			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Line of trees	Retained	Moderate	Low				

E18	19	East B (Suffolk)	Freely draining slightly acid sandy soils (100%)	Cereal crops	Low	Other woodland: broadleaved	Created	Moderate	Medium	15	General grazing (March-August) or mowing for hay	Mainly proposed habitat bare ground (BESS and substation)	Woodland planting to enclose the BESS and substation and connect habitats along Elms Road with woodland around the quarry to the north.
				Vacant/derelict land/ bare ground	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Other neutral grassland	Medium	Developed land; sealed surface	Created	N/A	V. Low	0			
				Native hedgerow	Low	Line of trees	Retained	Moderate	Low				
				Line of trees	Low	Native hedgerow	Retained	Moderate	Low				
E19	15.1	East B (Suffolk)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Sensitive management for wide margins	Woodland planting within a minimum width of approximately 25m proposed along the western edge of Parcel E19 to reinforce habitat connectivity south of Elms Road and visual screening, particularly for Brookside Stud.
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Lowland mixed deciduous woodland	High	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	N/A			
						Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native hedgerow	Retained	Moderate	Low				
E20	10.9	East B (Suffolk)	Freely draining slightly acid sandy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Wide margins Sensitive management for Yellowhammer	Tree belts proposed along the eastern edge, with panels set back from the boundaries to reinforce habitat connectivity and separation from Red Lodge to the east.
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Line of trees	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Lowland mixed deciduous woodland	High	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native Hedgerow	Retained	Moderate	Low				
						Line of Trees	Retained	Moderate	Low				
E21	9.5	East B (Suffolk)	Freely draining slightly acid but base-rich soils	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August)	Wide margins	Tree belts are proposed along the eastern edge to reduce the visibility from

			(35%, southern part) and freely draining slightly acid but base-rich soils (65%, north-eastern side)	Line of trees	Low	Lowland calcareous grassland	Created	Poor	High	5	or mowing for hay		residents adjacent to Bridge End Road and local PRoW, as well as screen the structures and reduce the perception of the Scheme from Badlingham.
				Native hedgerow	Low	Other woodland: broadleaved	Created/ Retained	Moderate	Medium	15			
				Lowland mixed deciduous woodland	High	Developed land; sealed surface	Created	N/A	V. Low	0			
				Vacant/derelict land/bare ground	Low	Lowland mixed deciduous woodland	Retained	Moderate	High				
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
						Line of trees	Retained	Moderate	Low				
						Native hedgerow	Retained	Moderate	Low				
E22	6.7	East B (Suffolk)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Lowland calcareous grassland (LBAP Habitat of Principal Importance)	Tree belts are proposed along the eastern edge to reduce the visibility from residents adjacent to Bridge End Road and local PRoW, as well as screen the structures and reduce the perception of the Scheme from Badlingham.
				Line of trees	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Lowland mixed deciduous woodland	High	Lowland calcareous grassland	Created	Good	High	10			
				Vacant/derelict land/bare ground	Low	Native hedgerow	Created	Good	Low	12			
				Lowland calcareous grassland	High	Developed land; sealed surface	Created	N/A	V. Low	0			
				Ponds	Medium	Native hedgerow	Created/ Retained	Moderate	Low	10			
				Other neutral grassland	Medium	Lowland mixed deciduous woodland	Retained	Moderate	High				
				Ruderal/Ephemeral	Low	Ponds	Retained	Moderate	High				
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
						Ruderal/Ephemeral	Retained	Moderate	Low				
						Lowland calcareous grassland	Retained	Moderate	High				
E24	7.5	East B (Suffolk)	Freely draining lime-rich loamy soils (80%) and freely draining slightly acid sandy	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for insect pollinators (B-Lines)	New woodland planting is proposed to the north and east of this parcel to screen the structures and reduce the perception of the scheme when
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			

			soils (20%, north-west corner)	Native hedgerow with trees	Medium	Developed land; sealed surface	Created	N/A	V. Low	0			travelling along Worlington Road.
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Native hedgerow with trees	Retained	Moderate	Medium				
						Native hedgerow	Retained	Moderate	Low				
E25	6.2	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for insect pollinators (B-Lines)	New woodland planting is proposed to the east and south of this parcel to screen the structures and reduce the perception of the scheme when travelling along Worlington Road.
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Native hedgerow with trees	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Native Hedgerow with trees	Retained	Moderate	Medium				
						Native hedgerow	Retained	Moderate	Low				
E26	5.2	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for pollinators insect (B-Lines). Sensitive management for Yellowhammer	
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Other neutral grassland	Medium	Developed land; sealed surface	Created	N/A	V. Low	0			
				Lowland mixed deciduous woodland	High	Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native hedgerow	Retained	Moderate	Low				
E27	6.7	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for pollinators (B-Lines). Sensitive management for Yellowhammer	
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Other neutral grassland	Medium	Developed land; sealed surface	Created	N/A	V. Low	N/A			
						Native hedgerow	Retained	Moderate	Low				
E28	5	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for insect pollinators (B-Lines). Sensitive management for Yellowhammer	
				Other neutral grassland	Medium	Lowland calcareous grassland	Created	Poor	High	5			

				Lowland mixed deciduous woodland	High	Developed land; sealed surface	Created	N/A	V. Low	0			
				Native hedgerow	Low	Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native hedgerow	Retained	Moderate	Medium				
E29	6.6	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for pollinators (B-Lines) Sensitive management for Yellowhammer	
				Lowland mixed deciduous woodland	High	Lowland calcareous grassland	Created	Poor	High	5			
				Other neutral grassland	Medium	Developed land; sealed surface	Created / Retained	V. Low	V. Low	N/A			
				Native hedgerow	Low	Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native hedgerow	Retained	Moderate	Medium				
E30	16.7	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Arable flora plots (pollen and nectar) (LBAP, Habitat of Principal Importance). Areas to be managed for arable weeds.	The woodland in the south-east has been retained for visual screening. Additional hedgerow and woodland planting are proposed adjacent to Golf Links Road to screen views for motorists and from views from the wider landscape to the north, as well as reduce the perception of the Scheme in relation to Worlington.
				Other coniferous woodland	Low	Lowland calcareous grassland	Created	Poor	High	5			
				Native hedgerow	Low	Native hedgerow: species rich	Created	Good	Medium	12			
						Arable field margins pollen and nectar	Created	Moderate	V.High	5			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Other coniferous woodland	Retained	Moderate	Low				
						Native hedgerow	Retained	Moderate	Low				
E31	25.9	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological site Mitigation - no construction	The woodland in the south has been retained for visual screening. Additional hedgerow and woodland planting are proposed adjacent to Golf Links Road to screen views for motorists and from views from the wider landscape to the north, as well as reduce the
				Other neutral grassland	Medium	Lowland calcareous grassland	Created	Poor	High	5			
				Native hedgerow	Low	Other neutral grassland	Created	Moderate	Medium	5			
						Other woodland: broadleaved	Created	Moderate	Medium	15			

						Developed land; sealed surface	Created	N/A	V. Low	0			perception of the Scheme in relation to Worlington.
						Native Hedgerow	Retained	Moderate	Low				
E32	4.7	East B (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological exclusion area Mixed scrub planting for Nightingale	The woodland in the south-east has been retained for visual screening. Additional hedgerow and woodland planting are proposed adjacent to Golf Links Road to screen views for motorists and from views from the wider landscape to the north, as well as reduce the perception of the Scheme in relation to Worlington.
				Native hedgerow	Low	Lowland calcareous grassland	Created	Poor	High	5			
						Lowland calcareous grassland	Created	Moderate	High	5			
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Native hedgerow	Retained	Moderate	Low				
E33		East A (Suffolk)	Freely draining slightly acid but base-rich soils (100%)	Vacant/derelict land/bare ground	Low	Other woodland: broadleaved	Created	Moderate	Medium	15		Archaeological exclusion area.	
				Native hedgerow	Low	Other neutral grassland	Created	Moderate	Medium	5			
						Other neutral grassland	Created	Poor	Medium	5			
						Lowland calcareous grassland	Created	Poor	High	5			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Other lowland acid grassland	Created	Good	Medium	15			
						Native hedgerow	Retained	Moderate	Low				
ECO1	40.1	East A (Cambridgeshire)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Lowland calcareous grassland	Created	Moderate	High	5	Conservation grazing (Low density, September – February).	Archaeological exclusion area. Sensitive management area for Stone-curlew (nesting plots), Skylark, Corn Bunting, Turtle Dove and Lapwing.	
				Native hedgerow with trees	Medium	Other woodland: broadleaved	Retained	Moderate	Medium				
				Native hedgerow	Low	Native hedgerow	Retained	Moderate	Low				
				Other woodland: broadleaved	Medium	Native hedgerow	Retained	Poor	Low				
						Native hedgerow with trees	Retained	Moderate	Medium				

ECO2	30.2	East A (Suffolk)	Freely draining lime-rich loamy soils (100%)	Cereal crops	Low	Lowland calcareous grassland	Created	Moderate	High	5	Conservation grazing (Low density, September – February).	Sensitive management for Stone-curlew (nesting plots) and Lapwing.	
				Native hedgerow	Low	Other coniferous woodland	Retained	Moderate	Low				
				Other coniferous woodland	Low	Native Hedgerow	Retained	Poor	Low				
						Native Hedgerow	Retained	Moderate	Low				
ECO3	59.4	East B (within Worlington Heath (CWS) and Badlingham Lane (CWS)) (Suffolk)	Freely draining sandy Breckland soils (50%, wetern), Freely draining slightly acid sandy soils (45%, eastern), freely draining slightly acid but base-rich soils (5%)	Cereal crops	Low	Other lowland acid grassland	Created	Good	Medium	15	Conservation grazing (Low density, September – February)	Sensitive management for Stone-curlew (nesting plots), Sylark and Lapwing. Worlington Heath (CWS). Lowland dry acid grassland (retention) (LBAP Habitat of principal importance). Areas of acid grassland from plot E13 will be translocated to ECO3.	Establishment of a substantial offset from Freckenham Road to reduce the perception of the solar panels and proximity to residents.
				Vacant/derelict land/bare ground	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Other neutral grassland	Medium	Native hedgerow: species rich	Created	Good	Medium	12			
				Line of Trees	Low	Urban Tree	Retained	Good	Low				
				Native hedgerow with trees	Medium	Lowland dry acid grassland	Retained	Good	V.High				
				Mixed scrub	Medium	Other neutral grassland	Retained	Good	Medium				
				Lowland dry acid grassland	V.High	Other neutral grassland	Retained	Poor	Medium				
				Native hedgerow	Low	Vacant/derelict land/bare ground	Retained	Moderate	Low				
				Other lowland acid grassland	Medium	Other woodland; mixed	Retained	Moderate	Medium				
				Modified grassland	Low	Line of trees	Retained	Moderate	Low				
				Other woodland; mixed	Medium	Native hedgerow with trees	Retained	Moderate	Medium				
				Urban Tree	Medium	Native Hedgerow	Retained	Moderate	Low				
ECO5	25.2	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Other lowland acid grassland	Created	Good	Medium	15		Archaeological exclusion area Sensitive management area for Skylark, Yellow wagtail, Linnet, Corn bunting.	New woodland planting to extend the existing belt a minimum width of approximately 65m to reinforce visual separation between parcel W03 and ECO5. Hedgerow proposed along the southern and eastern edge of ECO5
				Other woodland: mixed	Medium	Other lowland acid grassland	Created	Moderate	High	15			
				Lowland mixed deciduous woodland	High	Other woodland: broadleaved	Created / Retained	Moderate	Medium	15			

				Other neutral grassland	Medium	Native hedgerow: species rich	Created	Good	Medium	12			
				Native hedgerow	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
				Vacant/derelict land/bare ground	Low	Other woodland; mixed	Retained	Moderate	Medium				
				Other woodland; broadleaved	Medium	Lowland mixed deciduous woodland	Retained	Moderate	High				
						Native Hedgerow	Retained	Moderate	Low				
W03	24.7	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Other coniferous woodland	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological exclusion area Sensitive management area for Skylark, Yellow Wagtail, Linnet, Corn Bunting.	Siting the solar panels between woodland blocks and Foxburrow Plantation and reinforcing the vegetation patterns with new woodland planting to aid in screening this part of the Scheme from the wider landscape and retaining a physical separation from Chippenham Road and Snailwell.
				Modified grassland	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Native Hedgerow	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Lowland mixed deciduous woodland	High	Other lowland acid grassland	Created	Poor	Medium	10			
				Other neutral grassland	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Native hedgerow	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
				Other coniferous woodland	Low	Native hedgerow	Created/ Retained	Moderate	Medium	12			
				Vacant/derelict land/ bare ground	Low	Lowland mixed deciduous woodland	Retained	Moderate	High				
				Other woodland; mixed	Medium	Other woodland; mixed	Retained	Moderate	Medium				
						Other coniferous woodland	Retained	Moderate	Low				
W04	23.3	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological exclusion area Sensitive management area for Skylark	A temporary fence, rendered in a colour to aids its integration in the landscape will also be implemented in relation to views from Godolphin Gallops, until the establishment of the proposed planting. The solar panels have also been sited away from The Avenue so that new woodland can be implemented. Planting to enhance habitat connectivity and reinforce existing vegetation which
				Other neutral grassland	Medium	Other lowland acid grassland	Created	Good	Medium	15			
				Other woodland; mixed	Medium	Other lowland acid grassland	Created	Moderate	High	15			
				Lowland mixed deciduous woodland	High	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Native hedgerow	Low	Developed land; sealed surface	Created	N/A	V. Low	0			

				Vacant/derelict land/bare ground	Low	Lowland mixed deciduous woodland	Retained	Moderate	High				provides screening between the Snailwell Gallops and Parcel W04.
						Other woodland; mixed	Retained	Moderate	Medium				
						Native Hedgerow	Retained	Moderate	Low				
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
W05	30.1	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (55%) and shallow lime-rich soils over chalk or limestone (45%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	-	Siting the solar panels away from the Avenue so that new woodland can be implemented along the southern edges of the parcel, which is considered appropriate in the context of the Avenue and Chippenham Parl. There would also be a new woodland mix along the southern edge of the parcel which would include a higher percentage of evergreen species and a temporary fence, rendered in a suitable colour, to screen views from motorists on the A14.
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Other neutral grassland	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Lowland mixed deciduous woodland	High	Developed land; sealed surface	Created	N/A	V. Low	0			
				Other coniferous woodland	Low	Native hedgerow	Retained	Moderate	Low				
						Native hedgerow	Retained	Poor	Low				
						Lowland mixed deciduous woodland	Retained	Moderate	High				
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
						Other coniferous woodland	Retained	Moderate	Low				
W06	24.5	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (80%, north-east side) and shallow lime-rich soils over chalk or limestone (20%, south-west side)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Wide margins	New woodland planting to the east of the parcel, to reduce their visibility in longer distance views from The Limekilns, as well as provide new vegetation links across the landscape. The existing woodlands between parcels W06 and W07 has also been retained, with panels and associated infrastructure offset from the woodland.
				Other neutral grassland	Medium	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Lowland mixed deciduous woodland	High	Other lowland acid grassland	Created	Poor	Medium	10			
				Vacant/derelict land/bare ground	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Vacant/derelict land/bare ground	Retained	Moderate	Low				

						Native Hedgerow	Retained	Moderate	Low				
						Lowland mixed deciduous woodland	Retained	Moderate	High				
W07	25.1	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Archaeological exclusion area Managed for insect pollinators (B-Lines). Natural regeneration buffer around existing woodland to the north. Management to enhancement woodland (retained)	new woodland planting to the south of the parcel, to reduce their visibility. The existing woodlands between parcels W06 and W07 has also been retained, with panels and associated infrastructure offset from the woodland.
				Other coniferous woodland	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Other woodland; mixed	Medium	Other lowland acid grassland	Created	Moderate	High	15			
				Native hedgerow	Low	Other lowland acid grassland	Created	Poor	Medium	10			
				Other neutral grassland	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Developed land; sealed surface	V. Low	Developed land; sealed surface	Created/ Retained	N/A	V. Low	0			
						Arable field margins pollen and nectar	Created	Moderate	V.High	5			
						Other woodland; mixed	Retained	Moderate	Medium				
						Other coniferous woodland	Retained	Moderate	Low				
						Native Hedgerow	Retained	Poor	Low				
						Native Hedgerow	Retained	Moderate	Low				
W08	16.7	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Archaeological exclusion area Sensitive management for breeding birds: Yellow Wagtail, Twite, Skylark, Lapwing, Woodcock	Limiting the extent of the solar panels across this field, so as to respond positively to below ground archaeology. New native grassland would extend across the archaeological areas, to create a continuous sward of grassland with that which will be present under the panels. New hedgerow and woodland are proposed along the northern edge of this parcel to provide visual screening from La Hogue Road. New woodland is also proposed along the northern edge of W10, to provide visual screening from the same road and
				Other woodland; mixed	Medium	Other lowland acid grassland	Created	Good	Medium	10			
				Native hedgerow	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Modified grassland	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Mixed scrub	Created	Moderate	Medium	10			
						Purple moor grass and rush pasture	Created	Moderate	V.High	30			

						Urban Tree	Created	Good	Low	15			reinforce the existing vegetation patterns.
						Native hedgerow	Retained	Moderate	Low				
						Other woodland; mixed	Retained	Moderate	Medium				
W09	8.5	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Archaeological exclusion area Managed for insect pollinators (B-Lines). Arable field plots (pollen and nectar). (LBAP Habitat of principal importance). Areas to be managed for arable weeds. Sensitive management for breeding birds (nesting and foraging area): Skylark, Woodcock, Linnet, Barn Owl, Corn bunting	Limiting the extent of the solar panels across this field, so as to respond positively to below ground archaeology. New native grassland would extend across the archaeological areas, to create a continuous sward of grassland with that which will be present under the panels.
				Other neutral grassland	Medium	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Developed land: sealed surface	V. Low	Other lowland acid grassland	Created	Poor	Medium	10			
				Ruderal/Ephemeral	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
				Vacant/derelict land/bare ground	Low	Native hedgerow: species rich	Created	Good	Medium	12			
						Arable field margins pollen and nectar	Created	Moderate	V.Low	0			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Arable field margins game bird mix	Created	Moderate	V.High	5			
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
						Native Hedgerow	Retained	Poor	Low				
						Native hedgerow	Retained	Moderate	Low				
W10	14.7	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Sensitive management for breeding birds: Lapwing, Woodlark, Yellow Wagtail, Twite.	New hedgerow and woodland are proposed along the northern edge of this parcel to provide visual screening from La Hogue Road. New woodland is also proposed along the northern edge of W10, to provide visual screening from the same road and reinforce the existing vegetation patterns.
				Modified grassland	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Other woodland; mixed	Medium	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Native hedgerow: species rich	Created	Good	Medium	12			
						Urban Tree	Created	Good	Medium	15			

						Mixed scrub	Created	Moderate	Medium	10			
						Purple moor grass and rush pasture	Created	Moderate	V.High	30			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Other woodland; mixed	Retained	Moderate	Medium				
						Native hedgerow	Retained	Moderate	Low				
W11	15.3	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	General grazing (March-August) or mowing for hay	Sensitive management area (75m wide) for: Skylark, Yellowhammer, Linnet, Corn Bunting.	Grassland and hedgerow planting to create a buffer up to 75m wide between parcels W11 and La Hogue Road.
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Lowland mixed deciduous woodland	High	Other lowland acid grassland	Created	Moderate	High	15			
						Native hedgerow: species rich	Created	Good	Medium	12			
						Other woodland: broadleaved	Created	Moderate	Medium	15			
						Developed land; sealed surface	Created	N/A	V. Low	0			
						Native hedgerow	Created	Moderate	Medium	12			
						Lowland mixed deciduous woodland	Retained	Moderate	High				
W12	18.3	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Sensitive management area (75m wide) for: Skylark, Yellowhammer, Linnet, Corn Bunting.	
				Native hedgerow	Low	Other lowland acid grassland	Created	Good	Medium	15			
				Developed land; sealed surface	V. Low	Other lowland acid grassland	Created	Moderate	High	15			
						Native hedgerow: species rich	Created	Good	Medium	12			
						Developed land; sealed surface	Created/ Retained	N/A	V. Low	0			
						Native Hedgerow	Retained	Moderate	Low				
W15	46.4	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Modified grassland*	Created	Moderate	Low	4	Conservation grazing (Low density, September – February)	Managed for insect pollinators (B-Lines, only the south of the plot).	The solar panels have been offset from the watercourse, along with the retention of the riverside trees and vegetation and road networks. New woodland
				Modified grassland	Low	Other lowland acid grassland	Created	Good	Medium	15			

				Ruderal/Ephemeral	Low	Other woodland: broadleaved	Created / Retained	Moderate	Medium	15		Foraging habitat for Skylark around the plot (arable field retained out of Order Limits)	is proposed around the perimeter of the parcels to screen the Scheme, as well as to soften views of the A11 from Kennett and increase the vegetation.
				Native hedgerow with trees	Medium	Native hedgerow: species rich	Created	Good	Medium	12			
				Vacant/derelict land/bare ground	Low	Developed land; sealed surface	Created	N/A	V. Low	0			
				Native Hedgerow	Low	Native Hedgerow	Retained	Moderate	Low				
						Native hedgerow with trees	Retained	Moderate	Medium				
W17	8.9	West A (Cambridgeshire)	Freely draining slightly acid but base-rich soils (100%)	Cereal crops	Low	Developed land; sealed surface	Created	N/A	V. Low	0	General grazing (March-August) or mowing for hay	-	Proposed woodland to the east, south and west edges.
				Lowland mixed deciduous woodland	High	Other lowland acid grassland	Created	Good	Medium	15			
				Native hedgerow	Low	Other lowland acid grassland	Created	Moderate	High	15			
				Vacant/derelict land/bare ground	Low	Other woodland: broadleaved	Created	Moderate	Medium	15			
						Vacant/derelict land/bare ground	Retained	Moderate	Low				
						Native hedgerow	Retained	Moderate	Low				

*95% Modified Grassland 5% Developed land: Sealed Surface

Annex C Hedgerow and woodland species

Table C1. Indicative hedgerow, mixed shrubs and individual tree species

Species	National Character Areas	Common Name	Latin Name	Root Condition	Height (cm)	Notes
Trees	East Anglian Chalk (NCA 87)	Beech	*Fagus sylvatica*	Bare root (2x)	150-175	Holds leaves into winter and is characteristic of the thin soils around Newmarket and associated with the landscape around Chippenham Park
		Pedunculate Oak	*Quercus robur*	Bare root (2x)	150-175	Climax species with broad, dense canopy.
Shrubs	East Anglian Chalk (NCA 87)	Buckthorn	*Rhamnus cathartica*	Bare root	40-60	Bushy shrub or small tree with white flowers and black fruit
		Dog rose	*Rosa canina*	Bare root	60-80	Thorny climber with large pink flowers and orange hips.
		Field Maple	*Acer campestre*	Bare root	40-60	Fast growing, dense shrub with distinctive autumn colour
		Guelder rose	*Viburnum opulus*	Bare root	40-60	Larger shrub with sprays of flowers and distinctive autumn colour and berries
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter

Species	National Character Areas	Common Name	Latin Name	Root Condition	Height (cm)	Notes
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
		Spindle	*Euonymus europaeus*	Bare root	40-60	Vigorous shrub with distinctive autumn colour and fruits.
		Wild privet	*Ligustrum vulgare*	Bare root	40-60	Semi-evergreen shrub
	The Brecks (NCA 85)	Blackthorn	*Prunus spinosa*	Bare root	40-60	Dense, thorny shrub, flowers early and produces prolific dark blue sloes.
		Dog rose	*Rosa canina*	Bare root	60-80	Thorny climber with large pink flowers and orange hips.
		Field Maple	*Acer campestre*	Bare root	40-60	Fast growing, dense shrub with distinctive autumn colour
		Guelder rose	*Viburnum opulus*	Bare root	40-60	Larger shrub with sprays of flowers and distinctive autumn colour and berries
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
		Spindle	*Euonymus europaeus*	Bare root	40-60	Vigorous shrub with distinctive autumn colour and fruits.
		Wild privet	*Ligustrum vulgare*	Bare root	40-60	Semi-evergreen shrub

Table C2. Indicative woodland planting

Species	National Character Areas	Common Name	Latin Name	Root Condition	Height (cm)	Notes
Trees	East Anglian Chalk (NCA 87)	Beech	*Fagus sylvatica*	Bare root	40-60	Holds leaves into winter and is characteristic of the thin soils around Newmarket and associated with the landscape around Chippenham Park
		Hornbeam	*Carpinus betulus*	Bare root	40-60	Similar to beech in form and habit, less susceptible to climate change
		Pedunculate Oak	*Quercus robur*	Cell grown	40-60	Climax species with broad, dense canopy.
	The Brecks (NCA 85)	Black Pine	*Pinus nigra*	Bare root	40-60	In small quantities, to increase resilience to retain pine line character
		Hornbeam	*Carpinus betulus*	Bare root	40-60	Similar to beech in form and habit, less susceptible to climate change
		Pedunculate Oak	*Quercus robur*	Cell grown	40-60	Climax species with broad, dense canopy.
		Scots Pine	*Pinus sylvestris*	Bare root	40-60	Evergreen. Requires adequate space to allow larger shrubs to thrive underneath
		Silver Birch	*Betula pendula*	Bare root	40-60	Pioneer species with distinctive bark
	The Fens (NCA 46)	Alder	*Alnus glutinosa*	Bare root	40-60	Tolerates moist or wet soils
		White Willow	*Salix alba*	Bare root	60-80	Vigorous, tolerates coppicing and moist or wet soils
Shrubs	East Anglian Chalk (NCA 87)	Buckthorn	*Rhamnus cathartica*	Bare root	40-60	Bushy shrub or small tree with white flowers and black fruit
		Dog rose	*Rosa canina*	Bare root	60-80	Thorny climber with large pink flowers and orange hips.

Species	National Character Areas	Common Name	Latin Name	Root Condition	Height (cm)	Notes
		Field Maple	*Acer campestre*	Bare root	40-60	Fast growing, dense shrub with distinctive autumn colour
		Guelder rose	*Viburnum opulus*	Bare root	40-60	Larger shrub with sprays of flowers and distinctive autumn colour and berries
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
		Spindle	*Euonymus europaeus*	Bare root	40-60	Vigorous shrub with distinctive autumn colour and fruits.
		Wild privet	*Ligustrum vulgare*	Bare root	40-60	Semi-evergreen shrub
	The Brecks (NCA 85)	Blackthorn	*Prunus spinosa*	Bare root	40-60	Dense, thorny shrub, flowers early and produces prolific dark blue sloes. Woodland edges
		Common Gorse	*Ulex europaeus*	Bare root	40-60	Grows well dry, sandy acid soils. Prolific yellow flowers.
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Heather	*Calluna vulgaris*	Container grown (1L)	30-40	Low heathland shrub, acid soils
		Holly	*Ilex aquifolium*	Container grown (1L)	30-40	Evergreen shrub, thrives in shade.

Species	National Character Areas	Common Name	Latin Name	Root Condition	Height (cm)	Notes
	The Fens (NCA 46)	Blackthorn	*Prunus spinosa*	Bare root	40-60	Dense, thorny shrub, flowers early and produces prolific dark blue sloes. Woodland edges
		Dogwood	*Cornus sanguinea*	Bare root	40-60	Vibrant aumtn stem colour, woodland edges
		Elder	*Sambucus nigra*	Bare root	40-60	Berries ripen late summer to autumn
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
		Spindle	*Euonymus europaeus*	Bare root	40-60	Vigorous shrub with distinctive autumn colour and fruits.
		Wild privet	*Ligustrum vulgare*	Bare root	40-60	Semi-evergreen shrub

Table C3. Indicative linear belts of trees and shrubs species

Species	National Character Area	Common Name	Latin Name	Root Condition	Height (cm)	Notes
Trees	East Anglian Chalk (NCA 87)	Beech	*Fagus sylvatica*	Bare root	40-60	Holds leaves into winter and is characteristic of the thin soils around Newmarket and associated with the landscape around Chippenham Park
		Hornbeam	*Carpinus betulus*	Bare root	40-60	Similar to beech in form and habit, less susceptible to climate change
		Pedunculate Oak	*Quercus robur*	Cell grown	40-60	Climax species with broad, dense canopy.
	The Brecks (NCA 85)	Black Pine	*Pinus nigra*	Bare root	40-60	In small quantities, to increase resilience to retain pine line character
		Downy Birch	*Betula pubescens*	Bare root	40-60	Pioneer species grows well on thin soils
		Pedunculate Oak	*Quercus robur*	Cell grown	40-60	Climax species with broad, dense canopy.
		Scots Pine	*Pinus sylvestris*	Bare root	40-60	Evergreen. Requires adequate space to allow larger shrubs to thrive underneath
		Alder	*Alnus glutinosa*	Bare root	40-60	Tolerates moist or wet soils

Species	National Character Area	Common Name	Latin Name	Root Condition	Height (cm)	Notes
	The Fens (NCA 46)	White Willow	*Salix alba*	Bare root	60-80	Vigorous, tolerates coppicing and moist or wet soils
Shrubs	East Anglian Chalk (NCA 87)	Blackthorn	*Prunus spinosa*	Bare root	40-60	Dense, thorny shrub, flowers early and produces prolific dark blue sloes.
		Buckthorn	*Rhamnus cathartica*	Bare root	40-60	Bushy shrub or small tree with white flowers and black fruit
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
	The Brecks (NCA 85)	Blackthorn	*Prunus spinosa*	Bare root	40-60	Dense, thorny shrub, flowers early and produces prolific dark blue sloes.
		Broom	*Cytisus scoparius*	Bare root	40-60	Establishes well in dry, sandy acid soils with prolific yellow flowers
		Common honeysuckle	*Lonicera periclymenum*	Container grown (3L)	60	Nectar-rich source, important to Breckland moths

Species	National Character Area	Common Name	Latin Name	Root Condition	Height (cm)	Notes
		Elder	*Sambucus nigra*	Bare root	40-60	Berries ripen late summer to autumn
		Guelder rose	*Viburnum opulus*	Bare root	40-60	Larger shrub with sprays of flowers and distinctive autumn colour and berries
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
		Hornbeam	*Carpinus betulus*	Bare root	40-60	Similar to beech in form and habit, less susceptible to climate change
	The Fens (NCA 46)	Blackthorn	*Prunus spinosa*	Bare root	40-60	Dense, thorny shrub, flowers early and produces prolific dark blue sloes.
		Dog rose	*Rosa canina*	Bare root	40-60	Thorny climber with large pink flowers and orange hips.
		Field Maple	*Acer campestre*	Bare root	40-60	Fast growing, dense shrub with distinctive autumn colour

Species	National Character Area	Common Name	Latin Name	Root Condition	Height (cm)	Notes
		Guelder rose	*Viburnum opulus*	Bare root	40-60	Larger shrub with sprays of flowers and distinctive autumn colour and berries
		Hawthorn	*Crataegus monogyna*	Bare root	40-60	Flowers in late spring and holds berries into winter
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing
		Spindle	*Euonymus europaeus*	Bare root	40-60	Vigorous shrub with distinctive autumn colour and fruits.
		Wild privet	*Ligustrum vulgare*	Bare root	40-60	Semi-evergreen shrub

Table C4. Indicative Pine Line species including trees and shrubs

Species	National Character Area	Common Name	Latin Name	Root Condition	Height (cm)	Notes
Trees	The Brecks (NCA 85)	Black Pine	*Pinus nigra*	Root balled (3x)	150-175	In small quantities, to increase resilience to retain pine line character
		Downy Birch	*Betula pubescens*	Bare root (2x)	150-175	Pioneer species grows well on thin soils
		Pedunculate Oak	*Quercus robur*	Bare root (2x)	150-175	Climax species with broad, dense canopy.
		Scots Pine	*Pinus sylvestris*	Root balled (3x)	150-175	Evergreen. Requires adequate space to allow larger shrubs to thrive underneath
Shrubs		Broom	*Cytisus scoparius*	Bare root	40-60	Establishes well in dry, sandy acid soils with prolific yellow flowers
		Common Gorse	*Ulex europaeus*	Bare root	40-60	Grows well dry, sandy acid soils. Prolific yellow flowers.
		Common honeysuckle	*Lonicera periclymenum*	Container grown (3L)	60	Nectar-rich source, important to Breckland moths
		Elder	*Sambucus nigra*	Bare root	40-60	Berries ripen late summer to autumn

Species	National Character Area	Common Name	Latin Name	Root Condition	Height (cm)	Notes
		Field Maple	*Acer campestre*	Bare root	40-60	Fast growing, dense shrub with distinctive autumn colour
		Guelder rose	*Viburnum opulus*	Bare root	40-60	Larger shrub with sprays of flowers and distinctive autumn colour and berries
		Hazel	*Corylus avellana*	Bare root	40-60	Typically multi-stemmed and managed through coppicing

Annex D Sunnica Soil Types

Lime-rich loamy and clayey soils with impeded drainage

Loamy and sandy soils with naturally high groundwater and a peaty surface

Fen peat soils

Shallow lime-rich soils over chalk or limestone

Fen peat soils

Freely draining slightly acid but base-rich soils

Freely draining sandy Breckland soils

Freely draining lime-rich loamy soils

Freely draining lime-rich loamy soils

Freely draining slightly acid sandy soils

Fen peat soils

Restored soils mostly from quarry and opencast spoil

Shallow lime-rich soils over chalk or limestone

Fen peat soils

Freely draining slightly acid but base-rich soils

0 0.4 0.8 1.2 1.6 2km

N

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

The Order Limits

Purpose of Issue

FOR INFORMATION

Client

SUNNICA LTD

Project Title

sunnica energy farm

Drawing Title

ANNEX E
DISTRIBUTION OF SOIL TYPES

Drawn	Checked	Approved	Date
--	--	--	13/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:40,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number

Rev 0

File Name:W:\Active Projects\Solar Associates\GIS\02_Maps\SEF_xxx_Soils.mxd

Annex E Outline Historic Environmental Management Plan

Outline Historic Environment Management Plan

Planning Act 2008 Infrastructure Planning (Examination Procedure) Rules 2010

13 September 2023

Revision 0~~2~~3

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

Sunnica Energy Farm

Outline Historic Environment Management Plan

Planning Inspectorate Scheme Reference	EN010106
Application Document Reference	EN010106/APP/8.75
Author	Sunnica Energy Farm Project Team

Version	Date	Status of Version
Rev 00	13 January 2023	Deadline 5
Rev 01	3 March 2023	Deadline 7
Rev 02	24 March 2023	Deadline 10
Rev 03	13 September 2023	Submitted in response to SoS information request of 23 August 2023

Executive summary

This document is the Outline Historic Environment Management Plan (OHEMP) for the Sunnica Energy Farm. Powers to define, construct and maintain ten Archaeological Protection Areas (APAs) within the wider scheme (Figure 1) are being sought by Sunnica through an application for a Development Consent Order (DCO).

The APAs are defined areas that have been removed from development because they contain significant archaeological remains initially identified through geophysical survey **[APP-062]**. The APAs will be protected from any impact during the construction phase, operation phase and during the decommissioning works of the Scheme and as such are one of the embedded mitigation measures identified by the ES **[APP-039]**.

The OHEMP provides outline information on measures relating to the protection during the construction phase, operation phase and during the decommissioning works for the Scheme. These have been defined by the requirements which arise from the technical assessments presented in the ES, together with ongoing design development and stakeholder feedback.

The OHEMP provides information on the project team roles and defines the responsibilities associated with the Scheme.

The OHEMP is a living document that is required be regularly updated, with APA specific HEMP method statements (HEMPMS) by the Archaeological Clerk of Works (ACOW) in consultation with the relevant Consultees (as identified in this document) during the construction phases.

Figures

1 Introduction

1.1 Purpose of the report

1.1.0 This document is the Outline Historic Environment Management Plan (OHEMP) for the Sunnica Energy Farm. Powers to define, construct and maintain ten Archaeological Protection Areas (APAs) within the wider scheme (Figure 1) are being sought by Sunnica through an application for a Development Consent Order (DCO).

1.1.1 An Environmental Impact Assessment (EIA) has been undertaken for the Scheme and an Environmental Statement **[APP 039]** has been prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations). In accordance with the requirements of the EIA Regulations, the ES contains the assessment of the potential impacts on the environment that may be caused during construction, operation and maintenance of the Scheme on the archaeological resource.

1.1.2 Ten APAs, see Appendix A, have been identified in consultation with the Historic Environment Teams for Cambridgeshire County Council, Suffolk County Council and Historic England. The APAs are defined areas that contain significant archaeological remains initially identified through geophysical survey **[APP-062]** within the wider Scheme. The APAs will be protected from any impact during the construction phase, operation phase and during the carrying out of decommissioning works of the Scheme and as such are one of the embedded mitigation measures identified by the ES **[APP-039]**. An overview of the APAs is shown on Figures 1 – 3 with detailed plans for each area on Figures 4-13.

1.1.3 The establishment of the APAs shall be subject to measures and procedures defined within Heritage Environmental Management Plan Method Statements (HEMPMS) prepared for the relevant phase of work that may affect the APA, as set out in the LEMP. The measures defined in the HEMPMS will be applied by the contractors as stipulated in the relevant parts of the OHEMP with the aim of controlling potential impacts upon the natural and historic environment.

1.1.4 All contractors will be required to comply with applicable environmental legislation together with any additional environmental controls imposed in the DCO. For this reason, the applicable statutory requirements are not stated within this OHEMP.

1.1.5 The measures to be implemented in specific areas, such as fencing, are set out in each discipline section of this OHEMP.

1.1.6 For the purposes of the OHEMP, the following definitions apply:

a. The Client – Sunnica Ltd, or their representative (hereafter referred to as the Client's representative).
b. The Principal Contractor (i.e., the construction contractor for the Scheme).
c. Archaeological Clerk of Works (ACoW) (as appointed by the Client).
d. Archaeological Contractor (as appointed by the Client).

e. Historic England (in respect of the APA number APA W09 only) and Cambridgeshire County Council Historic Environment Team and Suffolk County Council Historic Environment Team (for all other APAs) are the statutory consultees for the purposes of the development of the OHEMP throughout the construction of the Scheme and shall collectively be known as the Consultees. References to consultation with the Consultees means consultation with each of those organisations. The Consultees will advise Sunnica on evaluation, assessment and mitigation on matters pertaining to the Archaeological APAs.

2 Project team roles and responsibilities

2.1 Site roles and responsibilities

2.1.1 The project team roles will be defined in the HEMPMS and will include the responsibilities associated with the roles for construction phase, operation phase and the decommissioning works.

3 Archaeological Protection Areas (APA)

3.1 Construction Phase

3.1.1 Ten APAs have been identified that require preservation of archaeological remains. The APAs will require protective fencing to prevent unintended incursion/damage by plant or other vehicles during construction (Entire Field EC01 and locations within Fields E09, E18, E31, E32, E33 (ES Figure 3.1)) and an area relating to an aircraft crash crater in E05 and locations to the northeast of field W04, south of Field W09 and within Fields W08 and W07 (ES Figure 3.2).

3.2 Roles and Responsibilities during Construction

3.2.1 The HEMPMS for the APAs during construction will be submitted as part of the CEMP for the phase in which the APA sits.

3.2.2 It will be prepared by the archaeological contractor following engagement with the landscape specialist and ecological clerk of works for that phase of works.

3.2.3 The draft HEMPMS for the APAs during construction will be reviewed by the Archaeological Clerk of Works (ACoW) who will be appointed by the Client. The ACoW will be responsible for ensuring that monitoring of the performance of the ACoW is carried out and considering whether any updates are required whilst construction is carried out.

3.3 APA W09 Scheduled Monument NHLE 1015246 Chippenham Barrow Group.

3.3.1 A Scheduled Monument (NHLE 105246) comprising a series of earthworks of the Chippenham Barrow Group is located in Field W09. Scheduled monuments are nationally important monuments that have been afforded statutory protection through their inclusion in the Schedule of monuments maintained under section 1 of the Ancient Monuments and Archaeological Areas Act 1979.

3.3.2 The monument currently has class consent for agricultural works under the Ancient Monuments (Class Consents) Order 1994. This enables existing agricultural operations to continue under Class 1 Consent. These operations can cause damage to the buried archaeological remains. Class Consent is lost after the activity concerned has ceased for a period of six years or longer. After this period Scheduled Monument Consent is required for the activity to resume.

3.3.3 The Sunnica Energy Farm will be in operation for a period of 40 years; therefore, the Class 1 Consent will be lost. The removal of the consent will remove the risk to the scheduled monument from damage resulting from agricultural activities, thus the management of the monument will be improved.

3.3.4 The HEMPMS will provide long term management strategies for the monument to sustain it for the lifetime of the Scheme. This will be based on a detailed understanding of the monument in its current state, to be presented in the HEMPMS.

3.3.5 The strategy will include, methodologies for constructing initial rabbit proof fencing around the whole of APAW09 for the lifetime of the Scheme, inspection regimes and long-term maintenance plans. These will be formulated with consideration of

the Class Consent Order 1994 and ~~in consultation~~be agreed with Historic England prior to inclusion in the construction HEMPMS for APAW09.

3.4 Stone Curlew Mitigation Areas (EC01,EC02,EC03) (Figure 4)

3.4.1 These areas are currently under cultivation which the scheme seeks to revert to grassland within which ten curlew nesting plots will be established.

3.4.2 APA07 (EC01) in Sunnica East A contains a significant area of archaeological remains. The offsetting areas (ECO1, ECO2 and EC03) will be sown with a chalk grassland mix (with calcareous species) and managed specifically for Stone-curlew, i.e. maintaining a close-cropped sward. To create the grassland outside the nesting plots, the surface would receive a light harrowing followed by sowing of the seeds across the existing surface The bare earth nesting plots will be retained within these established grassland areas for the lifespan of the project. The reversion to grassland is in accordance with guidance and best practice for the protection of archaeological sites in arable land (See Appendix B guidance). Further details of establishment methodology are included in the OLEMP Section 5. Annual management of the Curlew Plots and surrounding grassland is proposed for the duration of the Scheme Operation. This requires minimal ground disturbance as detailed in the Offsetting Habitat Provision for Stone-Curlew Specification. During Years 0-5 the grassland would be mown 2-4 times during growing season, with a single autumn cut. Targeted weeding would be undertaken where necessary. During years 5+ the grassland would be used for low intensity grazing by sheep. The long- term maintenance activities will not impact archaeological remains.

3.4.3 EC01 and EC02 have be subject to archaeological evaluation including targeted trench evaluation within proposed curlew nesting plots in agreement with the Suffolk County Council and Cambridgeshire County Council (APP 075 and App 076). Archaeological evaluation trenching has not yet been undertaken in EC03 but this will be required for proposed plots during Post-Consent and subject to a brief from Suffolk County Council. This will take place prior to the creation of the stone curlew mitigation areas.

3.4.4 Methodologies for constructing initial rabbit proof fencing around the whole of APAW04, inspection regimes and long-term maintenance will be formulated with consideration of the Class Consent Order 1994 and in consultation with the LPA prior to inclusion in the HEMPMS for APAW07.

3.5 APA Protective fencing

3.5.1 In order to demarcate the APA's that require protection and to avoid unintentional damage during construction, initial temporary hi-visibility fencing followed by secure timber fencing will be installed. The permanent fencing will be installed by a fencing contractor under the supervision of the Archaeological Contractor. The fence will need to be buried about 25 cm deep into the ground. Signs will inform all parties of the protected designation of the site and to "keep out".

3.5.2 The location and type (e.g Rabbit proof) of fencing for each site for preservation of archaeological remains will be set out in a HEMPMS prepared by the ACoW, to be submitted as part of the CEMP for the phase in which the APA in question sits. The HEMPMS for ECO1 will explain how the fencing proposals have taken

account of the proposals for anti-predator fencing / stock proof fencing that is also proposed in this area.

3.5.3 The Archaeological Contractor and the Clients ACoW will be responsible for regularly monitoring the fence installation subject to a brief by Suffolk County Council and Cambridgeshire County Council..

3.5.4 Notices prohibiting works will be attached to the fencing, detailing the purpose of the fenced off area. This is to ensure that no impacts are made to the remains which are being protected. These areas should **not** be used for any Scheme works.

3.5.5 The ACoW will give Tool Box Talks to inform all site personnel of the archaeological and historic environment constraints on site, recognition of archaeological deposits, the protection measures that are required and their obligations under this OHEMP and any further HEMPMS, and generally to ensure that these are put in place and complied with.

3.6 Long-Term Management of the APAs (Operation Phase)

3.6.1 The HEMPMS will detail the long-term measures agreed with the Client that seek to protect the identified archaeological interest and the broad approaches that will be applied to future management measures during the operational phase of works.

3.6.2 The HEMPMS will indicate how the historic environment (relevant to the phase of works) is to be protected and managed in a consistent and integrated manner by the Operating Body, coordinated with all other relevant environmental topics in accordance with current guidance and best practice (See Appendix B). The HEMPMS shall address:

a. The long-term management proposals for each APA, including vegetation type and how this will be managed alongside the other aims of the LEMP.

b. Details of fencing and gates

c. Methods of routine maintenance

d. For the scheduled barrow cemetery (See Section 3.3) and in consultation with Historic England, details of long-term management during the operation of the Scheme.

3.6.3 The HEMPMS for APAW07 and APAW09 will include details on how the grass sward within the monument is to be maintained and subject to the results of a survey to inspect the current status of impact by burrowing animals , methods for excluding and monitoring their effects (with consideration of the 1992 Badgers Act) along with contingency scenarios. The HEMPMS for APAW04 will also contain a programme for inspection intervals of perimeter fencing and the site itself.

3.6.4 The HEMPMS for APAW09 must also commit to a series of management measures to improve the protection of the Scheduled Monument throughout the life of the Proposed Scheme. The content of the draft operation phase HEMPMS for APAW09 will be ~~consulted upon~~agreed with Historic England before inclusion within the final HEMPMS. This will happen prior to any permitted preliminary works being undertaken.

3.6.5 The HEMPMS for the operational phase will seek to achieve the following aims:

a. **Protecting, Respecting and Responding to the Historic Landscape.** The APAs should take full account of the character of the historic landscape in which they sit.

b. **User experience and safety.** The APAs should improve the understanding of the archaeological landscape to local communities including interpretation boards and access arrangements for the purposes of research, where appropriate and practical, and consistent with the measures taken forward pursuant to the Detailed Archaeological Management Strategy and detailed LEMPs.

3.6.6 For the operational phase, this HEMPMS for each APA will be submitted alongside the detailed LEMP for the relevant phase in which the APA in question is located

3.7 Decommissioning Works

3.7.1 Updated HEMPMS will be submitted as part of the Decommissioning Environmental Management Plan to demonstrate how the APAs will be protected during decommissioning works for the Scheme; to be consistent with the principles of the construction phase set out in this OHEMP.

Figures

560000

570000

270000

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Protection Area
- Archaeological Mitigation Area
- Chippenham Barrow Group
- Developable Area

Sheet Layout

Purpose of Issue

HERITAGE ENVIRONMENTAL MANAGEMENT PLAN

Client

SUNNICA LTD

Project Title

sunnica energy farm

Drawing Title

FIGURE 1. OVERVIEW OF SCHEME AND ARCHAEOLOGICAL PROTECTION AREAS (APA'S)

Drawn	Checked	Approved	Date
HW	LL	NC	11/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:600,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

AECOM

Drawing Number: 60589004_DCO_GPHS_100

Rev: 0

0 1 2 3 4Kilometers

N

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_AreasMaps\230104_SunnicaEnergyFarm_HEMPS\230109_SunnicaEnergyFarm_OverflewFigure.mxd

560000

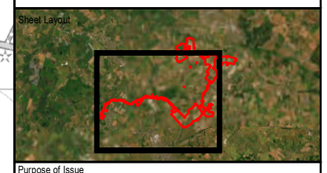
270000

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Protection Area
- Archaeological Mitigations Area
- Chippenham Barrow Group
- Developable

Sheet Layout



Purpose of Issue

HERITAGE ENVIRONMENTAL MANAGEMENT PLAN

Client

SUNNICA LTD

Project Title

sunnica energy farm

Drawing Title

FIGURE 2. OVERVIEW OF SUNNICA WEST APA'S

Drawn	Checked	Approved	Date
HW	LL	NC	06/01/2023

AECOM Internal Project No.: 60589004

Scale @ A3: 1:34,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number: 60589004_DCO_GPHS_100

Rev: 0

0 1 2 3 4Kilometers

560000

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_Areas\Maps\230104_SunnicaEnergyFarm_HEMPS\220803_SunnicaEnergyFarm_OverflewFigureWest.mxd

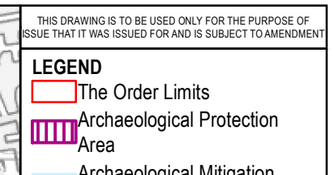
570000

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Protection Area
- Archaeological Mitigation Area
- Developable Area

Sheet Layout



Purpose of Issue
HERITAGE ENVIRONMENTAL MANAGEMENT PLAN

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 3. OVERVIEW OF SUNNICA EAST APA'S

Drawn	Checked	Approved	Date
HW	LL	NC	09/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:20,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number	Rev
60589004_DCO_GPHS_100	0

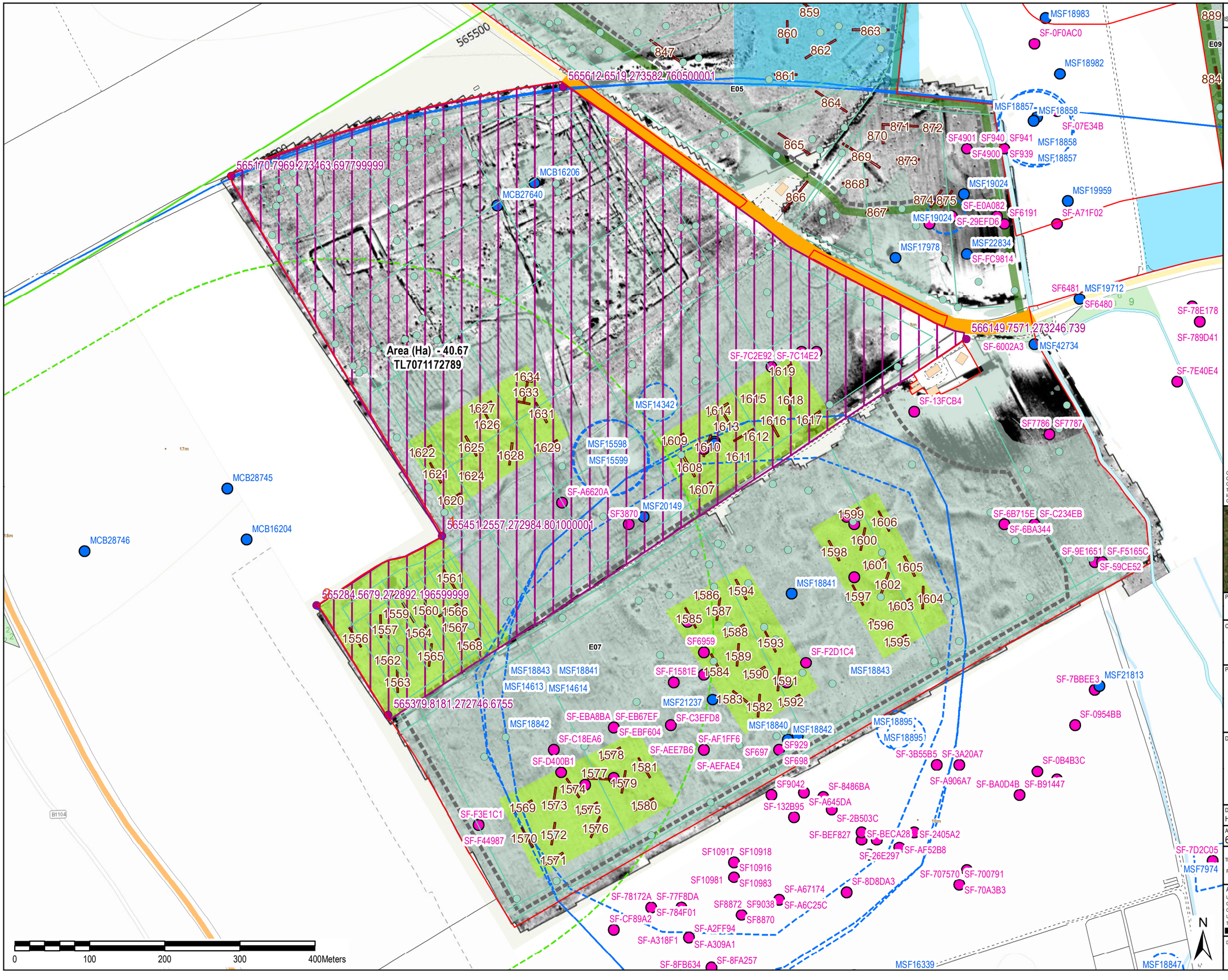
N

0 0.5 1 1.5 2Kilometers

270000

570000

File Name:\\eu.aecomnet.com\UK\UKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_AreasMaps\230104_SunnicaEnergyFarm_HEMPS\230109_SunnicaEnergyFarm_OverflewFigure1.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Mitigation Area
- Archaeological Protection Area
- Stone Curlew Mitigation Area
- PAS Find - Point
- HER Monument - Point
- HER Event - Line
- HER Event - Area
- HER Monument - Line
- HER Monument - Area
- Trench
- Deposits
- Interventions
- Public Highway within Scheme
- Geophysical Interpretation (Point)
- Geophyscial Interpretation (Line)
- Geophyscial Interpretation (Area)

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 4. APA E07

Drawn	Checked	Approved	Date
HW	LL	NC	02/03/2023

AECOM Internal Project No. 60589004
Scale @ A3 1:4,600

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number: 60589004_DCO_GPHS_100
Rev: 0

File Name:C:\Users\WaggonH\Documents\230105_Sunnica HEMPs Figure E07.mxd

LEGEND

- The Order Limits
- Archaeological Mitigation Area
- Archaeological Protection Area
- HER Monument - Line
- Trench

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 5. APA E09

Drawn	Checked	Approved	Date
HW	LL	NC	03/01/2023

AECOM Internal Project No.: 60589004
Scale @ A3: 1:400

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number: 60589004_DCO_GPHS_100
Rev: 0

901 908 917 918 929 928 927 926 907 919 920 922

566637.5338,273543.952400001
566694.4194,273544.2831
566637.8646,273492.027799999
566694.7501,273491.697000001

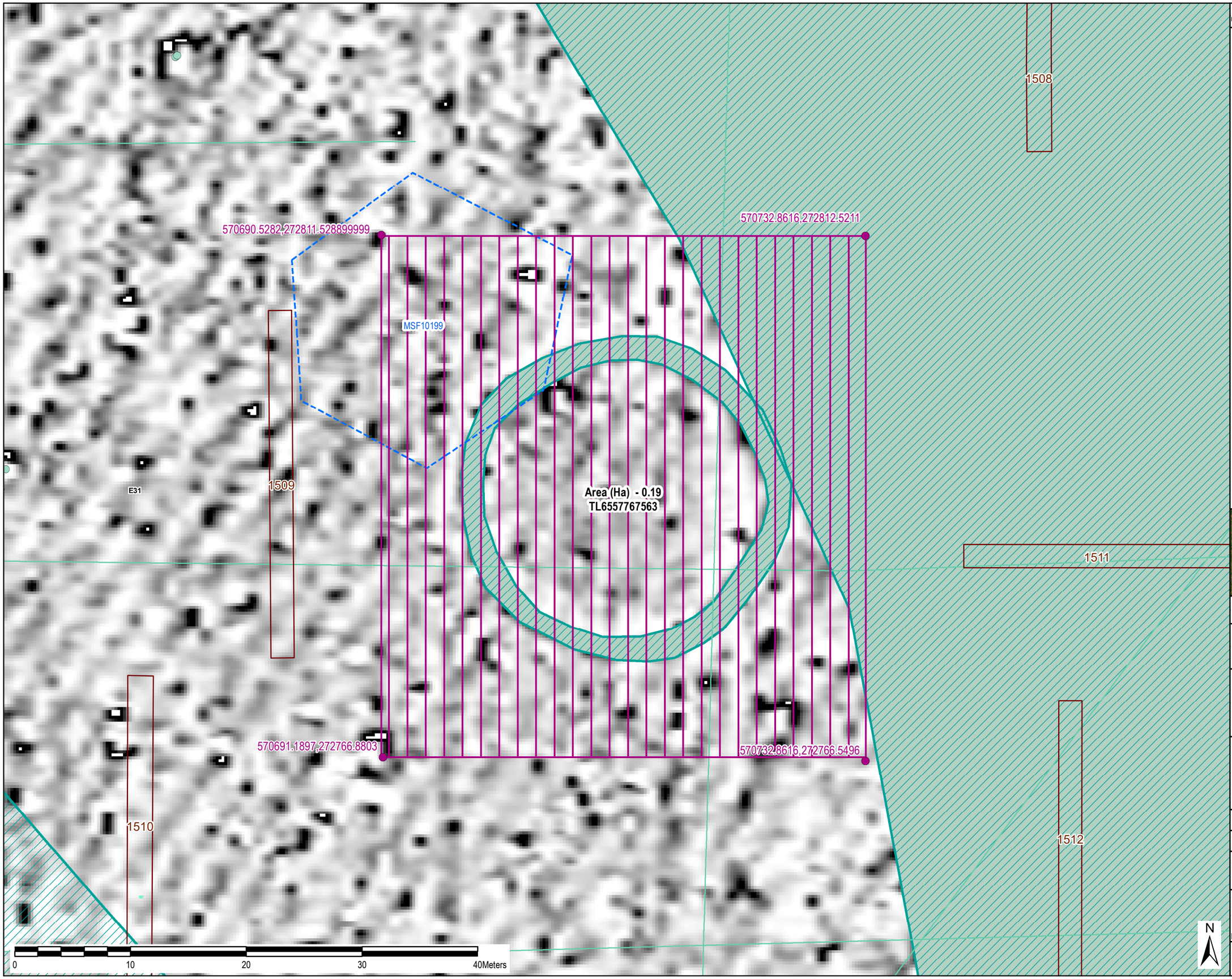
E09
E10

Area (Ha) : 0.3
TL7109472818

N

0 10 20 30 40Meters

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_Areas\Maps\230104_SunnicaEnergyFarm_HEMPS\Sunnica HEMPs Figure E09.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Protection Area
- HER Monument - Area
- Trench
- Geophysical Interpretation (Point)
- Geophysical Interpretation (Line)
- Geophysical Interpretation (Area)
- Interventions

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 6. APA E31

Drawn	Checked	Approved	Date
HW	LL	NC	03/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:300

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number	Rev
60589004_DCO_GPHS_100	0

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_Areas\Maps\230104_SunnicaEnergyFarm_HEMPS\Sunnica HEMPs Figure E31.mxd

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

571070.22,272840.95

571117.85,272842.27

1542

1543

Area (Ha) : 0.22
TL6568667045

571074.19,272795.31

571118.18,272793.99

E32

1544

1545

0 10 20 30 40Meters

N

LEGEND

- The Order Limits
- Archaeological Protection Area
- Proposed Woodland
- Hedgerow With Scattered Trees
- Trench
- Geophysical Interpretation (Point)
- Geophysical Interpretation (Line)
- Interventions

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 7. APA E32

Drawn	Checked	Approved	Date
HW	LL	NC	28/02/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:400

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number	Rev
60589004_DCO_GPHS_100	0

File Name:\\eu.aecomnet.com\UK\UKBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_AreasLayout\230104_SunnicaEnergyFarm_HEMPS\230105_Sunnica HEMPs Figure E32.mxd

565457.9062,267785.978800001
565385.9394,267725.6537
565601.8399,267635.6952
565542.5731,267575.369999999
565541.5147,267567.9617
565497.0646,267521.3949
565750.0068,267476.944800001
565796.0515,267436.6745
565756.3639,267414.184800001
565770.916,267393.018100001
565636.7649,267358.4113
MCB12065
MCB15491
MCB14733
Area (Ha) - 5.41
TL6697867677
Area (Ha) - 24.28
TL6681366657
W03
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
83
84
85
86
89
115
116
0
50
100
150
200Meters
N

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Mitigation Area
- Archaeological Protection Area
- Proposed Hedgerow (new planting or infilling of existing vegetation)
- Proposed Woodland (new planting or infilling of existing vegetation)
- Retained Woodland
- HER Event - Area
- HER Monument - Area
- HER Monument - Point
- Trench
- Geophysical Interpretation (Point)
- Geophysical Interpretation (Line)
- Geophysical Interpretation (Area)
- Interventions

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 8. APA W03

Drawn	Checked	Approved	Date
HW	LL	NC	03/01/2023

AECOM Internal Project No.
60589004

Scale @ A3
1:1,800

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number
60589004_DCO_GPHS_100

Rev
0

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_Areas\Maps\230104_SunnicaEnergyFarm_HEMPS\Sunnica HEMPs Figure W03.mxd

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Mitigation Area
- Archaeological Protection Area
- Proposed Hedgerow (new planting or infilling of existing vegetation)
- HER Monument - Point
- HER Event - Area
- Trench
- HER Monument - Area
- Trench
- Proposed Woodland (new planting or infilling of existing vegetation)
- Retained Woodland
- Registered Park and Garden
- Geophysical Interpretation (Point)
- Geophysical Interpretation (Line)
- Geophysical Interpretation (Area)
- Deposits
- Interventions

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 9. APA W04

Drawn	Checked	Approved	Date
HW	LL	NC	03/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:3,200

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number
60589004_DCO_GPHS_100

Rev
0

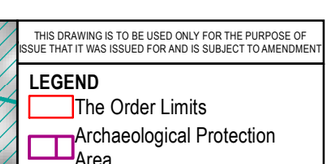
File Name:\\eu.aecomnet.com\UK\UKCBG1\Jobs\PR.334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_AreasMaps\230104_

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Archaeological Protection Area
- Trench
- Geophysical Interpretation (Line)

Sheet Layout



Purpose of Issue
HERITAGE ENVIRONMENTAL MANAGEMENT PLAN

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 10. APA W07

Drawn	Checked	Approved	Date
HW	LL	NC	03/01/2023

AECOM Internal Project No.
60589004

Scale @ A3
1:250

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
[redacted]

Drawing Number
60589004_DCO_GPHS_100

Rev
0

294

293

292

566816.416,266682.8137

566787.327,266658.447000001

W07

Area (Ha) - 0.14
TL6417068580

566839.6494,266655.2359

566810.7493,266630.869100001

N

0 10 20 30 40Meters

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_Areas\Maps\230104_SunnicaEnergyFarm_HEMPS\Sunnica HEMPs Figure W07.mxd

313
315
312
316
317
322
331
333
332
399
401
W10
W11
W08
W17
346
347

566973,267776
566882,267699
567076,267657
566983,267578

Area (Ha) - 1.92
TL6390968725

0 10 20 30 40Meters

N

LEGEND

- The Order Limits
- Archaeological Mitigation Area
- Archaeological Protection Area
- Proposed Woodland (new planting or infilling of existing vegetation)
- Retained Woodland
- HER Monument - Line
- Trench
- Geophysical Interpretation (Point)
- Geophysical Interpretation (Line)
- Geophysical Interpretation (Area)
- Interventions

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 11. APA W08

Drawn	Checked	Approved	Date
HW	LL	NC	03/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:1,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number	Rev
60589004_DCO_GPHS_100	0

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_Areas\Maps\230104_SunnicaEnergyFarm_HEMPS\Sunnica HEMPs Figure W08.mxd

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Legend

- The Order Limits
- Designated Asset Number
- Proposed Woodland (new planting or infilling of existing vegetation)
- Retained Woodland
- Native Grassland Planting
- Native Grassland Planting within Archaeological Mitigation Areas
- Proposed Woodland (new planting or infilling of existing vegetation)
- Retained Woodland

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 12. CHIPPENHAM BARROW GROUP APA

Drawn	Checked	Approved	Date
HW	LL	NC	05/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:2,631

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number	Rev
60589004_DAMS_SA_002	0

File Name:\\eu.aecomnet.com\UK\UKCBG1\Jobs\PR.334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\DCO\03_Archaeological_Mitigation_AreasMaps\230104_SunnicaEnergyFarm_HEMPS\Sunnica HEMPChippen Barrow Group.mxd

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Legend

- The Order Limits
- Site of B50 Crash Site
- Crash Site Protection Area (Subject to Licence)
- Trench
- Archaeological Mitigation Area
- Proposed Woodland (new planting or infilling of existing vegetation)
- Native Grassland Planting within Archaeological Mitigation Areas
- Landscape Offset
- Proposed Woodland (new planting or infilling of existing vegetation)

Sheet Layout

Purpose of Issue
DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 13. APA E05 (B50 CRASH SITE)
TBC SUBJECT TO POMRA LICENCE

Drawn	Checked	Approved	Date
HW	LL	NC	04/01/2023

AECOM Internal Project No.	Scale @ A3
60589004	1:5,055

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000

Drawing Number	Rev
60589004_DAMS_SA_002	0

0 50 100 150 200Meters

N

File Name:C:\Users\WaggonH\Documents\01_Projects\221212_Sunnica_Andrew_New\221214_SunnicaEnergyFarm_DAMS\221213_SunnicaEnergyFarm_50mCrashSite.mxd

Appendix A APA Gazetteer

APA Reference	Description
APA E07	Settlement. Undesignated archaeological remains of probable Roman date
APA E09	Ring Ditch. Undesignated archaeological remains of
APA E31	Ring Ditch. Undesignated archaeological remains of Prehistoric date
APA E32	Ring Ditch. Undesignated archaeological remains of Probable Prehistoric date
APA W03	Settlement. Undesignated archaeological remains of Roman date
APA W04	Settlement. Undesignated archaeological remains of Roman date
APA W07	Settlement. Undesignated archaeological remains of Roman date
APA W08	Settlement. Undesignated archaeological remains of Roman date
APA W09 (Chippenham Barrow Group)	Scheduled Monument NHLE 1015246 Chippenham Barrow group
APA E05 (B50 Crash Site)	Site of B50 Bomber crash impact crater. Extent of APA either 100m radius of 50m x 50m box subject to granting of Licence under the Protection of Military Remains Act 1986.

Appendix B Guidance

English Heritage 2004. Farming the Historic Landscape. Caring for Archaeological Sites in Grassland
https://www.algao.org.uk/sites/default/files/documents/Caring%20for%20archaeological%20sites%20in%20grassland.pdf

English Heritage 2004. Farming the Historic Landscape. Caring for Archaeological Sites in Arable Land
https://www.algao.org.uk/sites/default/files/documents/Caring%20for%20archaeological%20sites%20on%20arable%20land.pdf

Oxford Archaeology 2002. The Management of Archaeological Sites on Arable Landscapes BD1701,CSG15
https://www.algao.org.uk/sites/default/files/documents/The%20management%20of%20archaeological%20sites%20in%20arable%20landscapes.pdf

Oxford Archaeology 2010 Trials to Identify Soil Cultivation Practices to Minimise the Impact on Archaeological Sites (Defra project number BD1705) Effects of Arable Cultivation on Archaeology (EH Project number 3874) Known collectively as: 'Trials' Appendix 3: Studying the effects of different cultivation systems on flat archaeological sites

Legislation

Class Consents https://www.legislation.gov.uk/uksi/1994/1381/schedule/made

Annex F - Offsetting Habitat Provision for Stone-Curlew Specification

Owing to the confidentiality surrounding reporting of locations of Stone Curlew, this report has been redacted. These will be provided separately to key stakeholders.