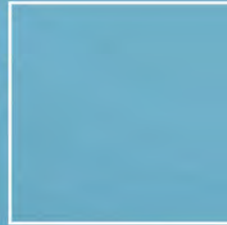
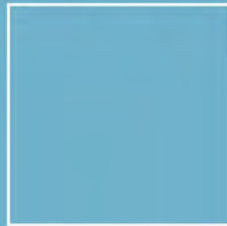


Lullington Solar Farm

Planning, Design and Access Statement

June 2021



Issue Sheet

Report Prepared for: Lullington Solar Park Ltd.,
a subsidiary of Island Green Power.

Land north of Lullington, Swadlincote, Derbyshire

Planning, Design and Access Statement

June 2021

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1 Introduction

- 1.1.1 This statement supports a full planning application for the proposed development of a ground-mounted solar farm including associated infrastructure, comprising inverters, transformers, a substation and grid connection, which will cover an area of 70.18ha on land north of Lullington, Swadlincote, Derbyshire. As part of the proposals there will be substantial landscape planting to connect and enhance the National Forest. Hereafter, the proposals are referred to as 'the Development'. The solar farm will have an export capacity of 50MW, which equates to the annual energy consumption of approximately 15,000 homes (as described later in this report).
- 1.1.2 This planning application seeks temporary planning permission for the Development for a period of 40 years. Following the temporary period the Development will be decommissioned and the land will be reinstated for farming. It is only the substation, the substation compound, and its associated development including CCTV cameras and the control room (along with access to the area) that will require permanent planning permission. These areas are indicated on the proposed site plan.
- 1.1.3 This statement should be read in conjunction with the following documents submitted as part of the planning application:
- Application form and certificates;
 - Site Location Plan;
 - Proposed Site Layout Plan;
 - Proposed Access Plans;
 - Proposed technical drawings:
 - o Lullington CCTV Pole Details
 - o Lullington Conversion Unit Details
 - o Lullington Fence Details
 - o Lullington Mounting Structure Details
 - o Lullington Substation and Control Room Details
 - Statement of Community Involvement;
 - Heritage Statement;
 - Archaeology Assessment;
 - Ecology Report;
 - Flood Risk Assessment and Drainage Strategy;
 - Glint and Glare Assessment;
 - Desk Based Archaeology, Geo-physical Survey and Heritage Assessment;
 - Landscape and Visual Impact Assessment;
 - Landscape Strategy Plan;
 - Verified View Montages;
 - Draft Outline Landscape Management Plan;
 - Draft Construction Access Statement + Traffic Routing Plan;
 - Soils and Agricultural Report;
 - Noise Assessment;
 - Draft Construction Environment Management Plan; and

- Draft Soil Handling Strategy.

- 1.1.4 This Planning, Design and Access Statement addresses the Development Plan and material planning considerations.
- 1.1.5 The applicant has obtained an Environmental Impact Assessment (EIA) screening opinion in accordance with Schedule 2 3 (a) Energy Industry of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (ref: DMOT/2020/1374) please refer to **Appendix 1** for a copy). This confirmed that the development is not considered to constitute EIA development and therefore does not require submission of an Environmental Statement. An Updated EIA Screening request was submitted to the Council for which we await a response. The 're-screening' request is also included at **Appendix 1**. We understand from officers that they do not plan to update their recommendation of 'non-EIA'. Alongside this, Habitat Regulations Assessment (HRA) Screening was undertaken. The competent authority, South Derbyshire District Council, considered the request, at **Appendix 2**. Alongside the re-screening, an updated HRA Report was submitted. This is also contained at **Appendix 2**.
- 1.1.6 The development has been subject to pre-application discussions with South Derbyshire District Council (see **Appendix 3** for pre-application advice). A public consultation exercise was also carried out by the applicants prior to the submission of this application. Full details are included within the Statement of Community Involvement.

2 Site Context and Existing Use

2.1 The Site

- 2.1.1 The full planning application Site covers ('the Site') an area of 70.18 hectares (please refer to Site Location Plan).
- 2.1.2 The Site is located within the administrative area of South Derbyshire District Council, north of the village of Lullington and falls within the parish of Lullington.
- 2.1.3 The Site comprises and is surrounded by agricultural fields.
- 2.1.4 Lullington Road runs in a north/south direction through the Site. Unnamed roads run along the east and west boundaries of the Site, although parts of the road running along the western boundary of the Site appears to be called 'Little Liverpool' in some sources, and 'Coton Road' in others.
- 2.1.5 There is well established natural vegetation around the Site, with the boundaries being made up of a mix of hedgerows with scattered trees. The boundaries between the fields are also made up of hedgerows. There is a Public Right of Way (PROW) crossing the Site north to south.
- 2.1.6 There are existing field accesses across the Site.

2.2 Statutory and Non-statutory Designations

- 2.2.1 The Site is within flood zone 1 as identified on the Environment Agency's Flood Risk maps.
- 2.2.2 The Site does not accommodate any listed buildings. There are a number of listed buildings within 2km of the Site. All of these are Grade II with the exception of the 'Church of All Saints' located within the centre of Lullington which is Grade II* listed which incorporates a spire of special architectural or historic interest.
- 2.2.3 The nearest Ancient Scheduled Monument (SAM) is located to the north within Castle Gresley, known as the 'Castle Gresley Motte and Bailey Castle'. This is located approximately 9km north of the Site.
- 2.2.4 The nearest Conservation Area is within the village of Lullington, which is approximately 0.5km south of the application Site.
- 2.2.5 The River Mease Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) are approximately 1.78km south of the site. The Development site falls within the Impact Risk Zone (IRZ) for the SSSI.

2.3 Surrounding Area

- 2.3.1 The Site is located around 0.5km north of the village of Lullington. There are agricultural fields, hedgerows and trees between the village and the Site.
- 2.3.2 The village of Coton in the Elms is located around 1km north of the Site. Coton Woods, agricultural fields and Pessall Brook separate the Site and the village.
- 2.3.3 There are also scattered farms and houses across the surrounding countryside.

2.4 Planning History

2.4.1 The relevant planning history for the Site and surrounding set out in the table below:

Ref	Proposal	Decision
THE SITE		
DMOT/2020/1374	Screening request under The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 relating to Land north of Lullington, Swadlincote	EIA not required

3 The Development Proposal

3.1 Overview

- 3.1.1 This section sets out the Development, and the design and access elements of the scheme.
- 3.1.2 Given the vast number of renewable energy technologies available today, solar technology is one of the most favourable and is highly suited to the Site. Solar PV technology is relatively unobtrusive, sympathetic to the surrounding area, easy to deploy, commercially proven and reliable whilst making best use of the land.
- 3.1.3 The Development consists of a number of different elements which are detailed below.

3.2 Built Development

Solar Panels

- 3.2.1 The solar photovoltaic (PV) panels proposed are a standard polycrystalline type which are intended for the daylight levels at this Site. The installation is free draining through perimeter gaps around all panels and dispersed rainwater runoff. The Development will comprise of the installation of PV panels laid out in arrays of rows running east/west across the Site, the number of these will be dictated by the finalised layout. The height of the panels will be at a maximum of 3 meters.
- 3.2.2 The mounting structure for the panels is a metal frame securely fixed to the ground. It is capable of withstanding appropriate environmental stresses for the location, such as wind or snow loading. The Development will contain rows of ground-mounted structures with solar panels on top. The structure may also provide a route for electrical wiring.
- 3.2.3 The mounting posts will be pile-driven approximately 1.5 metres into the ground for support, dependent on ground conditions and will easily be retrieved using similar hydraulic equipment when the solar farm is decommissioned and the land reinstated back to agricultural land. Such supporting systems are designed to avoid the use of mass concrete foundations on Site. Only around 0.5% of the Site would be disturbed by the Development.
- 3.2.4 The solar panels will then be installed at 15° from the horizontal and face in a southerly direction. The rows will be placed an appropriate distance apart, again in order to optimise solar collection per unit land area.
- 3.2.5 The solar farm would be connected into the grid via the overhead lines on Site.
- 3.2.6 The development will also require the installation of associated infrastructure required for the running of a solar farm.

Conversion Units

- 3.2.7 Conversion Units would accommodate the inverter, transformer and associated equipment to convert direct current (DC) energy produced by the arrays, into alternating current (AC) energy required by the national grid. It is envisaged there would be 13 conversion units. The locations and sizes of these are showing on the proposed plans submitted with this application.

Substation and grid connection

- 3.2.8 The substation will connect to the DNO's existing 132kV overhead line running through the site. . It will be positioned on hardstanding and enclosed within a security fence. The substation is proposed to be located in the south-west section of the Site, as shown on the proposed layout plan, more than 300 metres from the nearest house.
- 3.2.9 The substation would be located within a compound measuring 52 metres long by 25 metres wide. The compound would comprise a 2.44m high galvanised security palisade fence and enclose the substation gear which would extend to approximately 6.29 metres above ground level. Details of the design are shown on proposed plan 'Substation and Control room details', submitted with this application.

3.2.10 A control room would be located just outside the entrance to the compound, as shown on proposed plan 'Substation and Control room details' drawing number '7'. The control room would measure 7 metres wide, 5.6 metres deep by 3.85 metres tall.

3.2.11 Buried cables would cross Lullington Road connecting the solar array east of the road to the substation and grid connection point.

Perimeter Fencing

3.2.12 The Site perimeter will be made secure by the construction of 2 metre high deer fencing as indicated on the Site plan. This will be constructed using wooden posts and wire mesh. Details of this and an illustration of it in use on another Site are included on proposed plan 'Security Fence details' drawing number '5'. Additional planting will be introduced for screening purposes as shown on the proposed landscaping plan.

CCTV Cameras

3.2.13 The installation of CCTV is required on Site for insurance purposes. The CCTV will be capable of viewing the Development only (without panning angles beyond). No floodlighting will be used as the CCTV cameras detect movement and have night vision capability in accordance with insurer's requirements. These will allow for constant monitoring, but will be positioned in such a way to prevent areas outside the Site being monitored. The CCTV camera poles will be constructed in galvanised steel painted green to blend into the landscape. The poles will extend 2.5 metres above ground level as shown on proposed plan 'CCTV system details' submitted with this application. The location of the poles is shown on the proposed plan 'layout'.

Site Access

3.2.14 The main traffic generation would be during the construction period, which would be relatively short. The construction period could be up to 6 months, although typically is around 4-5 months.

3.2.15 Typically, there are two vehicular trips per hour, during working hours. Further details on construction can be found in the Construction Access Statement submitted with the planning application.

3.2.16 Once operational, traffic movements would be minimal with only occasional maintenance access required.

3.3 Construction and Operation

Construction Environmental Management Plan (CEMP)

3.3.1 A draft Construction Environmental Management Plan is submitted as part of the application. It is envisaged there would be a temporary construction compound adjoining the eastern boundary of the Site and traffic would be routed eastwards from the Site, avoiding the village of Lullington. This is shown on the Site Layout Plan and the draft Construction Routing Plan submitted with the application. The Construction Access Statement outlines that all construction vehicles will be able to enter and exit the Site in forward gear via dedicated turning and parking areas provided within the Site. This access will then serve as an operational access for maintenance vehicles at the end of the construction phase.

3.3.2 The draft CEMP outlines the allocated responsibilities, procedures and requirements for Site environmental management during construction. It includes relevant Site specific method statements, operating practices, and arrangements for monitoring and liaison with local authorities and stakeholders.

3.3.3 The Statement describes how the relevant visibility splays are achieved from the access.

3.3.4 The Main Contractors undertaking the construction of the development would need to adopt and comply with the CEMP, allocate environmental management responsibilities to

a Site manager and ensure that all sub-contractors activities are effectively managed in accordance with the CEMP.

Operation & Maintenance

- 3.3.5 Once the solar farm is operational, traffic generated by it will be limited to that associated with occasional maintenance work.
- 3.3.6 Movement within the Site will be by way of quad bike or small, farm utility vehicle. The DNO will visit the Site from time to time to check the apparatus. No on-Site staff will be required to operate the solar farm and no staff offices or maintenance buildings needed within or near to the Site. Some permanent equipment for monitoring the Site will be held in one of the conversion units or control room. Whilst this would typically be accessed remotely, it would be available for occasional physical access during routine visits.
- 3.3.7 The land between each row of cells and on the fringes of the Site will be seeded with a grass mix. The grassland under the panels will either be managed by sheep grazing or regular cutting (to be confirmed as part of a Landscape Management Plan).
- 3.3.8 Noise impact is limited to the construction phase of the development, there would be minor impacts generated by the vehicle movements across the Site coupled with the installation of equipment.
- 3.3.9 Once operational, the inverters may generate additional background noise levels, however, noise will be mitigated as any operational plant is enclosed within the conversion units and benefits from acoustic fences, which are indicated on the proposed site plan and described in the Noise Assessment, both submitted with this application. This is assessed as part of the noise report submitted with the planning application.

Decommissioning

- 3.3.10 The scheme has been designed to have the lightest possible impact on the land in terms of structural loading. At the end of the 40-year period, the structure, including ancillary equipment and cabling, would be carefully dismantled and removed from the Site. Materials would be reused or taken to an appropriate location for recycling or disposal. The Site would be reinstated for agricultural use. It is only the DNO substation and the substation compound, and its associated development including CCTV cameras and the control room (along with access to the area) that will require permanent planning permission. These areas are indicated on the proposed site plan.

3.4 Ecology and Landscaping

Ecological Mitigation and Enhancement

- 3.4.1 The Ecology Appraisal (EA), submitted with this application, found that the dominant habitat was intensive arable crops. This habitat had low ecological value in terms of botanical interest. For instance, no species rich field boundaries were found. The most ecologically valuable habitats were found to be the hedgerows and small wooded areas. As these will be broadly retained, no significant impacts on these habitats are predicted.
- 3.4.2 The EA identified that the Site had potential to support several protected and notable species and species groups. However, based on the habitats affected and associated data search records, the likelihood of important ecological features being present was considered to be low. In any event, a number of protected species surveys have been carried out as discussed below.
- 3.4.3 Embedded design and mitigation measures are proposed to avoid impacts on hedges and woodland habitats and relevant species. The proposals will allow species of bats to continue to forage and commute across the Site during operation. The proposals have been developed with invertebrates, birds, bats, and other notable mammals e.g. brown hare, harvest mouse and hedgehog in mind.
- 3.4.4 Further surveys were considered necessary for great crested newt and badger. Surveys for great crested newt will be completed in the 2021 season. Whilst their presence in the

area is unknown, arable land is typically considered a poor value terrestrial habitat for the species. Badger surveys were completed and the findings are detailed in the confidential Badger report included with this submission. Appropriate setbacks have been designed into the scheme to accommodate the potential for these species.

- 3.4.5 Breeding bird surveys are currently being undertaken. It was agreed with Natural England that Wintering Bird surveys were not necessary. Bat surveys are ongoing. Arboricultural surveys are being undertaken for the small sections of hedge proposed to be removed to facilitate access, and for two trees proposed for removal because of shadowing impacts.
- 3.4.6 A total of thirty two individual trees, one group, twelve hedges and one woodland have been assessed within this report. Tree and hedge loss is limited to two individual trees (T11, and T12) to facilitate the proposed development, and six small 'road width' sections of hedgerows to facilitate the proposed case road, and associated accesses. A 104m length of existing hedgerow is proposed to be laid, located within the eastern extents of the site to facilitate the visibility splays for the proposed compound access.
- 3.4.7 Some pruning back of existing hedgerows will also be required to improve the visibility splays for the proposed access of Lullington Road, and the proposed compound access to the east of the site, this is minor work and can be implemented without significant harm to their long-term health.
- 3.4.8 The proposal introduces substantial landscape and biodiversity enhancements, including new hedgerows and trees and woodland copses which aim to compensate for the proposed losses, and positively improve and strengthen the local landscape character.
- 3.4.9 Subject to adopting the approaches and best practice recommendations within this report and associated drawings it is possible to conclude the proposed development can incorporate important or significant trees and hedges sustainably, where losses are unavoidable the proposal will enhance the local landscape through the delivery of new trees and hedges and therefore is sustainable and complies with national and local planning policies in this respect.
- 3.4.10 The potential mitigation requirements for impacts on both species can be determined at this stage, and for both species, mitigation approaches are well understood. The following enhancements and mitigation are proposed:
- using species rich grass mixed beneath panels;
 - infilling of gaps within retained hedgerows with native species;
 - Installing bird nest boxes; and
 - Installing bat boxes on retained trees.

Landscaping

- 3.4.11 The Site falls within an area covered by The National Forest environmental project. The national Forest Strategy covers the period 2014-2029 and is creating thousands of hectares of new green infrastructure by requiring a portion of any new development to provide new green infrastructure. This included woodland, hedgerows, sustainable drainage systems and new habitats.
- 3.4.12 The planting proposals for the Site have been developed in discussion with the National Forest Company. The significant planting proposals are expected to increase woodland on Site from around 1% to around 10%. This is in addition to proposed landscape planting of hedgerows and grassland.
- 3.4.13 New planting has been designed to help integrate the development into the character of the landscape through the creation of new woodland blocks and belts as well as the planting of section of new hedgerow for the reinforcement of the boundary hedgerows and new tree planting. The landscape strategy also includes for internal hedgerows to be enhanced and strengthened where necessary. Around 1 kilometre of new hedgerows would be planted in and around the site through the development. Once established, the

landscape strategy would help to further enclose this area of landscape and limit appreciation of the solar array from all built locations within immediate proximity of the development.

- 3.4.14 These planting proposals bring forward beneficial ecological enhancements. As well as these wider benefits, meadow and hedge planting is proposed along the route of the footpath running through the Site. This would be an attractive enhancement to the setting of this section of footpath whilst providing ecological and biodiversity benefits. This new woodland block would also help to break up the array and provide screening and separation of the wider infrastructure.
- 3.4.15 The landscape strategy also increases the green infrastructure across the countryside to the north of Lullington. New woodland blocks and belts help connect existing woodlands around the Site whilst providing effective screening of the array. The new blocks and belts have been arranged to visually break up and screen the array, particularly from the village of Lullington.
- 3.4.16 Specialised landscape planting has been discussed with local residents who live closest to the Site where possible. The proposals for both hard and soft landscaping, including fences and planting are included within the proposed landscape plan.

3.5 Drainage

- 3.5.1 Solar farm developments have the potential to affect the River Mease SSSI. This is considered possible via impacts to watercourses that flow through or near to development sites and into the River Mease. These development proposals could result in impacts on the SAC/SSSI, as a tributary flows from the south-western corner of site (West Brook) to the River Mease. These impacts have been identified as having the potential to occur during construction and decommissioning via run-off, or via hydrological changes during operation.
- 3.5.2 The potential pathways to significant effects have therefore assessed through Habitats Regulations Assessment.
- 3.5.3 A Draft Construction Environmental Management Plan, Soil Handling Strategy and Drainage Strategy are submitted with this application, and outline measures to protect the River Mease SSSI and SAC.
- 3.5.4 Interception swales are proposed along the northern and western boundaries of the site where surface water from the site discharges to the surrounding watercourses. The location and design of the proposed swales are shown on the proposed site plan and in the drainage strategy submitted with this application.

4 Planning Policy Context

4.1 Primary Legislation

- 4.1.1 Under Section 38 of The Planning and Compulsory Purchase Act 2004 ('The 2004 Act'), the determination of planning applications must be in accordance with the approved development plan unless material considerations indicate otherwise. This chapter identifies the national and local planning policies that provide the framework in which this application has been made. This chapter also summarises the relevant Government legislation, energy policies and targets which support development of renewable energy proposals.

4.2 National Planning Policy

- 4.2.1 National planning policy is set out in the National Planning Policy Framework (NPPF) which was published in March 2012. The NPPF has since undergone consultation and subsequently a revised submission was published in February 2019. There has also been a subsequent consultation on proposed changes to the NPPF. This provides a framework within which regional and local policy is set.
- 4.2.2 The NPPF sets out that the purpose of the planning system is to contribute to the achievement of sustainable development, identifying that sustainable development consists of economic, social and environmental roles.
- 4.2.3 Paragraph 11 advised that plans and decision should apply a presumption in favour of sustainable development. For decision making this means approving development which accords with the local development plan without delay. Where there are no relevant policies or the policies are out of date, permission should be granted unless:
- The application of policies in the NPPF that protect areas or assets of particular importance provides a clear reason for refusal; or
 - Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the NPPF taken as a whole.
- 4.2.4 Whilst there is no specific policy for solar energy development contained in the NPPF, paragraph 148 states that the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change.
- "The planning system should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings, and support renewable and low carbon energy and associated infrastructure".*
- 4.2.5 Paragraph 150 in relation to Planning for Climate Change states that new development should be planned in ways that:
- "a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and*
- b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."*
- 4.2.6 Paragraph 151 states that to help increase the use and supply of renewable and low carbon energy and heat, plans should:
- "a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);*
- b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and*

c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers."

4.2.7 At paragraph 154 the NPPF states that when determining planning applications for renewable and low carbon development, local planning authorities should:

"a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and

b) approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas."

4.2.8 Paragraphs 170 through 173 of the NPPF highlight the need for planning policy to work to protect and enhance the natural environment. It is especially important that great care is taken to ensure that landscape value is retained and that as little damage as possible is done to any existing Site of interest.

4.2.9 Paragraphs 174 to 177 emphasise the role of the planning system to protect and enhance habitats and biodiversity. If a significant harm to biodiversity, habitats, Sites of Special Scientific Importance, Special Protection Areas and Special Areas of Conservation resulting from a development cannot be avoided or adequately mitigated, or compensated for, then planning permission will not be supported. Development which conserves or enhances biodiversity will be encouraged.

4.2.10 Paragraphs 189-198 set out the approach to proposals affecting heritage assets, and how the impacts of development should be considered and justified.

4.2.11 Section 16 of the NPPF, 'Conserving and enhancing the historic environment' provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 189 states that planning decisions should be based on the significance of the heritage asset, and that the level of detail supplied by an applicant should be proportionate to the importance of the asset and should be no more than sufficient to review the potential impact of the proposal upon the significance of that asset. This is supported by paragraph 190 which states that LPAs should take this into account when considering applications.

4.2.12 Paragraphs 193 to 202 concern the conservation and enhancement of the historic environment. Proposals that are likely to affect heritage assets should be subject to appropriate assessments. Development that is likely to result in a substantial harm to or total loss of significance of a designated heritage asset will not be permitted, unless it is demonstrated that the benefits of the development outweigh the harm or loss.

4.2.13 Paragraph 193 states that where a development is proposed that would affect the significance of a designated heritage asset, great weight should be given to the asset's conservation and that the greater an asset's significance, the greater this weight should be. Paragraph 195 emphasises that where a proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this should be weighed against the public benefits of the scheme, bearing in mind the great weight highlighted in Paragraph 193.

4.2.14 The Governments Planning Practice Guidance (PPG) which was published in March 2014 and further updated in March 2015, provides further guidance on renewable energy and in particular on large scale ground mounted solar farms. Paragraph ID 5-013 states that:

“The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively.”

- 4.2.15 It acknowledges that the Site selection of any large scale solar farms should be carefully considered *“where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays.”*
- 4.2.16 It states that *“in the case of ground-mounted solar panels it should be noted that with effective screening and appropriate land topography the area of a zone of visual influence could be zero”*.

4.3 Local Planning Policy Context

The Development Plan

- 4.3.1 The Local Plan for South Derbyshire has been prepared in two parts. Part 1 was adopted by Full Council on June 13, 2016. The Local Plan Part 2 was adopted by Full Council on November 2, 2017. The 1998 Local Plan has now been fully superseded, together Part 1 and Part 2 are the primary documents that need to be taken into account when making decisions on planning applications across the District.

Adopted Local Plan Part 1

- 4.3.2 The Adopted Local Plan Part 1 covers the period 2011 to 2028 and is the strategic element of the Local Plan.
- 4.3.3 It sets the long-term vision, objectives and strategy for the spatial development of South Derbyshire. The plan sets the amount of housing and employment development required within the District over the plan period, allocates strategic housing and employment Sites and contains policies used in the determination of planning applications.
- 4.3.4 The policies which are considered of particular relevance to this proposal for a ground mounted solar farm are:
- Policy S1 Sustainable Growth Strategy;
 - Policy S2 Presumption In Favour of Sustainable Development;
 - Policy SD1 Amenity and Environmental Quality;
 - Policy SD6 Sustainable Energy and Power Generation;
 - Policy BNE2 Heritage Assets;
 - Policy BNE3 Biodiversity;
 - Policy BNE4 Landscape Character and Local Distinctiveness.

Adopted Local Plan Part 2

- 4.3.5 The Local Plan Part 2 proposes non-strategic housing allocations and detailed development management policies.
- 4.3.6 The policies which are considered of particular relevance to this proposal for a ground mounted solar farm are:
- SDT1 Settlement Boundaries and Development;
 - SD1: Amenity and Environmental Quality;
 - SD2: Flood Risk

SD3: Sustainable Water Supply, Drainage and Sewerage Infrastructure

BNE5 Development in Rural Areas;

BNE7 Trees, Woodland and Hedgerows;

BNE10 Heritage;

INF2 'Sustainable Transport

INF8 The National Forest.

5 Planning Assessment

5.1 Determination

- 5.1.1 Under Section 38 of The Planning and Compulsory Purchase Act 2004 ('The 2004 Act'), the determination of planning applications must be in accordance with the approved development plan unless material considerations indicate otherwise.
- 5.1.2 Through consideration of the Development Plan and other planning policy documents, the following matters are considered relevant:
- The principle and need for the development; and
 - Environmental considerations (including transport and access, landscape and visual amenity, environment, heritage, ecology and biodiversity).

5.2 Principle and need for Development

The need for solar farm development

- 5.2.1 National Grid's ambition is to have the technology in place to operate a zero carbon electricity system by 2025, and a net zero energy system by 2050. Their aim is "to build a cleaner, fairer and more affordable energy system that serves everyone powering the future of our homes, transport and industry" (nationalgrid.com). To achieve this, over the next ten years they plan to triple the use of the UK's home-grown clean energy so that everyone can benefit from clean energy and cleaner air. This will be achieved through projects led by both National Grid and private companies.
- 5.2.2 Solar Farms are comprised of solar photovoltaic (PV) panels that generate electricity using light (not sunshine). Light is a clean renewable natural resource that can be harvested, converted to electricity, and distributed to the national grid. For every 5MW installed, a solar farm will power over 1,500 homes annually (based on an average annual consumption of 3,300 kWh of electricity for a house) and save 2,150 tonnes of CO₂ (Explainer: Solar Farms - Solar Trade Association)
- 5.2.3 Research published in Nature Energy measures the full lifecycle greenhouse gas emissions of a range of sources of electricity out to 2050. It shows that the carbon footprint of solar, wind and nuclear power are many times lower than coal or gas with carbon capture and storage (CCS). This remains true after accounting for emissions during manufacture, construction and fuel supply. (Pehl et al. (2017) Understanding future emissions from low-carbon power systems by integration of life cycle assessment and integrated energy modelling, Nature Energy, doi: 10.1038/s41560-017-0032-9)
- 5.2.4 The NPPF is heavily supportive of renewable energy development. The NPPF places an over-riding emphasis on the presumption in favour of sustainable development, which this development clearly constitutes. Infrastructure, which is required to ensure the generation of renewable energy, is inherently sustainable under the NPPF.
- 5.2.5 The UK is legally bound through the Climate Change Act (2008) to reduce carbon emissions and through Renewable Energy Directive 2009/28/EC to increase electricity consumption from renewable resources. The Development would contribute towards meeting these requirements and would also be fully supported by energy policy because it would assist in replacing outdated energy infrastructure and the move to a low carbon economy, and ultimately will assist with affordable energy bills.
- 5.2.6 In line with the Climate Change Act 2008 the National Planning Policy Framework (NPPF) sets a presumption in favour of sustainable development.
- 5.2.7 The NPPF sets out that the purpose of the planning system is to contribute to the achievement of sustainable development, identifying that sustainable development consists of economic, social and environmental roles.
- 5.2.8 Paragraph 11 advises that plans and decisions should apply a presumption in favour of sustainable development. The Development is considered to accord with the overarching

- principle of sustainable development, as it has great potential to result in economic and social benefits in respect of supplying affordable, low carbon electricity.
- 5.2.9 Paragraph 148 states that the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. The Site has been considered as the optimal location which can maximise the energy output, while leaving minimal impact on nearby properties and the environment.
- 5.2.10 Planning Policy Guidance (PPG) paragraph 13 ID 5-013 requires local planning authorities to consider the following:
- 5.2.11 *“encouraging the effective use of land by focussing large scale solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value;”*
- 5.2.12 *“where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays.”*
- 5.2.13 Paragraph 154 of the NPPF sets out that in order to increase the use and supply of renewable energy, LPAs should not require applicants to demonstrate the overall need for renewable or low carbon energy. LPAs should approve the application if its impacts are or can be made acceptable.
- 5.2.14 For information, a review of South Derbyshire District Council's brownfield register is contained at **Appendix 4** of this planning statement as part of an Alternative Site Assessment. The review concludes that there are no brownfield Sites within the district available that would be large enough to accommodate the proposed development.
- 5.2.15 The Site selection process is set out within **Appendix 4** of this Planning Statement for information. This describes how lower quality agricultural land has been selected, and that there are no Sites which could be considered more sequentially preferable, within the district. The Agricultural Land Grade Report describes that approximately 33.6 hectares of the Site comprises Best and Most Versatile Land. This represents less than half the Site. The temporary use of the Site as a solar farm (for 40 years) will not necessarily remove the land from agricultural use for the temporary period as it is common practice to use sheep to graze the grassland under the panels. The temporary use would also have the added agricultural benefit of resting the soil which is a common practice used by farmers to enhance their quality. There would be no permanent loss of agricultural land. The temporary use of around 33.6ha of BMV land would not compromise the production of arable farmed crops.
- 5.2.16 Local Plan Policy S1 (Sustainable Growth Strategy) considers the provision of new infrastructure to support the growth across the District, which may include energy generation facilities. This policy requires that new schemes should respond to and address environmental and social issues including (inter alia) the need to tackle climate change, improve the quality of the built and natural environment and minimise resource use. The energy generated by the proposed development would contribute to supporting growth in the region, and the carbon emissions saved as a result of generating electricity from a renewable source would help to tackle climate change and minimise resource use. As such the proposed development would support this policy.
- 5.2.17 Local Plan Policy SD6 (Sustainable Energy and Power Generation) states that the Council will support renewable and other energy developments provided that the environmental effects of the proposal have been appropriately considered and schemes will not give rise to unacceptable impacts on landscape or townscape character, ecology, local amenity, the historic environment or cultural heritage assets.
- 5.2.18 As part of this planning application, technical work has informed the design of the proposals and mitigation so that that the layout, design and location of the proposed development has taken account the potential impact of the development on the local

landscape character, local amenity, historic and cultural assets and ecology and consequently the level of effect on the receiving environment is limited.

Development in the Countryside

- 5.2.19 The Site is located outside of any development boundaries, within the open countryside within the South Derbyshire National Forest. Outside of settlement boundaries, within the Rural Areas as defined in Policy H1, development will be limited to that considered acceptable inter alia by Policy BNE5. Policy BNE5 states that planning permission will be granted where the development is ... *1) unavoidable outside settlement boundaries or will not unduly impact on: landscape character and quality, biodiversity, best and most versatile agricultural land, and heritage assets.*
- 5.2.20 Solar farms require a relatively large land area as well as a grid connection point. This inevitably means that solar farms are more suited to a countryside than urban location, where large areas of land, or brownfield Sites are typically earmarked for residential or commercial expansion. It is therefore considered that suitable Sites for solar farm development will be unavoidably be outside settlement boundaries.

The Planning Balance

- 5.2.21 It is integral to planning decision-making that a balancing exercise has to occur in respect of considering the benefits of development against the impacts. In this case, there are clear benefits which arise from the renewable energy credentials of the Development which clearly outweigh the impacts. These wider environmental benefits of the Development outweigh the effects.
- 5.2.22 The material considerations also weigh in favour of the Development. The NPPF is heavily supportive of renewable energy development. The NPPF places an over-riding emphasis on the presumption in favour of sustainable development, which this development clearly constitutes. Infrastructure, which is required to ensure the generation of renewable energy, is inherently sustainable under the NPPF. The NPPF sets out that the purpose of the planning system is to contribute to the achievement of sustainable development, identifying that sustainable development consists of economic, social and environmental roles.
- 5.2.23 Paragraph 11 advises that plans and decisions should apply a presumption in favour of sustainable development. The Development is considered to accord with the overarching principle of sustainable development, as it has a great potential to result in economic and social benefits in respect of supplying affordable, low carbon electricity. The impacts of the development on the environment have been carefully assessed and where necessary mitigated, so that it will not lead to any significant adverse effects.
- 5.2.24 The following sections of this planning assessment demonstrate that the relevant criteria are met by the proposal and it therefore complies with local planning policies and NPPF policy supporting the UK's transition to a low carbon future. It is considered that the principle of the development is acceptable.

5.3 Landscape

- 5.3.1 The Site is located within an area designated as countryside in the local plan. Local Plan Policy BNL4 (Landscape Character and Local Distinctiveness) seeks to protect and enhance the character, local distinctiveness, and quality of South Derbyshire's landscape.
- 5.3.2 The Site is located within the 'Mease/Sence Lowlands' Character Area and is of the 'Village Estate Farmlands' type.
- 5.3.3 The Site comprises a series of agricultural field parcels, forming an elongated shape running east to west following the generally regular field pattern and well-maintained hedgerows that have few trees. A single rural road and a public footpath cross north-south across the Site, as well as a line of overhead pylons. The Site forms part of the coherent

and undulating village estate farmland landscape which has a backdrop of woodland belts and copses set within a gently undulating landform. Fields are bounded by well-maintained (but often low cut) hedgerows with occasional field trees and small copses with occasional ponds and individual trees. To the north of the Site the landscape is well wooded, which forms a backcloth in the wider landscape.

- 5.3.4 The Site forms part of the gently undulating Mease/ Sence Lowlands, primarily village estate farmlands lying at between approximately 85 and 80m AOD. In a wider context, the village estate farmlands landform falls generally west and south towards the lowland village farmlands as well as a narrow river valley (riverside meadows character type) associated with the River Mease to the south. The landscape has a backcloth of woodland, copses and woodland belts that serve to provide containment in the landscape, particularly to the north.
- 5.3.5 The LVIA submitted with this application concludes that the Site makes a positive contribution to the local landscape character. This is where the existing character of the Site contains many attributes that are strongly representative of the local landscape character and a few incongruous elements that only detract from the local landscape character to a limited degree.
- 5.3.6 In relation to the Site as a visual resource, it is identified that views are generally limited and localised to the immediate context and surrounding roads and experience partial screening as a result of existing woodland and hedges in and around the Site.
- 5.3.7 Images showing the existing and proposed viewpoints from around the Site, which have been discussed with Council Officers are included as part of the assessment. These photomontages are included as appendices of the LVIA submitted with this application. They show the existing Site context, what the proposals would look like without landscaping, and what they would look like with the proposed screening.
- 5.3.8 The landscape planting and mitigation proposals are described at Section 3 of this Statement.
- 5.3.9 The LVIA concludes the following:
- There would be a neutral effect on landscape fabric as the proposals can accommodate pastoral farming;
 - There would be moderate/slight beneficial effects on the landscape resource of the site, as a result of the additional planting, which would provide ecological enhancement;
 - Once the proposed planting has established, it is considered there would be a moderate/slight beneficial effect on the character of the surrounding countryside, as extension of the National Forest, however, for the first few years, there could be moderate adverse effects;
 - Where there are impact on visual amenity in the surrounding area, these are limited and localised. They are considered to range from isolated examples of major adverse effects, to negligible effect. With the maturity of the proposed planting the impact of the effects are reduced. The LVIA describes how particular care has been given to the treatment of the public right of way which runs through the site, to provide a visually interesting and pleasant experience for walkers. It also describes how views of Lullington Church spire from the public footpath have been preserved by careful design; and
 - The LVIA describes that from most private dwellings there would be little to no day to day appreciation of the solar array. Where there are impacts, at worst they would be moderate adverse, but improved greatly by the proposed planting.
- 5.3.10 South Derbyshire Local Plan Policy INF8 'The National Forest' states that for all industrial, commercial and leisure developments over 1ha, is expected to incorporate tree planting and landscaping in accordance with National Forest Planting Guidelines, which would be

30% of a Site. Notwithstanding, the proposals are not classified as an industrial, commercial or leisure development and therefore do not trigger the need for 30% additional planting (or any other fixed percentage). Ongoing conversations with The National Forest Company have confirmed the acceptability of this approach. The significant planting proposals are expected to increase woodland on Site from around 1% to around 10%. This is in addition to additional landscape planting such as hedgerows and grassland.

- 5.3.11 Overall, it is considered that the development proposals minimise the potential harm to the landscape and have an overall positive effect on the landscape.

5.4 Heritage Assets

- 5.4.1 Policy BNE2 (Heritage Assets) states that development that affects South Derbyshire's heritage assets will be expected to protect, conserve and enhance the assets and their settings in accordance with national guidance and supplementary planning documents. The proposed development is located around 0.5km north of Lullington Conservation Area and there are Listed Buildings within the surrounding area. A Heritage Statement is submitted with this application and identifies that the proposal will result in no direct physical harm to any designated heritage assets. It is concluded that no heritage assets will be directly affected physically by the proposed development, and that only three designated assets have any potential for the contribution of setting to their significance to be affected. These are Lullington village conservation area, the Church of All Saints, and Lady Leys Farmhouse. It has been concluded that there will be no harm to the contribution of setting to the significance of the Church of All Saints, and negligible to no appreciable harm to the contribution of setting to the significance of Lady Leys Farmhouse and Lullington Village Conservation Area. Following the introduction of planting proposals close to the non-designated locally listed Grafton House, it is considered there would be no appreciable harm. The proposal is in accordance with relevant national and local heritage policy and legislation.

- 5.4.2 A solar farm development has minimal impact below ground meaning development is unlikely to impact upon any archaeology. The archaeology report concludes that the available archaeological records, combined with analysis of historical mapping, the results of previous archaeological investigations in the search area, and the geophysical survey suggest that there is generally a low potential for archaeological remains relating to all periods. If archaeological remains were identified within the study Site they are likely to be of no greater than low/local significance. There is no evidence to suggest that the study Site contains, or has the potential to contain, archaeological remains of sufficient importance to preclude or constrain development.

- 5.4.3 The proposals are therefore considered to comply with the relevant policies for the protection of heritage assets.

5.5 Amenity

- 5.5.1 Policy SD1 'Amenity and Environmental Quality' outlines that 'The Council will support development that does not lead to adverse impacts on the environment or amenity of existing and future occupiers within or around proposed developments'. The policy outlines that this includes residential amenity issues including noise and light.

- 5.5.2 The proposals have been designed with embedded mitigation for noise (as described at Section 3 of this Statement). The Noise Assessment submitted with this application outlines the acceptability of the Development including the potential impact on surrounding residential properties. The potential noise arising from the development is anticipated to be generally below existing background noise, when observed from surrounding properties. The report concludes that when assessed on a worst-case basis, noise from the Development is predicted to have a low impact and noise levels fall within the Lowest Observed Adverse Effect Level (LOAEL). The effects on amenity are therefore considered acceptable in terms of noise.

- 5.5.3 There will be no lighting on Site, so there are not concerns regarding the potential for light pollution. A glint and glare assessment is submitted with the planning application which assesses the potential impact of glint and glare reflecting off the panels on the surrounding area. The report concludes that the Development is acceptable in terms of potential effects and no mitigation is required. The effects on amenity are therefore considered acceptable in terms of lighting and glint and glare.

5.6 Biodiversity

- 5.6.1 Policy BNL3 (biodiversity) supports development which contributes towards protecting or improving local biodiversity or geodiversity and delivering net gains in biodiversity wherever possible.
- 5.6.2 The Site is currently arable fields which has limited ecological value. The Development would provide gains in biodiversity by supplementing the existing vegetation and hedgerows surrounding the application Site with significant landscape planting proposals, as described in Section 3 of this Statement. A landscaping plan and a woodland planting plan are submitted with this application.
- 5.6.3 In addition, the temporary use of the land as a solar farm will provide opportunities for improved grassland species under the solar array. An Ecological Appraisal is submitted with the planning application which describes how existing habitats on Site are proposed to be enhanced. As such the Development would support this policy.

5.7 Highways and Traffic

- 5.7.1 Policy INF2 'Sustainable Transport' outlines that *'planning permission will be granted for development where ...travel generated by development, including goods vehicle movement, should have no undue detrimental impact upon local amenity, the environment, highway safety and the efficiency of transport infrastructure...'*
- 5.7.2 The access strategy as described in Section 3 of this report involves the creation of a new vehicular access from the road running along the eastern boundary of the Site, which will form the principle Site access. The main traffic generation would be during the construction period which would be relatively short. Construction traffic would be routed east to west through the Site and cross over Lullington Road via a new access on the east side of Lullington Road, directly opposite an existing access to the west of Lullington Road.
- 5.7.3 The Construction Access Statement describes how the relevant visibility splays are achieved from the access points.
- 5.7.4 A Construction Management Plan will be in place, to be approved by South Derbyshire District Council, to manage the safe and considerate construction of the Site. Further details of the Plan are included as part of the draft Construction Access Statement submitted with this application.
- 5.7.5 Once operational, traffic movements would be minimal with only occasional maintenance access required. The Development would likely result in a decrease in vehicular movements to/from the Site, and the type of vehicles is likely to be smaller than the farm vehicles/tractors. The development will not cause disruption to the safe and free flow of traffic. The Development are therefore considered to be in accordance with Policy INF2.

5.8 Drainage and Flooding

- 5.8.1 Policy SD2 'Flood Risk' outlines *'suitable measures to deal with surface water will be required on all Sites in order to minimise the likelihood of new development increasing flood risk locally. Any developments that could lead to changes in surface water flows or increase flood risk should be managed through the incorporation of Sustainable Drainage Systems (SUDS), which mimic natural drainage patterns, unless this is not technically feasible, or where it can be demonstrated that ground conditions are unsuitable for such measures.'*

- 5.8.2 Policy SD3 'Sustainable Water Supply, Drainage and Sewerage Infrastructure' outlines *'The Council will work with Derbyshire County Council, Water Companies, Developers, and other Authorities and relevant stakeholders to ensure that South Derbyshire's future ... drainage infrastructure are managed effectively in a coordinated manner by ... Working with the County Council (as Lead Local Flood Authority or other appropriate body), to ensure new developments incorporate sustainable drainage schemes that ... mimic natural drainage, wherever practicable. In bringing forward SUDS, as a means of managing surface water run-off, developers will be expected to design schemes to improve river water quality and reduce pressure on local drainage infrastructure and deliver biodiversity gain on Sites ... Surface water from new development will be expected to be managed using SUDS; discharge to watercourse; or connection to surface water mains sewer'*.
- 5.8.3 The Site is located within Flood Zone 1 (very low risk) as shown on the Environment Agency flood zone mapping.
- 5.8.4 The Flood Risk Assessment submitted with this planning application outlines that all forms of flooding have been considered and the Site is generally at 'low' risk of flooding from all sources. There are, however, small isolated areas where there is the risk of 'medium' to 'high' risk surface water flooding. Flood mapping defines 'high' risk as flooding with a greater than 1 in 30 (3.3%) chance of flooding in any year. The solar panels are supported on posts that elevate the panels above ground level as described in the Flood Risk report submitted with this application. Neither will the development increase the risk of flooding, both on or off the Site.
- 5.8.5 The existing fields comprise ground conditions that are largely cohesive in nature, with smaller areas of granular soil. Rainwater will naturally run off the cohesive areas and into the local watercourses, whilst during extreme events where rainfall exceeds the immediate infiltration capacity of the granular subsoil, surface run-off will continue to drain into the local watercourses as it does now.
- 5.8.6 The solar panel arrays are not considered to prevent direct infiltration into the ground and will allow rainwater to drain freely into the ground. The Site would be landscaped with grassland and vegetation surrounding and beneath the arrays. The Development will result in the installation of a small substation and associated curtilage and inverters. These will be positioned on small areas of impermeable surfaces that would not have any measurable impact on surface water drainage running off-Site.
- 5.8.7 Notwithstanding this, a drainage strategy has been developed for the Site to manage the flow of water across and off the Site. The drainage strategy has been designed with regard to protecting the River Mease SSSI/SAC drainage catchment. The drainage strategy, which includes swales, as described at Section 3 of this Statement would be implemented prior to construction of the array, and a soil handling and management strategy (a draft of which is submitted for consideration with this application) would be in place to protect the River Mease drainage catchment. The Development is therefore considered to comply with Policies SD2 and SD3.

6 Conclusion

- 6.1.1 The principle of locating a solar farm on the application Site is supported by National and Local planning policies. In particular, adopted planning policy allows for renewable energy developments to be located within the countryside, subject to potential environmental impacts being considered to be acceptable. The Site Selection Assessment (included at **Appendix 4**) includes a review of brownfield Sites, and agricultural land value across the district, demonstrating there is no sequentially preferable Site, and that areas of higher agricultural land value are preserved.
- 6.1.2 The Site has also been selected for its lack of physical, historical and environmental constraints, and its topography, which allow for effective and sensitive landscape screening of the Development within close proximity to the Site, and within the wider landscape.
- 6.1.3 Public access through the Site is maintained, and would be enhanced by new planting and trails within the woodland for recreation. This will add variety to the recreational opportunities available within the area. The potential impact on the public right of way running through the Site is justified as any effects would be temporary and minimised by Year 15 when planting has matured. Overall, this mitigation and the other benefits of the Development (including the ecological enhancements and contribution to sustainable renewable energy) outweigh the potential harm.
- 6.1.4 Care has been taken to mitigate the impact on surrounding residential properties by setting the Development back from houses by at least one field, and providing landscape mitigation in consultation with local residents.
- 6.1.5 The Development will provide gains in biodiversity by supplementing the existing vegetation and hedgerows surrounding the application Site with a range of native species. There will be significant woodland planting, which will support the National Forest Strategy, increasing the woodland planting on Site from around 1% to around 10%. In addition, the temporary use of the land as a solar farm will provide opportunities for improved grassland species planted in-between the solar panels which will contribute to enhancing biodiversity.
- 6.1.6 The Development is acceptable in respect of Flood Risk, and an appropriate sustainable drainage strategy is proposed to manage the potential impacts of the Development on the River Mease drainage catchment.
- 6.1.7 The existing, reinforced and new landscape planting, screens potential views of the Development from historic assets within the surrounding area.
- 6.1.8 Existing and new access points can be utilised to provide safe highway access for the construction, operation and decommissioning of the development.
- 6.1.9 Construction and decommissioning of the development would be managed through a Construction Environment Management Plan (to be approved as part of planning conditions). This would prescribe Site access arrangements, movements, working hours and practices and environmental matters, to manage potential impacts to local people and the environment.
- 6.1.10 To conclude, there is a recognised need and support for renewable energy technology through National and Local planning policy, and this development would contribute towards the targets set for the UK's greenhouse gas emission reduction and increasing the country's energy supply from renewable sources. This is a significant benefit of the scheme. The Development accords with relevant local and national planning policies, and should, therefore, be approved without delay.

Appendix 1: Environmental Impact Assessment Screening Opinion



Applicant:
Sarah Clinch

Ref. No. DMOT/2020/1374
Made valid on: 1 December 2020

DECISION NOTICE

Description and location of proposal: Screening request under The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 relating to Land north of Lullington, Swadlincote

Decision made: In exercise of its powers as the Local Planning Authority under the Town and Country Planning Act 1990 and related subordinate legislation, South Derbyshire District Council hereby issues the following Screening Opinion.

On the basis of information submitted and having regard to additional environmental information collected by the Local Planning Authority to inform this opinion, I can confirm that the development described within your Screening Request, and as summarised above, is captured by the criteria and thresholds set in paragraphs 3 (a) of Schedule 2 of the Regulations; but in the opinion of South Derbyshire District Council, having taken into account the criteria in Schedule 3 to the Regulations, the proposal would not likely give rise to significant effects on the environment by virtue of factors such as its nature, size and location. In coming to the above view account has been taken of the advice contained in section 4 of the Planning Practice Guidance, in particular paragraphs 031 and 032 (screening Schedule 2 projects), and the evidence submitted alongside the proposal. Accordingly the District Council **does not** consider the proposed scheme to be EIA development and **will not require** the submission of an Environmental Statement in support of the proposal.

You are advised of the following matters:

- a. A copy of this Screening Opinion has been placed on the planning register, in accordance with the Regulations. In addition a screening matrix setting out the issues considered by the District Council in making this decision has also been placed on the register, a copy of which is appended.
- b. You are advised to seek pre-application advice for the proposed development. Further advice on applying for advice is available at www.southderbyshire.gov.uk/planning.

Right of appeal to the Secretary of State: if you are aggrieved by the decision of the Local Planning Authority to refuse permission, then you can appeal to the Secretary of State under Section 78 of the Town and Country Planning Act 1990 within 6 months of the date of this notice. The Secretary of State can allow a longer period for giving notice of an appeal but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal. Appeals must be made using a form which you can get online at www.gov.uk/planning-inspectorate or from the Planning Inspectorate at Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN. In practice, the Secretary of State does not refuse to consider appeals solely because the Local Planning Authority based their decision on a direction given by the Secretary of State. Further details can be found online at www.gov.uk/planning-inspectorate.

Enquiries: Any correspondence or enquiries concerning this decision should be sent to planning@southderbyshire.gov.uk quoting the above reference number.

Steffan Saunders

Authorised Officer of the Council

Date: 22 December 2020

1. CASE DETAILS			
Ref No.	DMOT/2020/1374	Brief description of the project/development	The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, Request for Screening Opinion (Regulation 6) for a proposed development of a ground mounted solar farm and associated infrastructure on land north of Lullington, Swadlincote.
Applicant	Lanpro on behalf of Lullington Solar Farm Ltd.		
LPA	South Derbyshire District Council		
2. EIA DETAILS			
Is the project Schedule 1 development according to Schedule 1 of the EIA Regulations?			No
If YES, which description of development (THEN GO TO Q4)			
Is the project Schedule 2 development under the EIA Regulations?			Yes
If YES, under which description of development in Column 1 and Column 2?			3(a)
Is the development within, partly within, or near a 'sensitive area' as defined by Regulation 2 of the EIA Regulations?			Near to River Mease Special Area of Conservation.
If YES, which area?			
Are the applicable thresholds/criteria in Column 2 exceeded/met?			Yes
If yes, which applicable threshold/criteria?			The area of development exceeds 0.5ha
3. LOCAL PLANNING AUTHORITY (LPA)/SECRETARY OF STATE (SOS) SCREENING			
Has the LPA or SoS issued a Screening Opinion (SO) or Screening Direction (SD)? (In the case of Enforcement appeals, has a Regulation 37 notice been issued)			No
If yes, is a copy of the SO/SD on the file?			N/A
If yes, is the SO/SD positive?			N/A
4. ENVIRONMENTAL STATEMENT (ES)			
Has the appellant supplied an ES for the current or previous (if reserved matters or conditions) application?			N/A

When completing this document in relation to an enforcement appeal, the undersigned officer has had regard to the project as alleged in the relevant enforcement notice when referring to the project/development.

5: Screening Questions		(Part 2a) / (Part 2b) – Answer to the question and explanation of reasons (Yes/No or Not Known (?)) or N/A	(Part 3a) / (Part 3b) (only if Yes in part 2a) – Is a Significant Effect Likely? (Yes/No or Not Known (?)) or N/A
		Briefly explain answer to Part 2a and, if applicable and/or known, include name of feature and proximity to site (If answer in Part 2a / 2b is 'No', the answer to Part 3a / 3b is 'N/A')	Is a significant effect likely, having regard particularly to the magnitude and spatial extent (including population size affected), nature, intensity and complexity, probability, expected onset, duration, frequency and reversibility of the impact and the possibility to effectively reduce the impact? If the finding of no significant effect is reliant on specific features or measures of the project envisaged to avoid, or prevent what might otherwise have been, significant adverse effects on the environment these should be identified in bold.
1 Natural Resources			
1.1 Will construction, operation or decommissioning of the project involve actions which will cause physical changes in the topography of the area?	Yes	Site exceeds 69ha and generally lies around 80-85AOD (above ordnance datum). It falls away slightly to the south and west.	No Due to the nature of the development the potential for physical changes in topography are very limited. The proposal will comprise of the installation of photovoltaic (PV) panels laid out in arrays of rows running north/south across the site. Panels will be at a maximum of 4.25 meters high and will be will consist of a ground mounted structure with solar panels on top. The mounting posts will be pile-driven approximately 1.5 metres into the ground for support, dependent on ground conditions. These supporting systems are designed to avoid the use of mass concrete foundations on site. Only around 0.5% of the site would be disturbed by the proposed development.
1.2 Will construction or operation of the project use natural resources above or below ground such as land, soil, water, materials/minerals or energy which are non-renewable or in short supply?	Yes	The site area is currently productive farmland and development could lead to the loss of productive Best and Most Versatile (BMV) agricultural land	No The soil data submitted alongside the screening request indicates that 48% of the site is classed as BMV land (grades 2 and 3a) whilst 49% falls outside the definition of BMV being grade 3b. However, the project proposals are reversible subject to soil quality being maintained through construction and operation (a Soil Handling and Protection Strategy is likely to be required as part of the mitigation to ensure that sites doesn't not affect the River Mease Special Area of Conservation) . Post construction the development will not use water, minerals or fuels but will generate renewable energy sufficient to power around 15,000 homes ¹ or around 1/3 of homes in South Derbyshire
1.3 Are there any areas on/around the location which contain important, high quality or scarce resources which could be affected by the project, e.g. forestry, agriculture, water/coastal, fisheries, minerals?	Yes	Site is located in a largely rural area surrounded by roads, woodland and agricultural land. The village of Lullington is located around 0.5km to the south.	No Development would be largely self-contained being located within 10 or so agricultural fields which are largely surrounded by hedgerows. Development could lead to the loss of productive arable land for the duration of the scheme (indicated as around 40 years).

¹ <https://www.solar-trade.org.uk/solar-farms/>

2 Waste				
2.1 Will the project produce solid wastes during construction or operation or decommissioning?	Yes	Development would create construction and demolition waste during the construction and decommissioning phases. It is unlikely to generate waste during site operation.	No	Most waste would be generated during site build out and decommissioning post operation. It is likely that waste storage and disposal will partly be mitigated by existing legislative requirements and the proposals made by the applicant to submit a Construction Environment Management Plan (CEMP) alongside any planning application
3 Pollution and Nuisances				
3.1 Will the project release pollutants or any hazardous, toxic or noxious substances to air?	Yes	Limited fuels, or exhaust from combustion engines during construction and decommissioning. Potential for dust generation mainly during construction and decommissioning.	No	Construction related impacts would be time limited and transient. CEMP proposed which will include measures to limit windblown dust. Measures outlined include damping of haul roads to minimise releases of fugitive dust; covering of friable materials whenever possible; covering of lorries transporting friable materials when moving around the site. No longer term operational effects are likely given the location of site away from sensitive areas or receptors.
3.2 Will the project cause noise and vibration or release of light, heat, energy or electromagnetic radiation?	Yes	Limited. Potential for noise and vibration during construction phase associated with ground works, and pile driving panel mounts.	No	No significant site sensitivities identified. Most notable impacts are likely during the construction and decommissioning phase, although given the location of the site and the likely transient nature of impacts during construction it is likely residual impacts in respect of noise and vibration could be appropriately controlled via standard condition to restrict construction working hours etc.
3.3 Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Yes	Activities associated with redeveloping the site could mobilise silts and sediments and increase nutrient inputs into local watercourses which are tributaries of the River Mease Special Area of Conservation (SAC). Any increase in silts could harm the integrity of the SAC downstream.	No	This issue has been considered in depth within the draft Habitat Regulations Assessment (HRA) Appropriate Assessment appended to this proforma. However, this concludes that subject to mitigation measures being secured the development will not have an adverse effect on the integrity of the River Mease SAC. The Measures required to prevent likely significant effects occurring include: - The submission of a CEMP to inform site build out and decommissioning. This should either include within it, or as a separate document a Soil Handling and Protection Strategy - Consideration of how vegetation losses can be minimised and how appropriate vegetation can be reinstated post development or decommissioning as part of the Soil Handling and Management Strategy, or as part of a Landscape Environment Management Plan - Inclusion of a positive drainage strategy based on NFM principles to address increased runoff/or sediment mobilisation that may occur as a result of the proposed development.

3.4 Are there any areas on or around the location which are already subject to pollution or environmental damage, e.g. where existing legal environmental standards are exceeded, which could be affected by the project?	Yes	River Mease SAC. The River Mease currently suffers from the effects of point source and diffuse water pollution which includes, but is not limited to, surface water run-off, road run-off, agricultural run-off and run-off from the urban environment. Levels of phosphates (p) in the river exceed the recognised conservation limits of 0.04mg/l for the Gilwiskaw Brook and 0.05mg/l for the River Mease as agreed with the Environment Agency. Heavy metals are also currently exceeding environmental standards (EQS) and probable likely effect (PEL). Any development proposal within close proximity of the River Mease or its tributaries could have likely significant effects on the River Mease SAC/Site of Special Scientific Interest (SSSI) which need to be ruled out or mitigated before planning permission is granted.	No	The extensive nature of the scheme offers opportunity to integrate an appropriate rural sustainable drainage system into site design to ensure that silts/sediments in runoff can be attenuated on site prior to the discharge into any tributaries of the SAC. The measures summarised above (and considered in detail in the HRA appended to this report) can provide the necessary mitigation to ensure that runoff from the site poses no risk to the SAC.
4 Population and Human Health				
4.1 Will there be any risk of major accidents (including those caused by climate change, in accordance with scientific knowledge) during construction, operation or decommissioning?	No	Limited consideration of flood risk in the screening request letter. No information presented on socio economic issues or other climate change effects, although given the nature of the scheme no effects are likely	No	N/A
4.2 Will the project present a risk to the population (having regard to population density) and their human health during construction, operation or decommissioning? (for example due to water contamination or air pollution)	No	Very limited risk to existing and future population given the nature and location of the scheme.	No	N/A
5 Water Resources				
5.1 Are there any water resources including surface waters, e.g. rivers, lakes/ponds, coastal or underground waters on or around the location which could be affected by the project, particularly in terms of their volume and flood risk?	Yes	The River Mease (SAC) is not currently meeting flow targets. This is due to excess water from discharges entering the river system. This is causing the loss of naturalised low flow conditions which are considered necessary for the long-term health and integrity of the site	No	This issue is considered in greater detail in the appended HRA Appropriate Assessment. However, this rules out the potential for likely significant effects on the basis that no abstraction from, or addition of, water from the River Mease will be required during the construction or operational phase of the proposed development. Whilst limited changes to hydrology could occur on site these will be generally beneficial, as any water attenuated (as part of any positive drainage system) in the site and discharged at a rate slower than the present greenfield rate. However, overall the scheme will not affect the overall flows into the catchment or contribute towards restoring low flow conditions in the SAC.

6 Biodiversity (Species and Habitats)				
6.1 Are there any protected areas which are designated or classified for their terrestrial, avian and marine ecological value, or any non-designated / non-classified areas which are important or sensitive for reasons of their terrestrial, avian and marine ecological value, located on or around the location and which could be affected by the project? (e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands, undesignated nature reserves or parks. Where designated indicate level of designation (international, national, regional or local)).	Yes	The site is within the Impact Risk Zone (IRZ) of the River Mease SSSI and SAC which is located 1.78 km to the south. Proposals would not lead to any losses or directly affect the SAC. There are 12 Local Wildlife Sites (LWS) / potential Local Wildlife Sites (pLWS) within 2 km of the site. The site is comprised largely of arable / improved grassland fields and associated hedgerows (some of which may qualify as important). Other habitats included scattered trees, poor semi-improved grassland, scrub, tall ruderal herbs, semi-natural broad-leaved woodland and standing water	No	The site is located outside of the SAC, however potential pathways exist which could allow nutrients to mobilise and be conveyed to the SAC. These could harm the interest features identified in the Conservation Objectives of the SAC. Measures are outlined above (and in the appended Draft Stage 2 HRA (Appropriate Assessment)) to ensure that harm to this site can be avoided. Local Wildlife Sites (LWS) and potential LWS (pLWS) are non-statutory designations of county importance. None of these are located within the site. There are a number of Biodiversity Action Plan Priority Habitats located in the site area, although it is likely that harm to these can be avoided through the sensitive design and layout of the site.
6.2 Could any protected, important or sensitive species of flora or fauna which use areas on or around the site, e.g. for breeding, nesting, foraging, resting, over-wintering, or migration, be affected by the project?	Yes	The site provided suitable habitat for the following species / species groups: - Great crested newts; - Reptiles; - Roosting, foraging and commuting bats; - Badgers; and - Breeding birds (particularly farmland assemblages) All of which could be affected during construction/decommissioning and operation.	No	Significant impacts during construction would be unlikely due to the transient and time limited nature of construction. Moreover existing legislation will provide a degree of protection for any protected and notable species. Further Habitat/Species surveys are also proposed to allow detailed measures to safeguard protected species and habitats as follows: - Hedgerows; - Great Crested Newt - Reptiles; - Roosting bats; - Foraging and commuting bats (dependent on the outcome of LPA consultation). - Badgers; and - Wintering and breeding birds. Subject to the identification of appropriate mitigation strategies to these species/habitats it is unlikely given the characteristics of the development that likely significant effects will arise.
7 Landscape and Visual				
7.1 Are there any areas or features on or around the location which are protected for their landscape and scenic value, and/or any non-designated / non-classified areas or features of high landscape or scenic value on or around the location which could be affected by the project? ² Where designated indicate level of designation (international, national, regional or local).	Yes	Some listed buildings and other heritage designations located within the general vicinity. No local, or national landscape designations are present.	No	Site contains many attributes that are strongly representative of the local landscape character. However, the site is not located in a sensitive area as defined for the purposes of screening for EIA. Landscape impacts, given the nature of the scheme would be notable though not significant. Moreover, the proposed removal of the arguably more sensitive western part of the site, (in landscape/visual amenity terms) compared to that initially proposed, together with proposals to deliver 30% tree planting in line with national forest tree planting requirements will further reduce likely effects. A Landscape and Visual Impact Assessment (LVIA) will be submitted alongside any future development application.

² See question 8.1 for consideration of impacts on heritage designations and receptors, including on views to, within and from designated areas.

7.2 Is the project in a location where it is likely to be highly visible to many people? (If so, from where, what direction, and what distance?)	Yes	There are a limited number of homes and businesses located nearby, the site being located in a mainly rural area. There are a number of public rights of way which cross or are located close to the site as well as a number of rural lanes where views of the site could be possible.	No	Significant landscape and visual amenity effects are not likely due to the lack of sensitive landscape designations and the nature of the development proposals. Solar panels will cover the majority of the project area and will be mounted on frames 2.5m high, although these will tilt to increase light capture so panels could have a maximum height of 4.25m at times. Additional screening and tree planting is proposed. The submitted LVIA to inform the screening assessment includes viewpoints from agreed locations. However, due to the nature proposals it is unlikely the development will be highly visible, although clearly could be prominent in the landscape from public and private areas close to the site. Screening measures including tree planting are proposed to reduce the likely effects of the development on visual amenity. Subject to the delivery of an appropriate screening strategy and the appropriate management of any measures it is likely that effects could be reduced as landscaping matures. Landscape impacts are likely to be reversible following reinstatement of farmland post development.
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8 Cultural Heritage / Archaeology

8.1 Are there any areas or features which are protected for their cultural heritage or archaeological value, or any non-designated / classified areas and/or features of cultural heritage or archaeological importance on or around the location which could be affected by the project (including potential impacts on setting, and views to, from and within)? Where designated indicate level of designation (international, national, regional or local).	Yes	The site does not accommodate any listed buildings or Scheduled Monuments (SAM). The nearest Scheduled Monument (SAM) is located around 9km to the north of the site within Castle Gresley, (Castle Gresley Motte and Bailey Castle). The nearest Conservation Area is located in Lullington, which is approximately 1 km south of the application site. Three statutory designated heritage assets (a Conservation area (Lullington) and two listed buildings) together with one unlisted building have been identified within 1km of the study site. Listed buildings include: - The Church of All Saints, Grade II*; - Lady Leys Farmhouse, Grade II; The non designated heritage asset which could be affected by the proposals is Grafton House.	No	Based on this Heritage Impact Assessment submitted by the applicants alongside the screening request it is concluded that no heritage assets will be directly affected physically by the proposed development (none are on site). There is potential for the setting of Lullington village conservation area, the Church of All Saints, and Lady Leys Farmhouse to be affected however heritage assessment concludes that there will be no harm to the contribution of setting to the significance of the Church of All Saints, and negligible to no appreciable harm to the contribution of setting to the significance of Lady Leys Farmhouse and Lullington village conservation area. One building of local interest has been identified that will experience a change to the construction of setting to its significance. This is Grafton House an unlisted building located on the norther side of the study site. This is identified as likely to experience a low (to medium) level of effect on the contribution of setting to its significance resulting in a negligible to slight level of harm to the contribution of setting to its significance. Given the nature of the site the lack of sensitive heritage features (ie World Heritage Site/scheduled ancient monument) and the intervening distance between the identified heritage assets locally the project will not have a likely significant effect. An updated HIA is proposed in support of the final planning application.
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9 Transport and Access				
9.1 Are there any routes on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the project?	Yes	There is a single public right of way which passes through the site. SD29/1/2. There are a number of other PROW within the vicinity of the site which will be unaffected by the development.	No	This footpath will be maintained as part of the proposals. It is intended that the footpath will remain open during construction. Procedures for construction vehicles crossing the footpath will be considered within the Construction Traffic Management Plan. Within the wider area there are a few other footpaths which will also be unaffected by the project. No closures to footpaths are proposed. Given that the footpaths within and around the site will remain open during all phases of development no significant effects are considered likely.
9.2 Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	No	The site is located in a rural area away from key/major transport routes susceptible to congestion.		The main traffic generation would be during the construction/ decommissioning phases which would be relatively short in duration. The applicant indicates that in advance of the construction phase, existing field accesses may need to be improved to provide adequate geometry and visibility facilitating safe two-way access for the largest vehicles. Moreover, it is noted that to minimise the potential construction impacts, the preparation of a Construction Environmental Management Plan (CEMP) is proposed prior to construction to ensure any potential impacts are minimised. The CEMP would outline the allocated responsibilities, procedures and requirements for site environmental management. Subject to mitigation during construction and given negligible operational impacts no likely significant effects anticipated.
10 Land Use				
10.1 Are there existing land uses or community facilities on or around the location which could be affected by the project? E.g. housing, densely populated areas, industry / commerce, farm/agricultural holdings, forestry, tourism, mining, quarrying, facilities relating to health, education, places of worship, leisure /sports / recreation.	Yes	Limited housing and commercial uses. It is unlikely to notably effect other rural land uses such as agriculture or forestry sites.	No	Given the rural character of this area and the lack of receptors that could be affected, the largely self-contained nature of the proposals and the temporary nature of construction and decommissioning phases effects. Likely significant effects are not anticipated. In addition, measures to address potential effects are also outlined (in the applicants screening request materials and this proforma) which will further minimise disruption or other impacts on local facilities and communities.
10.2 Are there any plans for future land uses on or around the location which could be affected by the project?	No	--	No	N/A.
11 Land Stability and Climate				
11.1 Is the location susceptible to earthquakes, subsidence, landslides, erosion, or extreme /adverse climatic conditions, e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?	No	--	No	N/A

12 Cumulative Effects				
12.1 Could this project together with existing and/or approved development result in cumulation of impacts together during the construction/operation phase?	Yes	Potential for in combination effects on the interest features of the River Mease SAC. Potential to have cumulative impacts with other energy proposals within the vicinity including a 49.9MW Solar Farm proposal at Haunton.	No	Subject to mitigation measures outlined it is likely effects on the SAC could be eliminated. Further consideration is set out in the HRA Stage 2 (Appropriate Assessment) appended to this report. Cumulative landscape effects with known proposed energy projects in planning (20/01245/FULM). However, having reviewed the Landscape and Visual Impact Assessment (LVIA) for this site there is unlikely to be any intervisibility between the two sites given local topography, vegetation and land use. This is confirmed in the LVIA for the Haunton scheme which states views from the ZTV areas north and west of the site are difficult to find and, where they do exist, are glimpses through trees
13 Transboundary Effects				
13.1 Is the project likely to lead to transboundary effects? ³	No	N/A	No	N/A

5. CONCLUSIONS – ACCORDING TO EIA REGULATIONS SCHEDULE 3		
Whilst this is major development project, with a total area of almost 70ha, it is an extensive and relatively low impact development. The greatest effects could occur during time limited construction and decommissioning phases. The lifespan of the scheme is given s 40 years and it is likely that effects are reversible. This is confirmed within the above proforma. Given the proximity of this site to the River Mease Special Area of Conservation (SAC), I have considered the potential for the scheme to have an adverse effect on the interest features of the SAC which whilst nearly 2km downstream is in hydraulic connectivity with this site. To this end, and as recommended in government guidance⁴, a draft Stage 2 Habitat Regulations Assessment (HRA) Appropriate Assessment has been prepared to inform decision-making. The finding of this assessment have been integrated into the screening process and have informed the final screening decision. Subject to incorporating the mitigation outlined in request for a Screening Decision by the applicant and having reviewed the assembled information submitted by the applicant, as well as other environmental information retained by the Council, including that relating to the River Mease SAC, it is my view that there is no requirement for EIA in respect of this project.		
6. SCREENING DECISION		
If a SO/SD has been provided do you agree with it?	N/A	
Is it necessary to issue a SD?	Yes	
Is an ES required?	No	
7. ASSESSMENT (EIA REGS SCHEDULE 2 DEVELOPMENT)	OUTCOME	
Is likely to have significant effects on the environment	ES required	

³ The Regulations require consideration of the transboundary nature of the impact. Due to the England's geographical location the vast majority of TCPA cases are unlikely to result in transboundary impacts.

⁴ See <https://www.gov.uk/guidance/environmental-impact-assessment#Sensitive-areas>. This guidance states In practice, the likely environmental effects of Schedule 2 development will often be such as to require an Environmental Impact Assessment if development is to be located in or close to sensitive sites. It may also be necessary to undertake an appropriate assessment under the Conservation of Habitats and Species Regulations 2010 [sic] if the proposed development is likely to have a significant effect on a European site.

Not likely to have significant effects on the environment	ES not required	✓
More information is required to inform direction	Request further info	N/A

COMPLETED BY	Kevin Exley MRTPI PIEMA	CHECKED	
DATE	21/12/2020	DATE	22/12/2020

Date: 7th May 2021

Our ref: 1357

Mr Kevin Exley
South Derbyshire District Council
Civic Offices
Civic Way
Swadlincote
DE11 0AH

Sent via email to: kevin.exley@southderbyshire.gov.uk

Dear Mr Exley,

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, Request for Screening Opinion (Regulation 6) for a proposed development of a ground mounted solar farm and associated infrastructure on land north of Lullington, Swadlincote, on behalf of Lullington Solar Farm Ltd (the Applicant).

In accordance with Regulation 6 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regs') this letter is a formal request for a Screening Opinion from South Derbyshire District Council as to whether an EIA is required for the proposed development referred to above.

This request is made further to the issuing of an earlier screening opinion reference DMOT/2020/1374. The proposals have been updated since the issuing of the screening decision, including the height and type of solar panels proposed. The revised proposals are for lower fixed panels of a maximum height of 3 metres. The screening letter also confirms the ecology work being undertaken and the approach to planting proposals further to conversations with stakeholders. The access strategy has been updated to minimise potential disruption during construction/decommissioning of the project.

Regulation 6 advises that requests for a screening opinion should include the following:

- (a) a plan sufficient to identify the land;
- (b) a description of the development including:
 - a description of the physical characteristics of the development and, where relevant, any demolition works;
 - a description of the location of the development with particular regard to the environmental sensitivity nature and purpose of the development and its possible effects on the environment;
- (c) a description of the aspects of the environment likely to be significantly affected by the development;
- (d) to the extent the information is available, a description of any likely significant effects of the proposed development on the environment resulting from:
 - the expected residues and emissions and production of waste, where relevant; and
 - the use of natural resources, in particular soil, land, water and biodiversity; and



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(e) other information or representations as the person making request may wish to provide or make, including any features of the proposed development or any measures envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment.

The requirements of Regulation 6 are addressed within this letter.

EIA REGULATIONS

A project is considered EIA development if either it is listed in Schedule 1 of the Regs or is in Schedule 2 and exceeds one of the thresholds or criteria and is likely to have significant effects on the environment by virtue of factors such as its nature, size or location. The development described above does not fall into a project category under Schedule 1. The development is considered to fall within the project definitions of Schedule 2 3, (a) of the Regs *“Industrial installations for the production of electricity, steam and hot water (unless included in Schedule 1)”*.

Under this category, the threshold where EIA may be required is if the site area exceeds 0.5ha.

The site is not within a Sensitive Area as defined in Regulation 2(1).

Planning Practice Guidance provides further advice on determining whether or not significant effects are likely. Paragraph 057 and 058 include a table setting out indicative thresholds when significant effects are likely to occur, and key issues to consider for different development types.

For Category 3 (a) Industrial installations for the production of electricity, the table indicates that EIA is unlikely to be required for installations which have a thermal output of less than 50MW, key issues to consider are levels of emissions to air, arrangement for the transport of fuel and any visual impact. It should be noted that solar farms generate minimal thermal output.

THE SITE

The site subject of this EIA screening request covers an area of approximately 69.7 hectares and is located north of the village of Lullington and south of Raddle Farm Wood, Garlands Wood and Grange Wood. The site falls within Lullington Parish. The site location plan is included at **Appendix 1**.

The proposed site comprises of agricultural fields. The site is bounded by further agricultural fields to all boundaries. Lullington Road runs north/south through the site.

There is well established natural vegetation around the site, with the boundaries being made up of a mix of hedgerows with scattered trees. The boundaries between the fields are also made up of hedgerows. There is a Public Right of Way (PROW) crossing the site north to south. There are various field accesses into different parts of the site.

The site is within flood zone 1 as identified on the Environment Agency's Flood Risk maps. The site is not located within a groundwater source protection area.

The site is located within the South Derbyshire District Council area. The site does not accommodate any listed buildings. There are a number of listed buildings within 2km of the site. All of these are Grade II with the exception of the 'Church of All Saints' located within the centre of Lullington which is Grade II* listing which incorporates a spire of special architectural or historic interest.

The nearest Scheduled Monument (SAM) is located to the north within Castle Gresley, known as the 'Castle Gresley Motte and Bailey Castle'. This is located at approximately 9km north of the site. The nearest Conservation Area is within the village of Lullington centre which is approximately 1 km south of the application site.

Currently the land is in arable production. The land is classified as being 3 agricultural grade land. An Agricultural Land Classification survey has been undertaken to determine how much of this is Best and Most Versatile (BMV) land. The report is included at **Appendix 2**. Of the 67.8 hectares of the site in agricultural use, less than half (33.6ha) is classified as BMV. Whilst more than half the site is not BMV (52%) a Site Selection Assessment will be undertaken to accompany any planning application.

DESCRIPTION OF THE DEVELOPMENT

The key features of the development are:

- A ground mounted solar array. Panels are proposed to be mounted on a frame fixed into the ground;
- Substations and a DNO substation;
- Security fence and CCTV cameras; and
- A buried grid connection on site.

Please refer to **Appendix 3** for the draft proposed plan which depicts the development proposals.

Solar Panels

The solar pv panels proposed are a standard polycrystalline type which are intended for the daylight levels at this site. The installation is free draining through perimeter gaps around all panels and dispersed rainwater runoff. The proposal will comprise of the installation of photovoltaic (PV) panels laid out in arrays of rows running east/west across the site, the number of these will be dictated by the finalised layout. The height of the panels will be at a maximum of 3 meters.

The mounting structure for the panels is a metal frame securely fixed to the ground. It must be capable of withstanding appropriate environmental stresses for the location, such as wind or snow loading. The solar farm will consist of a ground mounted structure with solar panels on top, which would follow the movements of the sun. The structure may also provide a route for electrical wiring.

The mounting posts will be pile-driven approximately 1.5 metres into the ground for support, dependent on ground conditions and will easily be retrieved using similar hydraulic equipment when the solar farm is decommissioned and the land reinstated back to agricultural land. Such supporting systems are designed to avoid the use of mass concrete foundations on site. Only around 0.5% of the site would be disturbed by the proposed development.

The solar panels will then be installed at 15° from the horizontal and face in a southerly direction. The rows will be placed an appropriate distance apart, again in order to optimise solar collection per unit land area.

The solar farm would be connected into the grid via the overhead lines on site.

The development will also require the installation of associated infrastructure required for the running of a solar farm.

Cabinets would accommodate the inverter, transformer and associated equipment to convert DC energy produced by the arrays, into AC energy required by the national grid. It is envisaged there would be 9 inverters enclosed in cabinets. The locations of these are yet to be determined. The approximate size and elevations of these will be shown in the technical drawings submitted at any full application stage. There will also be a need for one DNO cabinet and control room on site. The substations will connect to the existing cables running across the site. They will be positioned on hardstanding and enclosed within a security fence.

It is only the Western Power Distribution substations their compound areas, and associated development including CCTV cameras and the switch room (along with access to the area) that will require permanent planning permission. The solar array and customer compound and substation would be decommissioned after a temporary period of 40 years and the land would be reinstated to arable agricultural use.

The site perimeter will be made secure by the construction of a 2 metre high security fence around the site boundaries. This will be constructed using wooden posts and wire mesh. Additional planting will be introduced for screening purposes where necessary between the fences and neighbouring roads/public footpaths.

The installation of CCTV cameras are likely to be required onsite for insurance purposes. The CCTV will be capable of viewing the solar pv farm only (without panning angles beyond). No floodlighting will be used as the CCTV cameras detect movement and have night vision capability in accordance with insurer's requirements. These will allow for constant monitoring, but will be positioned in such a way to prevent areas outside the site being monitored. The CCTV camera poles will be constructed in galvanised steel. As much of the equipment as possible will be colour coordinated with the landscape by using equipment, where possible, that is green in colour.

It is also proposed that grass mix will be planted underneath the panels.

Site Access

The best location for site access is being finalised. The access strategy will likely involve the creation of a new vehicular access from the road running along the eastern boundary of the site, which will form the principle construction site access. Construction traffic would be routed east to west through the site and cross over Lullington road via a new access (on the east side of Lullington Road), directly opposite an existing access to the west of Lullington Road (as shown on the draft site plan as an access track at plan at Appendix 3).

The main traffic generation would be during the construction period, which would be relatively short, and a Construction Environmental Management Plan is being prepared to provide routing and additional details on this. A draft construction routing plan is contained at Appendix 4.

Construction Environmental Management Plan (CEMP)

To ensure the potential construction impacts are minimised, the preparation of a Construction Environmental Management Plan (CEMP) is proposed prior to construction to ensure any potential impacts are minimised. The CEMP would outline the allocated responsibilities, procedures and requirements for site environmental management. It would include relevant site specific method statements, operating practices, and arrangements for monitoring and liaison with local authorities and stakeholders.

The Main Contractors undertaking the construction of the development would need to adopt and comply with the CEMP, allocate environmental management responsibilities to a site manager and ensure that all sub-contractors activities are effectively managed in accordance with the CEMP.

The CEMP would include measures to prevent sediment pollution arising from the construction or operation of the site impacting the River Mease SAC. This is described in the ecology section of this report, below.

A Soil Handling and Management Strategy (SHMS) would be put in place to protect the quality of the soil and potential impacts arising from run-off in relation to the River Mease SAC.

Drainage

There will be a positive Drainage Strategy for the site. This is likely to include the provision of swales along relevant boundaries. It is anticipated this will include a 500 m vegetated depression, formed within the natural low-point of the site and attenuate any water running off from the site toward the tributary of the River Mease along the north-eastern boundary of the site. This would be designed to slow the transit of surface water to the extent that sediment held in suspension will fall out and be captured before leaving site.

Operation & Maintenance

Once the solar farm is operational, traffic generated by it will be limited to that associated with occasional maintenance work.

Movement within the site will be by way of quad bike or small, farm utility vehicle. The Electricity Board will visit the site from time to time to check the apparatus. No on-site staff will be required to operate the solar farm and no staff offices or maintenance buildings needed within or near to the site. Some permanent equipment for monitoring the site will be held in one of the transformer enclosures and/or grid connection cabinet. Whilst this would typically be accessed remotely, it would be available for occasional physical access during routine visits.

The land between each row of cells and on the fringes of the site will be seeded with a grasses mix in strategic locations.

Noise impact is limited to the construction phase of the development, there would be minor impacts generated by the vehicle movements across the site coupled with the installation of equipment.

Once operational, the inverters which accompany the scheme may generate additional background noise levels; however, noise will be mitigated as any operational plant is enclosed. The specification sheet of the inverters would be included within any subsequent application. The arrays will be fixed and as such will not generate any noise.

Decommissioning

The scheme has been designed to have the lightest possible impact on the land in terms of structural loading. At the end of the 40-year period the structure, including all ancillary equipment and cabling, would be carefully dismantled and removed from the site. Materials would be reused or taken to an appropriate location for recycling or disposal. The site would be reinstated for full agriculture use.

Also accompanying this submission are:

- Initial Ecological Report prepared by WYG (**Appendix 5**)



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- Initial Landscape and Visual Impact Assessment and covering note prepared by Liz Lake Associates (**Appendix 6**)
- Initial Heritage Report and covering note prepared by Lanpro (**Appendix 7**)

REPRESENTATIONS UNDER REG 6 (C): POTENTIAL ENVIRONMENTAL EFFECTS

The development has the potential to give rise to environmental effects. These are identified below:

Ecology

An Ecological Appraisal (EA) was undertaken of an area including the site in August 2019. The EA comprised of a desk based data search and extended Phase 1 habitat survey. Since pre-application discussions the site area has been reduced from 90ha to 69.7ha. It is considered that this does not affect the opportunity to provide appropriate mitigation and enhancement as part of the proposals.

The EA found that there were two statutory designated sites for nature conservation with the potential to be affected by the proposed development. These were The River Mease Special Area of Conservation (SAC) and River Mease Site of Special Scientific Interest (SSSI). These sites are both approximately 1.78km south of the site. These were identified as the proposed development site falls within the Impact Risk Zone (IRZ) for the SSSI.

Solar farm developments have the potential to affect the River Mease SSSI. This is considered possible via impacts to watercourses that flow through or near to development sites and into the River Mease. These development proposals could result in impacts on the SAC/SSSI, as a tributary flows from the south-western corner of site (West Brook) to the River Mease. These impacts have been identified as having the potential to occur during construction and decommissioning via run-off, or via hydrological changes during operation.

These potential pathways to significant effects are therefore assessed as part of the 'Report to inform Habitats Regulations Assessment for Stages 1 and 2' prepared by WYG (submitted alongside this letter). The report is clear and states:

"the results from the Stage 2 Appropriate Assessment found that with mitigation, no impact on integrity (alone or in-combination) of the River Mease SAC is predicted.

During construction, the mitigation proposed should be described in detail within a CEMP and associated SHMS for the project, which could be secured by planning condition.

The mitigation measures in the CEMP would need to include as a minimum:

- *Installation of silt fencing;*
- *Damping of haul roads;*
- *Covering of friable materials whenever possible;*
- *Covering of lorries transporting friable materials when moving around the site;*
- *Risk assessments and toolbox talks for contractors doing any refuelling activities;*
- *Bunding of refuelling areas;*
- *Emergency incident strategy;*
- *Spill kits will be available on site at all times;*
- *Signage will be on site in contractors compounds relating to sensitivity of the nearby waterbody which leads to the River Mease SAC; and*
- *A waste disposal plan will be in place for the site, detailing where all waste generated will be stored prior to removal.*

During operation, mitigation would be provided by elements of the SHMS that would carry on after the construction phase. This would include monitoring requirements and remedial action triggers. The

hydrology of the site would ultimately change little during operation, but would be managed in accordance with the Drainage Strategy, supported by the LEMP.

During decommissioning, the measures for preventing impacts on the River Mease would be the same as those described in the CEMP. It is therefore proposed that prior to decommissioning a DEMP, is submitted to the Competent Authority for approval. Providing this at this stage is not considered practicable given that this will be prepared ~40 years in the future. This is due to legislative requirements and practical delivery options (i.e. technological advances) potentially rendering any current document obsolete”.

The ‘Report to inform Habitats Regulations Assessment for Stages 1 and 2’ referred to above identifies the following in relation to the impact of surface water pollution during construction and operation:

“Impacts of surface water pollution during construction: Alone and In-combination

As discussed in Section 3.4.1, the only potential pathways to LSE identified was in the form of surface water pollution, alone and in-combination. It was therefore recommended that mitigation in the form of avoidance for these effects could be secured within a CEMP. The measures that are considered necessary to completely avoid all possible effects on watercourses leading to the River Mease comprise:

- *Avoidance of working within 20 m of flowing watercourses where possible;*
- *Installation of silt fencing between works and flowing watercourses where works are within 20 m of flowing watercourses;*
- *Damping of haul roads to minimise releases of fugitive dust;*
- *Covering of friable materials whenever possible;*
- *Covering of lorries transporting friable materials when moving around the site;*
- *Risk assessments and toolbox talks for contractors doing any refuelling activities;*
- *Bunding of refuelling areas;*
- *Emergency incident strategy;*
- *Spill kits will be available on site at all times;*
- *Signage will be on site in contractors compounds relating to sensitivity of the nearby waterbody which leads to the River Mease SAC; and*
- *A waste disposal plan will be in place for the site, detailing where all waste generated will be stored prior to removal.*

These measures have been recommended based on a review of the following Pollution Prevention Guidelines (PPG) and Guidance for Pollution Prevention (GPP) which although superseded, are considered to provide useful advice (available from Negregs, undated):

- *PPG 1: Understanding your environmental responsibilities – good environmental practices;*
- *PPG 6: Working at construction and demolition sites;*
- *PPG 7: Safe storage – The safe operation of refuelling facilities;*
- *GPP 5: Works and maintenance in or near water;*
- *GPP 21: Pollution incident response planning; and*
- *GPP 22: Dealing with spills.*

In addition to the CEMP, a Soil Handling and Management Strategy (SHMS) has been prepared and will be submitted with the application. The primary role of this document is to provide the evidence relating to how the agricultural grade of the soil will be preserved so that it’s pre-development use can be reinstated. This document therefore relates to the construction, operation and decommissioning phases of the application.

During construction, the SHMS gives the details of how any soil excavated will be handled. The volumes of soil that this concerns have not been calculated. However, volumes are predicted to be extremely small and will be limited to small scale works for cabling trenches, sub-station foundations and swale formation. This is based on the piling construction method proposed for the panel supports. The key principles of the SHMS are that bunding of any soil will be away from areas where run-off could occur and reach the tributary of the River Mease, and that bunds will be stabilised by compacting or grassing again to minimise the risk of run-off to negligible levels.

With the application of this mitigation, and adherence to a detailed CEMP and SHMS, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination.

Impacts of surface water pollution during operation: Alone and In-combination

During operation, it has been identified that precipitation falling onto the solar panels may cause erosion and result in the formation of small surface water channels on site. This is considered most likely to occur immediately post-construction where ground disturbance impacts of construction may result in areas of bare earth and mud. To mitigate this effect, the whole site will be reseeded with a grassland mix as soon as practicably possible. This will therefore attenuate any water running off from panels and it is considered would reduce the risk of erosion to a negligible level.

In addition, the anticipated Drainage Strategy has included the provision of one swale along the northern boundary of the site and one on the western boundary of the site. These vegetated depressions will be formed within the natural low-point of the site and attenuate any water running off from the site toward the tributary of the River Mease. These will slow the transit of surface water to the extent that all sediment held in suspension will fall out and be captured before leaving site.

The provision of the swales is considered to be extremely precautionary. This is due to the site topography being so flat that the actual risk of surface water drainage being altered by the development is already extremely low. However, with the swales installed, this is considered to be reduced to a negligible level. The topography also suggests that with the scale of the swales proposed, no maintenance to clear built up sediment for the duration of the operation phase is predicted to be required.

With the application of this mitigation, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination.

Impacts of surface water pollution during decommissioning: Alone and In-combination

As discussed in Section 3.4.1, the only potential pathway to LSE identified was in the form of surface water pollution, alone and in-combination. It is therefore recommended that mitigation to avoid LSE could be secured within a Decommissioning Environment Management Plan (DEMP).

It is recommended to the Competent Authority that at this stage the measures within the DEMP should be considered to be the same as the CEMP described in Section 4.1. This is due to the implementation of the DEMP being ~40 years in the future. It is therefore not considered appropriate to attempt to prepare an accurate document now, as technological advances, equipment capabilities, environmental protection guidance and legislation may all have significantly changed. Instead, it is proposed that the Competent Authority could determine their AA based on likely details from the

CEMP, with a view to requesting submission and approval of a DEMP closer to the decommissioning program starting.

With the application of this mitigation, i.e. a DEMP, reviewed and approved closer to the start of the decommissioning program, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination”.

There are twelve Local Wildlife Sites (LWS) or Potential Local Wildlife Sites (pLWS) within 2km of the site. The closest of these is Hill Close Wood Pond, located 0.81km north-west of the site. The installation of a ground mounted solar farm is unlikely to have significant direct or indirect effects on any of the LWS or pLWS. This is based on the low quality of the habitats affected being unlikely to support significant numbers of mobile species from the LWS or pLWS e.g. birds and mammals. Also, where present, the habitats affected will be modified rather than lost as a result of the proposed development. In this regard, the site will retain the same, or potentially improved ecological value.

The EA found that the dominant habitat was intensive arable crops. This habitat had low ecological value in terms of botanical interest. For instance, no species rich field boundaries were found. The most ecologically valuable habitats were found to be the hedgerows and small wooded areas. As these will be broadly retained (albeit some additional access may be needed), no significant impacts on habitats are predicted.

The EA identified that the site had potential to support several protected and notable species and species groups. However, based on the habitats affected and associated data search records, the likelihood of important ecological features being present was considered to be low.

Based on the results from the PEA and understanding the details of both the construction and operational phases of the development, it is considered that further surveys for most ecological features is not necessary. This is based on using mitigation in the form of avoiding impacts on the most valuable habitats i.e. the hedgerows and woodland. For instance, bats are still likely to forage and commute across the site during operation. This was considered to apply to invertebrates, birds, bats, and other notable mammals e.g. brown hare, harvest mouse and hedgehog.

Further surveys were considered necessary for great crested newt and badger. Surveys for great crested newt will be completed in the 2021 season as it was identified that there were up to 17 waterbodies within 500 m of the boundary of the site. Whilst their presence in the area is unknown, arable land is typically considered a poor value terrestrial habitat for the species. Badger surveys were completed due to evidence of the species being recorded during the EA. These were completed in October 2020 and 10 active setts were found.

Breeding bird surveys are currently being undertaken. It was agreed with Natural England that Wintering Bird surveys were not necessary. Bat surveys are ongoing. Arboricultural surveys are being undertaken for the small sections of hedge proposed to be removed to facilitate access, and two trees proposed for removal because of shadowing impacts.

The potential mitigation requirements for impacts on both species can be determined at this stage, and for both species, mitigation approaches are well understood. In this regard and on the basis that

impacts to habitats would ultimately be temporary, it is not considered likely that significant impacts on either species would be likely. However, the survey information and mitigation will be needed from the perspective of compliance with wildlife protection legislation.

As part of the proposals there is an opportunity to incorporate ecological enhancements to the habitats on site. These could include:

- using species rich grass mixed beneath panels;
- infilling of gaps within retained hedgerows with native species;
- Installing bird nest boxes; and
- Installing bat boxes on retained trees.

In summary, it is predicted that there will be no significant environmental impacts on any ecological features that the site supports.

Landscape and Visual Effects

The site is located within the 'Mease/Sence Lowlands' Character Area and is of the 'Village Estate Farmlands' type.

The Site comprises a series of agricultural field parcels, forming an elongated shape running east to west following the generally regular field pattern and well-maintained hedgerows that have few trees. A single rural road and a public footpath cross north-south across the Site, as well as a line of overhead pylons. The Site forms part of the coherent and undulating village estate farmland landscape which has a backdrop of woodland belts and copses set within a gently undulating landform. Fields are bounded by well-maintained (but often low cut) hedgerows with occasional field trees and small copses with occasional ponds and individual trees. To the north of the Site the landscape is well wooded, which forms a backcloth in the wider landscape.

The Site forms part of the gently undulating Mease/ Sence Lowlands, primarily village estate farmlands lying at between approximately 85 and 80m AOD. In a wider context, the village estate farmlands landform falls generally west and south towards the lowland village farmlands as well as a narrow river valley (riverside meadows character type) associated with the River Mease to the south. The landscape has a backcloth of woodland, copses and woodland belts that serve to provide containment in the landscape, particularly to the north.

The Site falls within an area covered by The National Forest environmental project. The national Forest Strategy covers the period 2014-2029 and is creating thousands of hectares of new green infrastructure by requiring a portion of any new development to provide new green infrastructure. This included woodland, hedgerows, sustainable drainage systems and new habitats. South Derbyshire Local Plan Policy INF8 'The National Forest' states that for all industrial, commercial and leisure developments over 1ha, it is expected to incorporate tree planting and landscaping in accordance with National Forest Planting Guidelines, which would be 30% of a site. Notwithstanding, the proposals are not classified as an industrial, commercial or leisure development and therefore do not trigger the need for 30% additional of planting (or any other fixed percentage). Ongoing conversations with The National Forest Company have confirmed the acceptability of this approach.

The significant planting proposals are expected to increase woodland on site from around 1% to around 10%. This is in addition to additional landscape planting such as hedgerows and grassland.

The baseline LVIA included at **Appendix 6** concludes that the site makes a positive contribution to the local landscape character. This is where the existing character of the Site contains many attributes that are strongly representative of the local landscape character and a few incongruous elements that only detract from the local landscape character to a limited degree.

There are a number of viewpoints which have been included within the baseline work. The Council's comments on these received as part of the pre-application response are noted. The most sensitive portion of the site has been removed from the proposed site since the pre-application response was received, and further visual work has been undertaken. Discussion with the Council's landscape officer will be ongoing to agree viewpoints for the preparation of the full LVIA.

The developer will consider the need for additional planting and reinforcement of existing boundaries to mitigate any views and also provide biodiversity enhancements to the site. The aims of the National Forest will be considered in conjunction with landscape and ecology proposals.

We conclude this on the basis that the landscape is not particularly sensitive and the visual impacts likely to be minimal and can be mitigated through planting. Therefore, it is not considered that the development proposals will give rise to significant environmental effects and full consideration of landscape and visual issues will be investigated and assessed as part of the preparation of the full planning application.

Flood Risk

The site is located within Flood Zone 1 (very low risk) as shown on the Environment Agency flood zone mapping. The solar panel arrays are not considered to prevent direct infiltration into the ground and will allow rainwater to drain freely into the ground.

The solar panels are considered to allow direct infiltration into the ground. The site would remain landscaped with grassland and vegetation surrounding and beneath the arrays. The development proposals will result in the installation of a small substation and associated curtilage and inverters. These will be positioned on small areas of impermeable surfaces that would not have any measurable impact on surface water drainage running off-site. This is outlined in the accompanying HRA Report.

Any planning application will be supported by a Flood Risk Assessment. The flood risk work will assist in informing any mitigation strategy related to the site's location within the River Mease SSSI Impact Risk Zone, as described in the Ecology section of this EIA Screening report, which operates as a drainage catchment for the SSSI/SAC. See above under ecology.

Fluvial/Tidal

The EA Flood Map for Planning shows the Site to be within Flood Zone 1 (very low risk). This means that each year the site has a chance of flooding of less than 0.1% in relation to risk from rivers or the sea.

There are considered to be no significant effects that would arise from the operation stage as solar farms have no associated infrastructure that could:

- increase the demand on water supply;
- Impact on disposal of surface and foul water;
- increase diffuse pollution contained in urban runoff; or
- Lead to a significant increase in highways routine runoff and spillage risk.

Potential effects arise from the construction stage, which could include:

- Silt laden runoff
- Spillages, leakages and pollution
- Mud and debris blockages

Notwithstanding, these potential effects will be mitigated through a CEMP.

Surface Water

The EA Long Term Flood Risk Map (Surface Water), indicates that almost all the Site is at a Very Low risk from surface water flooding. This means that the majority of the Site has a chance of surface water flooding of less than 0.1%. There are localised topographic depressions associated with surface water ponding from direct rainfall where the risk of surface water varies between low, medium and high risk (the high risk areas being the ponds on site).

The Derbyshire County Council Strategic Flood Risk Assessment (SFRA 2012) includes a county overview of Areas susceptible to groundwater flooding. The SFRA does not highlight any historic surface water flood events or any issues in relation to surface water flooding, within the vicinity of the Site.

As surface water typically infiltrates into the ground or reaches a watercourse or drainage the same effects and opinions mentioned in the fluvial section apply to this flood risk source. However, in addition:

- The solar panels do not prevent direct infiltration into the ground.
- The solar panels are considered to allow direct infiltration into the ground. The site would remain landscaped with grassland and vegetation surrounding and beneath the arrays. The development proposals will result in the installation of a small substation and associated curtilage and inverters. These will be positioned on small areas of impermeable surfaces that would not have any measurable impact on surface water drainage running off-site. This is outlined in the accompanying HRA Report.

A Flood Risk Assessment and Drainage Strategy will be completed under NPPF and associated planning guidance to make sure flood risk is not exacerbated on-site, locally or downstream.

Groundwater

The Derbyshire County Council Strategic Flood Risk Assessment (SFRA 2012) includes a county overview of Areas susceptible to groundwater flooding. Drawing SFRA 5 categorises broad areas of the county into areas that are either <25%; 25%-50%| 50%-75%; or >75% susceptible to Groundwater Flooding.

The majority of the site appears to fall within an area categorised as having <25% susceptibility of groundwater flooding. The easternmost extent of the site appears to fall within an area categorised as having >75% susceptibility of groundwater flooding. No instances of groundwater flooding have been recorded across the site, according to the SFRA 2012 (Drawing number SFRA 03).

A Flood Risk Assessment will be carried out as part of any planning application, however the proposed works are unlikely to extend below groundwater level or impact upon the groundwater flood risk, therefore the risk of flooding from groundwater to the site is deemed Low.

Artificial Sources

The 2012 SFRA notes that the Council is unable to assess the risk of sewer flooding to properties at the time of writing the report. However, the report notes that *'This type of flooding tends to coincide with summer convectional storms e.g. thunderstorms and is generally localised and of a short duration and usually remain within highway boundaries. Areas at risk from this type of event are often at the base or lower parts of a hill where the gradient of the sewer eases. Properties that have a ground floor level lower than the level of the adjacent road may be at risk from this type of event (Section 4.4 SFRA 2012)'*. The topographical work undertaken to date indicates that there are no properties within the surrounding area of the site that would be particularly applicable to the described set of circumstances. This is supported by the absence of flood events recorded for the area on drawing SFRA 03, within the document.

Artificial Flooding can also originate from Canals, Ponds and Reservoirs. The SFRA indicates that any such artificial source which falls within 1km radius of a development site should be assessed from the perspective of residual risk of the water body over topping or the failure of a structure i.e. retaining wall. There are no potential sources of artificial flooding within 1km of the Site.

The EA Long-Term Flood Risk Map (Reservoirs) indicates that the Site is not within an area anticipated to be affected by any kind of reservoir breach.

Summary of Risk

The site is in Flood Zone 1 (very low risk of flooding).

Source of Flooding	Risk to Development	Mitigation Recommended	Risk from Development	Mitigation Recommended
Fluvial/Tidal	Low	No	Low	No
Surface Water	Low	No	Low	No
Groundwater	Low	No	Low	Yes
Artificial	Low	No	Low	No

The above information has considered all sources of flood risk and concluded the risk low from all sources of flooding in terms of risk to and from the development. There are considered to be no significant effects associated with the construction or operational stages of the proposed development.

The solar panels are considered to allow direct infiltration into the ground. The site would remain landscaped with grassland and vegetation surrounding and beneath the arrays. The development proposals will result in the installation of a small substation and associated curtilage and inverters. These will be positioned on small areas of impermeable surfaces that would not have any measurable impact on surface water drainage running off-site. This is outlined in the accompanying HRA Report. Flood risk is not anticipated to give rise to significant environmental effects.

Traffic

The best location for site access is being finalised. The access strategy will likely involve the creation of a new vehicular access from the road running along the eastern boundary of the site, which will form the principle construction site access. Construction traffic would be routed east to west through the site and cross over Lullington road via a new access (on the east side of Lullington Road), directly opposite an existing access to the west of Lullington Road (as shown on the plan at Appendix 3).

The main traffic generation would be during the construction period which would be relatively short and a construction management plan can be prepared to provide routing and details on this.

In advance of the construction phase, existing field accesses may need to be improved to provide adequate geometry and visibility facilitating safe two way access for the largest design vehicles. The largest construction vehicles will be 16.5m long articulated HGVs.

IEMA Guidelines include two criteria as a screening process to be considered in determining need for/extent of further assessment:

1. Highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%) and
2. Any specifically sensitive areas where total traffic flows have increased by 10% or more.

To minimise the potential construction impacts, the preparation of a Construction Environmental Management Plan (CEMP) is proposed prior to construction to ensure any potential impacts are minimised. The CEMP would outline the allocated responsibilities, procedures and requirements for site environmental management. It would include relevant site specific method statements, operating practices, and arrangements for monitoring and liaison with local authorities and stakeholders.

The Main Contractors undertaking the construction of the development would need to adopt and comply with the CEMP, allocate environmental management responsibilities to a site manager and ensure that all sub-contractors activities are effectively managed in accordance with the CEMP.

Once the solar farm is operational, traffic generated by it will be limited to that associated with occasional maintenance work. Movement within the site will be by way of quad bike or small, farm utility vehicle. The Electricity Board will visit the site from time to time to check the apparatus. No on-site staff will be required to operate the solar farm and no staff offices or maintenance buildings needed within or near to the site. Some permanent equipment for monitoring the site will be held in one of the transformer enclosures and/or grid connection cabinet. Whilst this would typically be accessed remotely, it would be available for occasional physical access during routine visits.

A decommissioning management plan would also be agreed with stakeholders prior to decommissioning works.

Due to the nature of the proposals there will be negligible operational traffic impact, as this will be restricted to maintenance vehicles only and have no significant effect on the highway network. The level of HGV traffic would vary throughout the construction phase depending upon the activities taking place at any one time but is considered unlikely to meet the IEMA thresholds (a peak of approximately 20 vehicles per day is estimated). A Construction Traffic Management Plan will be

produced that will control the routing of vehicles to site as well as the timing of construction vehicles so that they are spread across the day and avoid morning and evening peak periods, this is a normal requirement for a development of this type as part of the planning process.

Given the above it is considered unlikely that the thresholds within the IEMA guidelines will be met. The IEMA guidance, which forms the basis for the assessment of effects, also considers that the most discernible environmental impacts of road traffic are noise, air quality, severance and pedestrian delay/intimidation. The impacts of noise and air quality are dealt with elsewhere and therefore the following areas have been considered here:

- Driver Delay – this is identified in the IEMA Guidelines as an issue, which can occur at several points on the network, although the effects are only likely to be significant when the traffic on the highway network is predicted to be at or close to the capacity of the system.

It is not anticipated that any road closures will be necessary. The roads in and around the site have very low traffic volumes given the rural nature of the surrounding area. The roads running north/south through and around the site provide multiple route options between the villages of Lullington and Coton in the Elms, and beyond. In consideration of the above, it is considered that the risk to driver delay can be designed out of the proposals.

- Pedestrian Delay – this is defined in the IEMA Guidelines as an issue, which is affected by changes in the volume, composition and / or speed of traffic may affect the ability of people to crossroads. Typically, increases in traffic levels result in increased pedestrian delay, although increased pedestrian activity itself also contributes.

There is a public footpath that crosses the site running in a north/south direction (Lullington 1). This footpath will be maintained as part of the proposals. It is intended that the footpath will remain open during construction. Procedures for construction vehicles crossing the footpath will be considered within the Construction Traffic Management Plan

Within the wider area there are a few other footpaths, including 'Lullington 2' (just south of the site), Lullington footpath 7, south of Lullington Village, Coton in the Elms footpaths 7, which continues north of the site from Lullington footpath 1, and other Coton in the Elms footpaths (8, 9, 10, 12, 13) and Lullington Footpath 3. No closures to footpaths are proposed.

It is considered there is unlikely to be significant pedestrian delay associated with the proposals.

- Severance - the perceived division that can occur within a community, when it becomes separated by a major traffic artery and describes a series of factors that separate people from places and other people. Such division may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself.

Routing of construction vehicles can be designed to avoid settlements or pass around the edge of the settlements. Furthermore, no new roads are required as part of the proposals. The proposals will not result in severance within the community and as such would not give rise to likely significant effects.

- Accidents and Safety - these are not defined in the IEMA Guidelines, which suggests that professional judgement will be required to assess the implications of local circumstance, or factors which may increase or decrease the risk of accidents. This will be assessed as part of the planning application but given the nature of this topic, any impacts are likely to be localised and also controlled by other regulations outside of the planning and EIA process.

Overall, it is concluded that, based on the above, it is not considered likely that significant environmental effects would occur in relation to highways or transportation.

Cultural Heritage and Archaeology

The site does not accommodate any listed buildings or Scheduled Monuments (SAM). The nearest Scheduled Monument (SAM) is located to the north within Castle Greseley, known as the 'Castle Gresley Motte and Bailey Castle'. This is located at approximately 9km north of the site. The nearest Conservation Area is within the village of Lullington centre which is approximately 1 km south of the application site.

Only three statutory designated heritage assets and one unlisted building have been identified within 1km of the study site that may be effected by the proposals. These are: Lullington Village Conservation Area; The Church of All Saints, a Grade II* Listed Building; Lady Leys Farmhouse, a Grade II Listed Building, and Grafton House, an unlisted building. These are discussed in the accompanying Heritage Report.

A Heritage Statement will accompany any planning application.

Owing to the construction technique proposed and the limited excavations it is not expected that there will be any significant impacts upon any in-situ archaeology. Currently no archaeological investigation has taken place on the site but if considered appropriate then a geophysical survey and/or intrusive investigations will be undertaken. The applicant will consult with the County Archaeologist on this matter.

As such significant environmental effects will not arise in respect of archaeology and heritage.

Air Quality, Noise and Socio-Economic

No significant environmental effects are considered to have the potential to arise, under the above topics.

CONSIDERATION OF SCHEDULE 3 OF THE EIA REGS

Schedule 3 of the EIA Regs provides selection criteria which should be used when assessing Schedule 2 development, together with applicable thresholds to determine whether an EIA is required. The criteria are summarised as follows:

Characteristics of development

Size and design of development

The site area is 69.7 ha (see site location plan). The development will be formed by the following and the maximum heights will be:

- Ground mounted solar arrays. The maximum height of the panels will be 3metres.
- The inverters and transformers will have a maximum height of 3.5m.
- Security fences which will be wire and mesh and will have a maximum height of 2m and CCTV cameras on poles which have a maximum height of 3m.
- Direct connection into overhead power lines via a new substation on site.

The development does not meet the indicative threshold for EIA (installations which have a thermal output more than 50MW) as set out in the Planning Practice Guidance.

Cumulation with other development

There are no other developments in the immediate vicinity of the site which are existing and/or approved, which cumulatively will give rise to significant effects.

The use of natural resources

Whilst the site area is 69.7ha, the amount of below ground development will be very limited (typically in the region of 0.5-1% of the area). The development does not sterilise the land. Once decommissioned, the development can be removed, and the land can be returned to its previous arable use.

The production of waste

Any construction waste will be re-used and recycled wherever possible. Anything that can't be, will be disposed of in line with industry standards and best practice. There will be no waste produced by the operational development.

Pollution and nuisances

There are no pollutants produced by a solar farm. In relation to any nuisances, glint and glare will be considered and assessed in relation to impacts on the surrounding area.

Risk of accidents and or disasters

No substances are produced by the development that would pose a risk of accident. The site will be monitored remotely and via CCTV, therefore there is no risk of accidents.

Risk to human health

The site will be secured and will be monitored remotely and via CCTV, therefore there is no risk of accidents. As noted above, a solar farm does not produce any emissions or pollutants that would pose a risk to human health.

Location of development

Existing and approved land use

The site is within the countryside and is in arable use. The proposed use of the site is for a ground mounted solar farm which would be for a temporary time period (likely 40 years). Following decommissioning, the land can be returned to its former use. Therefore, the development will not give rise to the permanent loss of agricultural land.

Relative abundance, availability, quality and regenerative capacity of natural resources

The site has been assessed by an ecologist who has identified the habitats and species present or potentially present and evaluated their importance and has identified the site as having low ecological value. The proposals provide opportunities for biodiversity gains through planting, as described earlier in this request.

The absorption capacity of the natural environment

The structures associated with the development are all relatively low in height. The site is well contained and there are very limited views of the site from surrounding locations. This containment means that the sites impact will not spread into the wider landscape character area. The National environmental project, by providing woodland, will form part of the planting enhancement screening the panels from views outside the site.

Types and Characteristics of the potential impact

The spatial and geographical scale of the impact is very localised in nature. The site area is 69.7 hectares. The nature of the impact is likely to be limited to visual at a local scale. The nature of the impacts are not transboundary, and are of low intensity and complexity. They can also all be managed by best practice methods, which will be employed.

Due to the lack of any surrounding development, there are no expected cumulative impacts arising from this proposal.

CONCLUSION

It is considered that the proposal is unlikely to have significant effects on the environment and therefore an EIA is not required, as the development does not exceed indicative thresholds as set out in Planning Practice Guidance.

In summary the development:

- Has a thermal output of no more than 50MW;
- The site is not within a Sensitive Area as defined in Regulation 2(1);
- The proposal will incorporate a number of ecological enhancements and biodiversity gain;
- The proposal will not cause a permanent loss of agricultural land, once decommissioned the land can be fully restored to its existing arable use;
- The development has minimal disturbance to any below ground features; and
- The development, including proposed mitigatory planting, and is acceptable in terms of landscape and visual effects.

I trust that the information provided is sufficient to enable a prompt response to this screening opinion request within the statutory timeframe so that we may proceed with the submission of the full planning application as soon as possible.

Yours sincerely,



Sarah Clinch
Associate Planner



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Appendix 1: Site Location Plan prepared by Island Green Power



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Appendix 2: Agricultural Land Classification survey prepared by Land Research Associates

**AGRICULTURAL QUALITY
OF LAND NORTH OF LULLINGTON**

Report 1743/1

6th November 2020

**AGRICULTURAL QUALITY
OF LAND NORTH OF LULLINGTON**

M W Palmer PhD, CSci, MISoilSci

Report 1743/1
Land Research Associates Ltd
Lockington Hall,
Lockington,
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6th November, 2020

SUMMARY

An agricultural land quality survey has been undertaken of 69.7 ha of land north of Lullington, Derbyshire in October 2020.

The land in the western half of the sites is mainly limited by wetness to subgrade 3b. The eastern half of the land is mainly limited to grade 2 or subgrade 3a by droughtiness or wetness.

1.0 Introduction

- 1.1 This report provides information on the soils and agricultural quality of 69.7 ha of land north of Lullington, Derbyshire.

SITE ENVIRONMENT

- 1.2 The land surveyed comprises ten fields, bordered to the east and west by roads and to the north and south by adjoining agricultural land.
- 1.3 The site is level to gently sloping, at an average elevation of approximately 85 m AOD.
- 1.4 At the time of survey the land was under arable cropping.

PUBLISHED INFORMATION

- 1.5 1:50,000 scale BGS information records the geology of the land as Gunthorpe Member mudstone, overlain in the east by sand and gravel or by glacial till deposits.
- 1.6 The National Soil Map (published at 1:250,000 scale) records most of the land as Whimple 3 Association: reddish fine loamy or silty over clayey soils with slowly permeable subsoil. Hunstanton Association is recorded in the east: freely-draining loamy soils over glacial till or sand and gravel deposits¹.

¹Ragg, J.M., *et al.*, (1984). *Soils and their Use in Midland and Eastern England*, Soil Survey of England and Wales Bulletin No. 12, Harpenden.

2.0 Soils

2.1 A detailed soils and agricultural quality survey was carried out in October 2020 in strict accordance with MAFF (1988) guidelines². It was based on observations at intersects of a 100 m grid, giving a density of one observation per hectare. During the survey, soils were examined by a combination of pits and augerings to a maximum depth of 1.2 m. A log of the sampling points and a map (Maps 1) showing their location are in an appendix to this report.

2.2 The soils were found to vary principally in texture and drainage, as described below.

HEAVY SOILS WITH IMPERFECT TO POOR DRAINAGE

2.3 These soils are dominant in the west of the site. They typically comprise heavy clay loam topsoil over dense slowly permeable reddish clay, often with a moderately permeable fine loamy upper subsoil.

2.4 An example profile is described below from a pit at observation 59 (Map 1).

0-32 cm	Dark greyish brown (10YR 4/2) heavy clay loam; very slightly stony (small and medium hard quartz pebbles); weakly developed coarse sub-angular blocky structure; firm; smooth gradual boundary to:
32-55 cm	Reddish brown (2.5YR 5/4) clay with common faint medium reddish yellow (5YR 6/8) mottles, fine dark grey (5YR 4/1) ferri-manganiferous concentrations and pale red (2.5YR 6/2) ped faces; very slightly stony; moderately developed coarse prismatic structure; very firm; few fine fibrous roots; no macro-pores; smooth gradual boundary to:
55-110 cm+	Reddish brown (2.5YR 4/4) clay with common distinct coarse reddish grey (2.5YR 6/1) mottles; slightly stony; weakly developed very coarse prismatic structure to structureless (massive); very firm; no roots or macro-pores.

2.5 These soils are imperfectly to poorly-draining (Soil Wetness Class III to IV), meaning waterlogging will occur to shallow depth during the winter field capacity period.

LOAMY SOILS OVER CLAY WITH IMPERFECT TO FREE DRAINAGE

2.6 These soils occur mainly in the east, but also in patches in the west. They typically comprise sandy clay loam topsoil and upper subsoil, over dense slowly permeable reddish clay.

2.7 An example profile is described below from a pit at observation 52 (Map 1)

²MAFF, (1988). *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

0-30 cm	Dark greyish brown (10YR 4/2) sandy clay loam; slightly stony (small and medium hard quartz pebbles); moderately developed medium and coarse sub-angular blocky structure; friable; smooth clear boundary to:
30-55 cm	Pale grey (7.5YR 7/2) sandy clay loam with many distinct fine and medium yellowish red (5YR 6/8) mottles; slightly stony; moderately developed fine and medium sub-angular blocky structure; friable; frequent worm channels; smooth gradual boundary to:
55-100 cm+	Reddish brown (2.5YR 4/4) clay with common distinct medium grey (7.5YR 6/1) mottles and very dark grey (5YR 4/1) ferri-manganiferous concentrations; stoneless; weakly developed very coarse angular blocky structure; very firm; no macro-pores.

- 2.8 These soils are moderately-freely to imperfectly-draining (Soil Wetness Class II or III).

LOAMY AND SANDY SOILS WITH FREE DRAINAGE

- 2.9 These soils are found in the south-east of the site. They are variable, but are most typically coarse loamy over sandy and permeable to depth.

- 2.10 An example profile is described below from a pit at observation 55 (Map 1)

0-32 cm	Very dark greyish brown (10YR 3/2) medium sandy loam; slightly stony (small and medium hard quartz pebbles); moderately developed medium and coarse sub-angular blocky structure; friable; smooth clear boundary to:
32-44 cm	Greyish brown (10YR 5/2) medium sandy loam with common distinct coarse reddish yellow (7.5YR 6/8) mottles; slightly stony; moderately developed medium and coarse sub-angular blocky structure; friable smooth gradual boundary to:
44-72 cm	Light greyish brown (10YR 6/2) loamy medium sand with many distinct medium and coarse reddish yellow (7.5YR 6/8) mottles; stoneless; weakly developed fine sub-angular blocky structure; very friable; smooth diffuse boundary to:
72-90 cm	Reddish brown (2.5YR 5/4) medium sandy loam; stoneless; weakly developed medium sub-angular blocky structure; very friable; smooth diffuse boundary to:
90-120 cm	Reddish brown (5YR 5/4) sandy clay with common distinct fine reddish grey (5YR 5/2) mottles; slightly stony; structureless (massive); very firm.

- 2.11 These soils are freely-draining (Soil Wetness Class I or II).

3.0 Agricultural land quality

3.1 To assist in assessing land quality, the Ministry of Agriculture, Fisheries and Food (MAFF) developed a method for classifying agricultural land by grade according to the extent to which physical or chemical characteristics impose long-term limitations on agricultural use for food production. The MAFF ALC system classifies land into five grades numbered 1 to 5, with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced in the 1960s and revised in 1988.

3.2 The agricultural climate is an important factor in assessing the agricultural quality of land and has been calculated using the Climatological Data for Agricultural Land Classification³. The relevant site data for an average elevation of 85 m is given below.

- Average annual rainfall: 631 mm
- January-June accumulated temperature >0°C 1375 day°
- Field capacity period 133 days
(when the soils are fully replete with water) late Nov-early Apr
- Summer moisture deficits for: wheat: 103 mm
potatoes: 94 mm

3.3 The survey described in the previous section was used in conjunction with the agro-climatic data above to classify the site using the revised guidelines for ALC issued in 1988 by MAFF⁴. There are no climatic limitations at this locality.

SURVEY RESULTS

3.4 The agricultural quality of the land is primarily determined by soil wetness and droughtiness. Land of grades 2 and 3 has been identified.

Grade 2

3.5 This grade includes land with freely-draining loamy and sandy soils (see paragraphs 2.9 to 2.11). The main limitation is slight droughtiness caused by the combination of the relatively dry local climate and restricted moisture storage in deeper subsoil layers. As a result, yields are likely to be reduced by

³Meteorological Office, (1989). *Climatological Data for Agricultural Land Classification*.

⁴MAFF, (1988). *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

summer droughtiness in dry years, although high yields of a wide range of crops are possible.

3.6 Also included are areas with loamy soils (see paragraphs 2.6 to 2.8) with a greater depth to underlying clay (Soil Wetness Class II). The combination of moderately high topsoil clay content and occasional waterlogging sometimes limits machinery land access in winter, although there are few wetness limitations at other times.

3.7 Small areas have no significant agricultural limitations, but are judged to be limited to the average degree of limitation of this soil type.

Subgrade 3a

3.8 This land has loamy soils over clay (see paragraphs 2.6 to 2.8). The combination of moderately high topsoil clay content and imperfect drainage (Soil Wetness Class III) means this land has wetness limitations which restrict machinery access in winter and early spring.

Subgrade 3b

3.9 This land has soils with high topsoil clay content and significant drainage restrictions (Soil Wetness Class III or IV). This combination means spring machinery land access opportunities are rare and arable cropping is therefore mainly limited to autumn sowings.

Other land (non agricultural)

3.10 This land comprises blocks of woodland and water bodies.

Grade areas

3.11 The land grades are shown on Map 2 and the areas occupied shown below.

Table 1: Areas occupied by the different land grades

<i>Grade/subgrade</i>	<i>Area (ha)</i>	<i>% of the land</i>
Grade 2	10.5	15
Subgrade 3a	23.1	33
Subgrade 3b	34.2	49
Other land	1.9	3
Total	69.7	100

APPENDIX
DETAILS OF OBSERVATIONS
MAPS

Land north of Lullington: Soils and ALC survey – Details of observations at each sampling point

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
1	0-31	HCL/SCL	<5	31-46	HCL	xxx	46-90+	C(r)	xxx	1	III	3b/3a	W
2	0-31	HCL/SCL	<5	31-58	HCL/SCL	xxx	38-57 57-90+	HCL(r) C(r)	xxx xxx	1	III	3b/3a	W
3	0-30	HCL/SCL	<5	30-43	SCL	xxx	43-90+	C(r)	xxx	2	III	3b/3a	W
4	0-28	HCL	<5	28-58	C	xxx	58-90+	SCL(r)	xxx	1	III	3b	W
5	0-35	SCL	<5	35-49	SCL	xxx	49-90+	C(r)	xxx	2	III	3a	W
6	0-32	SCL	<5	32-48	MSL	xxx	48-74 74-100+	LMS SCL(r)	xxx xxx	2	II	2	W
7	0-32	HCL/SCL	<5	32-47	SCL(r)	xxx	47-90+	SCL(r)	xx	2	III	3b/3a	W
8	0-26	HCL	<5	26-48	HCL(r)	xxx	48-90+	C(r)	xx	1	III	3b	W
9	0-32	HCL	<5	32-49	HCL(r)	xxx	49-90+	C(r)	xxx	2	III	3b	W
10	0-24	HCL	<5	34-50	HCL/SCL	xxx	50-90+	C(r)	xxx	1	III	3b	W
11	0-29	HCL	<5	29-63	C(r)	xxx	63-90+	C(r)	xxx	2	IV/III	3b	W
12	0-28	HCL/C	<5	28-90+	C(r)	xxx				1	IV/III	3b	W
13	0-33	HCL	<5	33-48	HCL(r)	xxx	48-100+	HCL(r)	xxx	0	III	3b	W
14	0-32	HCL	<5	32-40	HCL	xxx	40-90+	C(r)	xxx	2	III	3b	W
15	0-25	HCL	<5	25-54	HCL	xxx	54-90+	SCL(r)	xxx	1	III/II	3b/3a	W
16	0-30	HCL	<5	30-42	HCL(r)	xxx	42-62 62-90+	C(r) MSL(r)	xxx xx	1	III	3b	W
17	0-32	HCL	<5	32-64	HCL/C(r)	xxx	64-90+	C(r)	xxx	0	III/IV	3b	W
18	0-29	MCL	<5	29-42	HCL(r)	xxx	42-90+	HCL(r)	xxx	1	III	3a	W
19	0-30	HCL	<5	30-43	HCL	xxx	43-55 55-75 75+	C SCL(r) Stopped on stones	xxx xxx	2	III	3b	W
20	0-32	HCL	<5	32-52	HCL	xxx	52-90+	C(r)	xxx	1	III	3b	W
21	0-24	HCL	<5	24-90+	C(r)	xxx				1	IV/III	3b	W
22	0-38	HCL	<5	38-52	SCL	xxx	52-67 67-90+	HCL/SCL(r) SCL(r)	xxx xx	1	III	3b	W
23	0-33	HCL	<5	33-40	HCL(r)	xxx	40-90+	C(r)	xxx	1	III	3b	W
24	0-33	SCL	<5	33-68	SCL	xxx	68-90+	HCL(r)	xxx	1	II	2	W
25	0-30	MCL/SCL	<5	30-50	SCL	xxx	50+	Stopped on stones		3	III/II	3a/2	W
26	0-31	HCL	<5	31-90+	C(r)	xxx				2	IV/III	3b	W
27	0-25	HCL	<5	25-60+	C(r)	xx				2	IV/III	3b	W
28	0-29	HCL	<5	29-80+	C(r)	xxx				1	IV/III	3b	W
29	0-35	MCL	<5	35-47	MCL(r)	xxx	47-90+	C(r)	xxx	1	III	3a	W
30	0-32	SCL	5-10	32-44	SCL(r)	xxx	44-90+	HCL(r)	xxx	1	III	3a	W
31	0-26	MCL	<5	26-50	C	xxx	50+	Waterlogged		1	IV/III	3a/3b	W
32	0-27	HCL/MCL	<5	27-39	HCL	xxx	39-80+	C(r)	xxx	0	III	3b/3a	W
33	0-25	SCL	<5	25-47	HCL	xxx	47-56 56-100+	HCL/SCL LMS	xxx xxx	1	IV/III	3a/3b	W
34	0-34	MSL	<5	34-75	LMS	xxx	75-100+	C(r)	xxx	2	II	2	D
35	0-28	HCL	<5	28-35	HCL	xxx	35-90+	C	xxx	0	III	3b	W
36	0-29	SCL	<5	29-57	SCL	xxx	57-80+	HCL/SCL	xxx	0	III	3a	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
37	0-32	MSL	5-10	32-75	MS	xxx	75+	Stopped on stones		2	I	3a/2	D
38	0-32	SCL	<5	32-38	SCL(r)	xxx	38 -90+	C(r)	xx	0	III	3a	W
39	0-23	HCL	<5	23 -80+	C(r)	xxx				1	III	3b	W
40	0-33	SCL	<5	33-52	SCL	xxx	52 -80+	HCL/ C(r)	xxx	1	III	3a	W
41	0-33	SCL	<5	33 -90+	C(r)	xxx				1	IV/III	3b/3a	W
42	0-27	HCL	<5	27 -80+	C(r)	xxx				1	IV/III	3b	W
43	0-29	SCL	<5	29-75	SCL	xxx	75 -100+	SC(r)	xx	0	II	2	W
44	0-34	SCL	<5	34-73	LCS/gravel	o	73+	Waterlogged		2	I/II?	3a	D
45	0-35	SCL	<5	35-72	SCL	xxx	72 -90+	HCL	xxx	0	II	2	W
46	0-31	SCL	5-10	31-63	LMS	xxx	63 -90+	LMS(r)	o	2	I	2	W/D
47	0-26	SCL	5-10	26-60	MSL(r)	xxx	60 -90+	C(r)	xxx	2	III	3a	W
48	0-32	SCL	<5	32-36	SCL(r)	xxx	36 -60 60 -90+	C(r) C(r)	xx xxx	0	III/IV	3a/3b	W
49	0-37	HCL	<5	37-49	HCL	xxx	49 -90+	C(r)	xxx	0	III	3b	W
50	0-33	HCL	<5	33-42	HCL	xxx	42 -90+	C(r)	xxx	1	III	3b	W
51	0-33	SCL	<5	33-52	SCL(r)	xxx	52 -90+	HCL/ C(r)	xxx	2	III	3a	W
52	0-30	SCL	<5	30-54	SCL(r)	xxx	54 -90+	HCL(r)	xxx	2	III	3a	W
53	0-28	SCL	<5	28-90+	SCL(r)	xxx				1	II	2	W
54	0-34	SCL	<5	34-70	SCL(r)	xxx	70-100+	MSL(r)	xx	1	II	2	W
55	0-31	MSL	<5	31-54	MSL	xxx	54-100+	LMS(r)	xxx	0	I	1	-
56	0-24	SCL	<5	24-30	HCL(r)	xxx	30 -90+	C(r)	xxx	1	IV/III	3b/3a	W
57	0-34	HCL	<5	34 -80+	C(r)	xxx				0	IV/III	3b	W
58	0-34	HCL	<5	34 -45	HCL	xxx	45 -90+	C(r)	xxx	1	III	3b	W
59	0-32	HCL	<5	32-42	HCL	xxx	42 -90+	C(r)	xxx	0	III	3b	W
60	0-30	HCL/SCL	<5	30-47	HCL	xxx	47 -90+	C(r)	xxx	1	III	3b/3a	W
61	0-26	SCL	<5	26 -49	HCL(r)	xxx	49 -70+	C(r)	xxx	1	III	3a	W
62	0-33	MSL	<5	33-71	MSL	xxx	71 -90+	HCL(r)	xxx	0	II	1	-
63	0-30	SCL	<5	30-50	SCL/gravel	xxx	50+	Stopped on stones		1	II	-	-
64	0-32	SCL	<5	32-72	SCL	xxx	72 -90+	C(r)	xxx	0	II	2	W
65	0-23	SCL/HCL	<5	23 -90+	C(r)	xxx				1	IV/III	3b/3a	W
66	0-38	HCL	<5	38-48	HCL(r)	xxx	48 -90+	C(r)	xxx	1	III	3b	W
67	0-33	SCL	<5	33-74	MSL	xx	74-100+	LMS	xx	0	I	1	-
68	0-33	SCL	<5	33-59	SCL	xxx	59 -90+	C(r)	xxx	1	III	3a	W

Key to table**Mottle intensity:**

- o unmottled
x few to common rusty root mottles (topsoils)
or a few ochreous mottles (subsoils)
xx common to many ochreous mottles and/or dull structure faces
xxx common to many greyish or pale mottles (gleyed horizon)
xxxx dominantly grey, often with some ochreous mottles (gleyed horizon)

a depth underlined (e.g. 50) indicates the top of a slowly permeable layer
(a wavy underline indicates the top of a layer borderline to slowly permeable)

Texture:

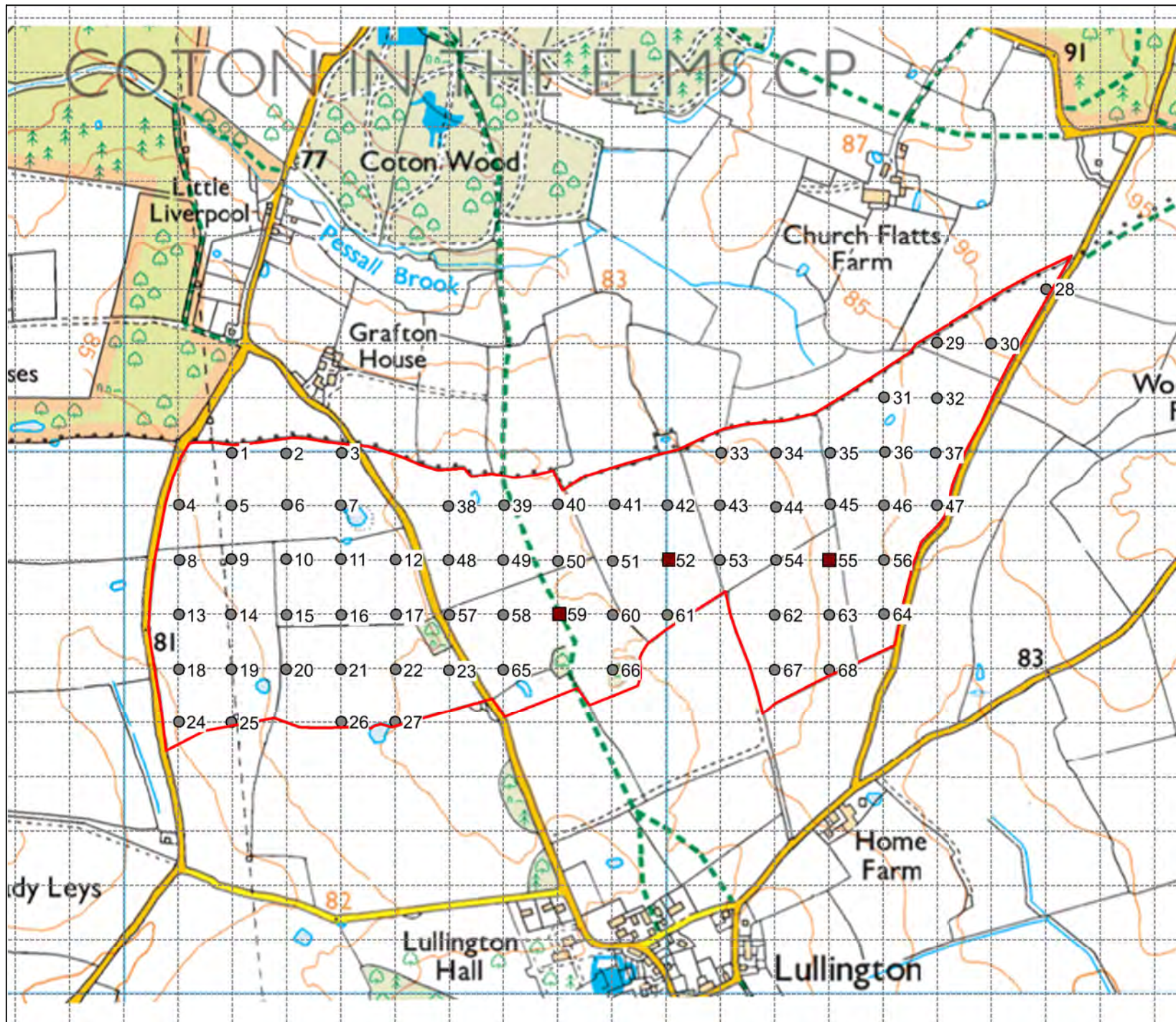
- C - clay
ZC - silty clay
SC - sandy clay
CL - clay loam (H-heavy, M-medium)
ZCL - silty clay loam (H-heavy, M-medium)
SCL - sandy clay loam
SZL - sandy silt loam (F-fine, M-medium, C-coarse)
SL - sandy loam (F-fine, M-medium, C-coarse)
LS - loamy sand (F-fine, M-medium, C-coarse)
S - sand (F-fine, M-medium, C-coarse)
P - peat (H-humified, SF-semi-fibrous, F-fibrous)
LP - loamy peat; PL - peaty loam
R – bedrock (CH – chalk, SST – sandstone)
LST – limestone, MST - Mudstone

Limitations:

- W - wetness/workability
D - droughtiness
De - depth
St – stoniness
Sl – slope
F - flooding
T – topography/microrelief

Texture suffixes & prefixes:

- ca – calcareous: x-extremely, v-very, sl-slightly
(ca) marginally calcareous
mn - ferrimanganiferous concentrations
gn – greenish, yb – yellowish brown, rb – reddish brown
r – reddish; (v)st – (very) stony
dist - disturbed soil layer; chky-chalky



KEY

- Auger observations
- Pits
- Site boundary

Client



Site:

Lullington

Map title:

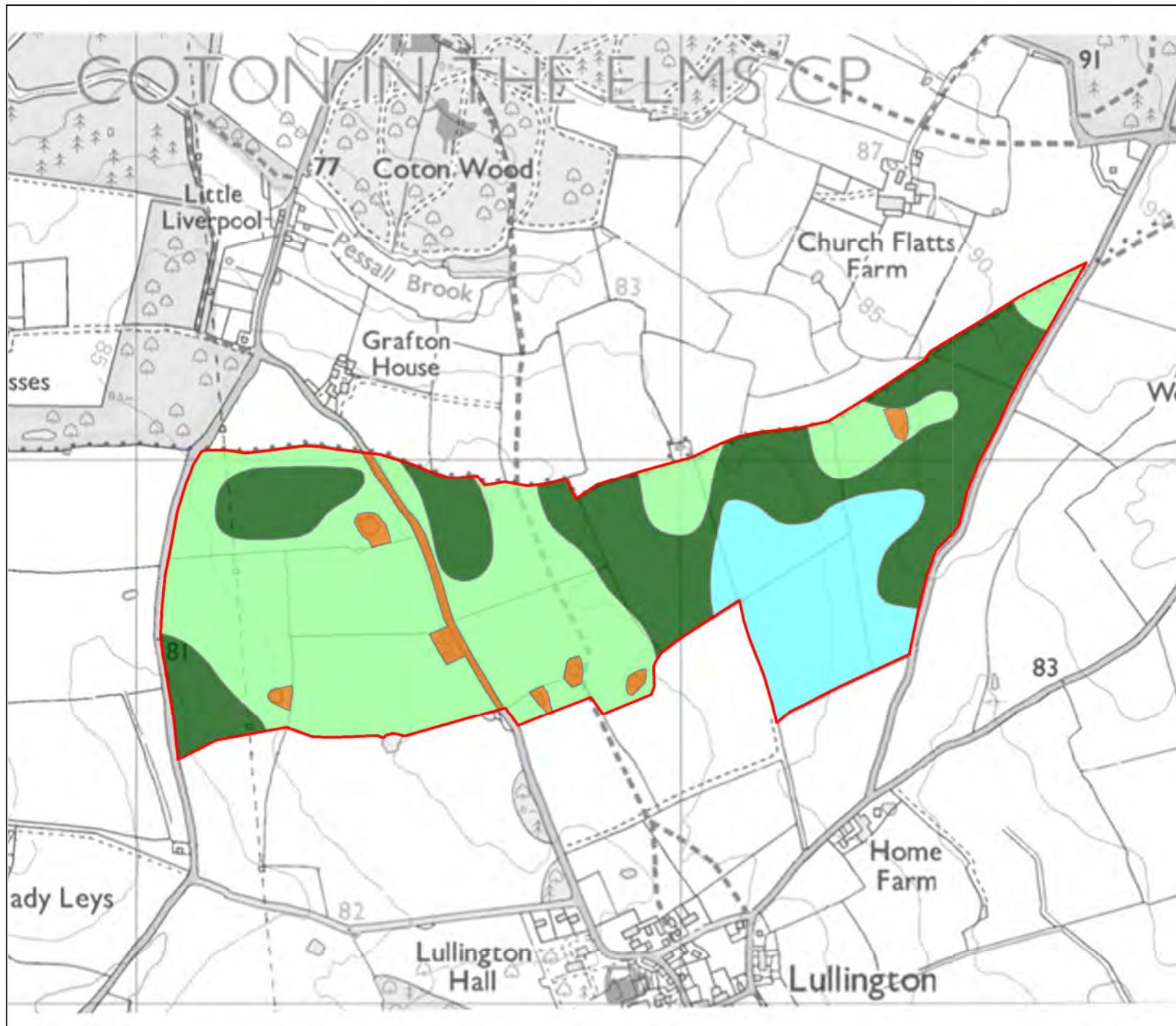
MAP 1
Observations

**Land
Research**
ASSOCIATES

Lockington
Derby
DE74 2RH
www.lra.co.uk

Date: 06/11/2020

Scale: 1:10,000



KEY

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Other land
- Site boundary

Client



Site:

Lullington

Map title:

MAP 2
Agricultural Land
Classification

Land
Research
ASSOCIATES

Lockington
Derby
DE74 2RH
www.lra.co.uk

Date: 06/11/2020

Scale: 1:10,000



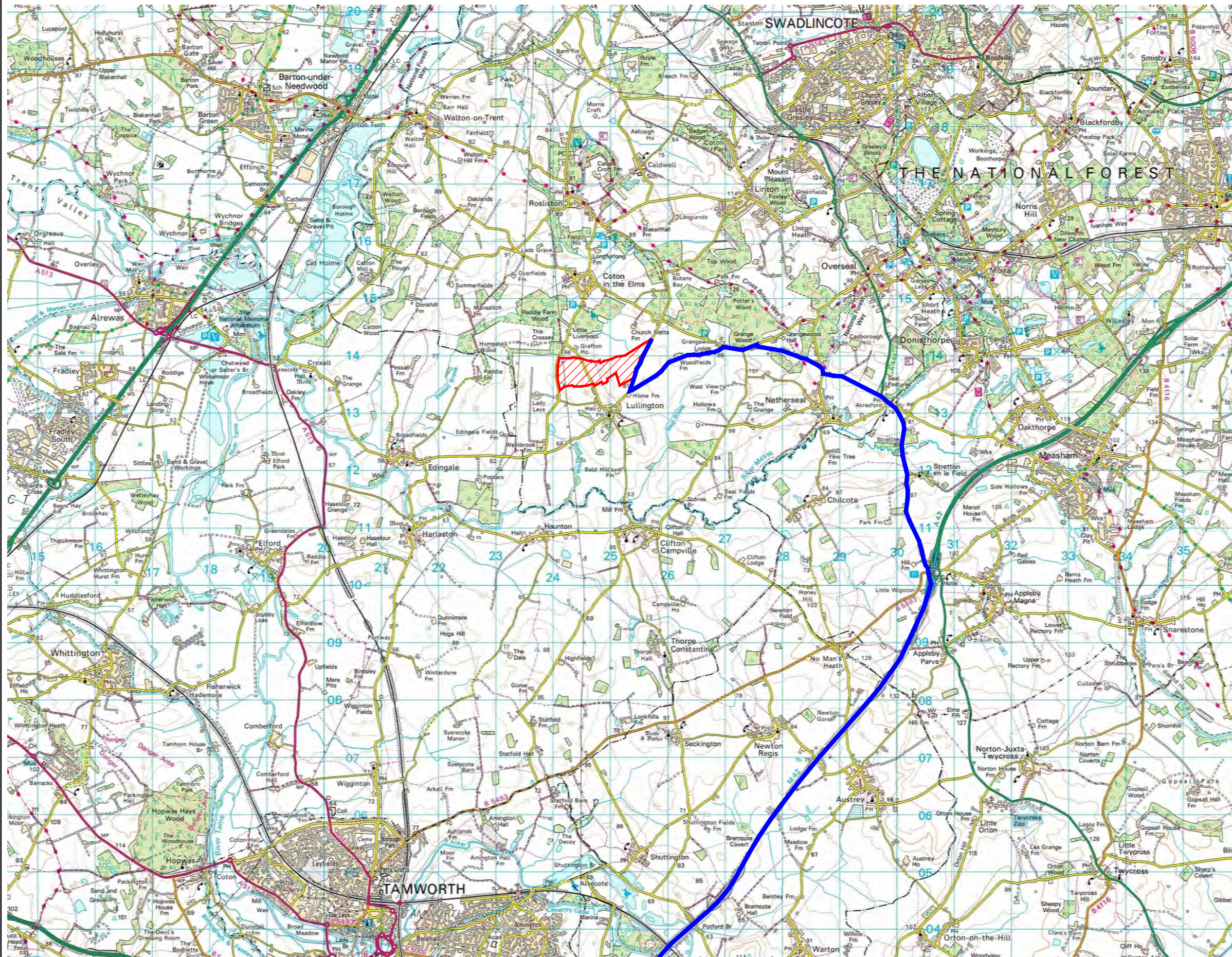
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Appendix 3: Draft Proposed Site Plan prepared by Island Green Power



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Appendix 4: Draft Construction Routing Plan



KEY



SITE LOCATION



CONSTRUCTION
TRAFFIC ROUTE

PRELIMINARY DRAWING:
THIS DRAWING IS FOR PRELIMINARY PURPOSES ONLY
AND MUST NOT BE READ AS A CONSTRUCTION ISSUE.
IT INDICATES DESIGN INTENT ONLY AND IS SUBJECT TO
AMENDMENT DURING FINAL DESIGN DEVELOPMENT.

P01	PRELIMINARY ISSUE.	08/04/21	OT	
REV	DESCRIPTION	DATE	BY	AUTH



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CLIENT

ISLAND GREEN POWER UK LTD

PROJECT

LULLINGTON SOLAR FARM Ltd

TITLE

SITE LOCATION AND TRAFFIC
ROUTING PLAN

DRAWN OT	AUTHORISED	DATE 07/04/21	SCALE AT A3 NOT TO SCALE
SUITABILITY PRELIMINARY			
PROJECT NO. 201053	DRAWING FIELDS.	DRAWING NO. SK-01	REV P1

Appendix 5: Initial Ecological Report prepared by WYG

An Ecological Appraisal (EA) was undertaken of an area including the site in August 2019. The EA comprised of a desk based data search and extended Phase 1 habitat survey. Since pre-application discussions the site area has been reduced from 90ha to 69.7ha. It is considered that this does not affect the opportunity to provide appropriate mitigation and enhancement as part of the proposals.

Lullington Solar Farm

Ecological Appraisal



For Island Green Power UK Limited

September 2019

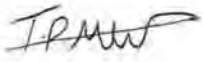
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Version 1	September 2019	Final
Prepared by:		Tom McClellan-West ACIEEM Consultant Ecologist
Checked By:		Jonathan Jackson CEnv MCIEEM Principal Ecologist
Verified By:		David West CEnv MCIEEM Associate Ecologist

Version:	Date:	Updated by:	Verified by:	Description of changes:

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Executive Summary

Contents	Summary
Site Location	The site is located on land north of Lullington, Derbyshire and is centred at Ordnance Survey National Grid Reference SK 24750 13763.
Proposals	The development proposal is for the installation of a ground mounted solar farm within the 90 ha of agricultural land north of the village of Lullington.
Existing Site Information	No existing site information was made available for this assessment.
Scope of this Survey(s)	The scope of this survey and associated report was to: • Determine what sites for nature conservation could be affected by the development proposals; • Record broad habitat types in accordance with the Handbook for Phase 1 habitat survey, a technique for environmental audit (JNCC, 2010); and • Determine and the potential for habitats to support notable and protected species. The information gathered during the survey was supported by information from the Local Environmental Records Centre (LERC) and MAGIC. The data collected will inform an assessment of the potential impact of developing the site, including any potential ecological constraints for which further survey may be required.
Results	• The site is within the Impact Risk Zone (IRZ) of the River Mease SSSI which is located 1.78 km to the south. The River Mease is also a Special Area of Conservation (SAC) and is the nearest European designated site to the development proposals. The development proposals meet the criteria for which Natural England should be consulted over the potential for adverse effects, as the development proposals comprise a wind and solar energy project. • There are 12 Local Wildlife Sites (LWS) / potential Local Wildlife Sites (pLWS) within 2 km of the site. • The site was comprised largely of arable / improved grassland fields and associated hedgerows. Other habitats included scattered trees, poor semi-improved grassland, scrub, tall ruderal herbs, semi-natural broad-leaved woodland and standing water. • Many of the hedgerows on site may qualify as 'important' under The Hedgerows Regulations 1997. • The site provided suitable habitat for the following species / species groups: - o Great crested newts; - o Reptiles; - o Roosting, foraging and commuting bats; - o Badgers; and - o Breeding birds (particularly farmland assemblages).

Recommendations	• Depending on final designs a Habitats Regulation Assessment (HRA) may be required to assess the potential for significant effects on the River Mease SAC. • Natural England would need to be consulted on the project as they are the statutory consultee and because the development proposals are within the River Mease SSSI IRZ. • Phase 2 surveys that are required are likely to include: - o Hedgerow Regulations assessment – for any hedgerows to be significantly affected by proposals. - o Great crested newt – presence / likely absence surveys, either through eDNA surveys or using traditional survey methods. - o Reptiles – presence / likely absence surveys. - o Roosting bats – ground level tree assessments, climbing surveys and if required emergence / re-entry surveys. - o Foraging and commuting bats – activity transect and static monitoring surveys. - o Badgers – sett classification and field-sign survey during optimal survey period. - o Breeding bird surveys.
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Glossary

ACIEEM	Associate member of the Chartered Institute of Ecology and Environmental Management
Badger Act	Protection of Badgers Act 1992
BCT	Bat Conservation Trust
BoCC	Bird(s) of Conservation Concern
BSI	British Standard Institute
BTO	British Trust for Ornithology
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
DEFRA	Department for the Environment, Food and Rural Affairs
DWT	Derbyshire Wildlife Trust
EcIA	Ecological Impact Assessment
EPS	European Protected Species
EPSL	European Protected Species Licence
GCN	Great Crested Newt
Habitat Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HAP	Habitat Action Plan
Hedgerow Regulations	Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
HRA	Habitats Regulations Assessment
JNCC	Join Nature Conservation Committee
LERC	Local Ecological Record Centre
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
LPA	Local Planning Authority
LWS	Local Wildlife Site
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NERC Act	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SER	Staffordshire Ecological Record
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site(s) of Special Scientific Interest
W&CA	Wildlife & Countryside Act 1981 (as amended)

1.0 Introduction

1.1 Background

WYG was commissioned by Island Green Power UK Limited on 1st August 2019 to undertake an Ecological Appraisal of the land for the proposed Lullington Solar Farm, Lullington, Derbyshire.

This report has been prepared by WYG Consultant Ecologist Tom McClellan-West BSc (Hons) MSc ACIEEM and the conditions pertinent to it are provided in Appendix A.

1.2 Site Location

The site is located on land north of Lullington, Derbyshire and is centred at Ordnance Survey National Grid Reference SK 24750 13763 – see Figure 1. The site is approximately 90 ha and comprises predominantly of arable fields with some improved grassland fields, associated ponds, hedgerows and field boundaries. A small block of woodland is also present within the site boundary.

The site is bordered partially by Garland Woods to the north and west and further arable and improved grassland fields to the north, south and east. The wider area consists largely of agricultural land, small settlements and several woodlands including Coton Wood 0.4 km to the north, the village of Lullington 0.5 km to the south, agricultural land to the east and Homestall Wood Local Wildlife Site (LWS) 0.4 km to the west.

1.3 Development Proposals

The development proposal is for the installation of a ground mounted solar farm within the 90 ha of agricultural land north of the village of Lullington.

1.4 Purpose of the Report

The purpose of this report is to complete:

- A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest (Figure 2) and relevant records of protected / notable species within the site and its zone of influence (Figure 3 and 4);
- An extended Phase 1 Habitat Survey, involving a walkover of the site to record habitat types and dominant vegetation, including any invasive species, and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species (Figure 5 and 6); and
- An assessment of the potential ecological receptors present on site, identify any constraints they pose to future development and (if possible) any recommendations for any further surveys, avoidance, mitigation or enhancement measures that are needed (as appropriate).

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

A summary of the key legislation is also provided in Appendix B.

2.0 Methodology

2.1 Desk Study

2.1.1 Previous Reports

No previous ecological reports were made available for the site.

2.1.2 Local Ecological Records Centre

The site and 2 km search radius falls into two LERCs boundaries. Information was requested from both the Derbyshire Wildlife Trust (DWT) and Staffordshire Ecological Record (SER) for information on any nature conservation designations and protected or notable species records within 2 km of the site.

The data search covered:

- Statutory designated sites for nature conservation, namely SACs, SPAs, Ramsar sites, SSSIs, NNRs and LNRs;
- Non-statutory designated sites for nature conservation, namely LWS;
- Legally protected species, such as great crested newts *Triturus cristatus* (GCN), badger *Meles meles* and bats;
- Notable habitats and species, such as those listed as Habitats or Species of Principal Importance (HPIs or SPIs); and,
- Priority habitats or species within the Lowland Derbyshire BAP (Derbyshire County Council, 2011).

The data search did not cover:

- Tree Preservation Orders (TPOs); or
- Conservation Areas designated for their special architectural and historic interest.

Note that relevant extracts from the desk study are provided in Appendix C, as appropriate.

2.1.3 Online Resources

A search for relevant information was also made using MAGIC. This is DEFRA's interactive, web-based database for statutory designations and information on any EPSL applications that have been granted in the local area since 2015.

2.2 Field Surveys

The following methodologies have been used to identify the ecological receptors present on or near the site, which are relevant to the development proposals.

2.2.1 Habitats

An extended Phase 1 habitat survey was undertaken on the site on 19th August 2019 by WYG Consultant Ecologist Tom McClellan-West BSc (Hons) MSc ACIEEM. The weather conditions were variable throughout the day, and ranged from warm, clear and sunny to overcast with heavy rain. Bad weather did not persist long enough to prevent the survey from being undertaken.

The vegetation and broad habitat types within the site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2019). The site was also appraised for its suitability to support notable flora, with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017).

2.2.2 Protected & Notable Species

The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRoW Act, those given extra protection under the NERC Act, and species included in the Lowland Derbyshire BAP.

Great Crested Newt

The site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Becket and Foster, 2001). Where found, ponds were assessed for their suitability to support GCN using the Habitat Suitability Index (HSI) method (Oldham *et al.*, 2000).

Bats

Roosting Bats – Buildings / Structures / Trees

Any suitable buildings, structures or trees on site were assessed from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the Bat Conservation Trust *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) – hereafter referred to as the 'BCT Guidelines'. The classifications shown in Table 1 from the BCT Guidelines were therefore used to categorise the bat roost suitability of any features found.

Table 1 Categories of Bat Roost Suitability (BCT Guidelines)

Suitability	Typical Roosting Features
Negligible	Negligible habitat feature on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer

Suitability	Typical Roosting Features
	periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Foraging / commuting Bats

The BCT Guidelines use the criteria in Table 2 to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site.

Table 2 Categories of Habitat Suitability (BCT Guidelines)

Suitability	Typical Foraging & Commuting Features
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003).

Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell and Jefferies, 1989).

Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, birds and invertebrates with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and *BS42020:2013 Biodiversity – Code of Practice for Planning and Development* (BSI, 2013). Evidence of any current or historical presence of such species was recorded.

2.2.3 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed *Reynoutria japonica* (formerly *Fallopia japonica*), Indian (Himalayan) balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhododendron ponticum* × *Rhododendron maximum*. A full list of all invasive plant species is provided in Appendix B.

2.3 Limitations

Anecdotal evidence provided by the landowner suggested there was a pond within F7 at TN60. This was within a small block of semi-natural woodland, with a scrubby field layer. A check for the existence of the pond was not possible during lone working as due to the ground conditions, it could not be safely accessed. A return visit to establish the presence of this pond would therefore be required as part of the future surveys for GCN.

Surveys in summer for badgers (June – August inclusive) are sub-optimal as dense vegetation can obscure evidence of setts. The results from the survey are therefore not exhaustive and there is the potential for the site to support a higher number of badger setts that was found. Additional survey effort in late autumn or early spring to establish the number and types of sett present on site would therefore be recommended.

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be recommended.

The details of this report will remain valid for a period of **18 months** from the date of the survey, after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

3.0 Baseline Conditions

3.1 Designated Sites

The designated sites for nature conservation in Table 3 were identified within 2 km of the site. These are shown in Figure 2.

Table 3 Designated Sites Within 2 km

Site Name	Distance & Direction	Summary of features
Statutory Designated Sites		
River Mease SAC	1.78 km South	Designated primarily due to the presence of spined loach <i>Cobitis taenia</i> and bullhead <i>Cottus gobio</i> . The river offers a reasonable degree of channel diversity, with extensive beds of submerged plants which offer good habitat for both species. Other qualifying species include white-clawed crayfish <i>Austropotamobius pallipes</i> and otter <i>Lutra lutra</i> . There is also qualifying habitat 'Water courses of plain to montain levels with Ranunculion fluitantis and Callitricho-Batrachion vegetation' present.
River Mease SSSI	1.78 km South	The SSSI comprises of the River Mease, which flows 25 km westwards across largely rural and agriculture to its confluence with the River Trent and Croxall. It is a relatively un-modified lowland river which contains diverse range of in-channel features including riffles, pools, slacks, vegetated channel margins and bankside tree cover providing good conditions to sustain populations of spined loach and bullhead.
Non-statutory Designated Sites		
Hill Close Wood Pond LWS	0.81 km North-West	Standing open water.
Grangewood Farm Ponds LWS	0.93km East	Standing open water.
The Ashes LWS	0.98 km North-East	Ancient semi-natural oak woodland.
Homestall Wood LWS	0.99 km West	Secondary broad-leaved woodland.
Church Street Grassland LWS	1.15 km North	Unimproved neutral grassland.
Church Farm Pond LWS	1.32 km, North	Derbyshire Red Data Book species.
Grange Wood & Potters Wood LWS	1.32 km East	Ancient semi-natural oak woodland.
Raddle Lane (Hedge 2) LWS	1.82 km South-West	A hedge valued, in particular for its large number of species (14) in the hedge canopy and its good structure. The hedge has 10

Site Name	Distance & Direction	Summary of features
		standard trees along its length, a small bank and grass verge of over 2 m on one side.
Hill Close Wood Pond 2 pLWS	0.95 km North-West	Standing open water.
Botany Bay Hedgerow pLWS	1.26 km North-East	Species-rich hedgerow.
King's Covert pLWS	1.30 km North-West	Secondary woodland.
Longfurlong Farm Meadow pLWS	1.49 km North	Wet grassland.

3.2 Habitats

The following habitats have been identified through our assessment (see Figure 5 and 6), with detailed Target Notes (TN#) included in Appendix D. Within the habitat descriptions and figures, fields are numbered as 'F#' and field boundaries are numbered 'FB#'.

3.2.1 Arable Fields

The site was largely comprised of arable fields growing either wheat *Triticum sp.* (F1, F2, F5, F6, F11, F12) or maize *Zea mays* crop (F4). In a number of the wheat fields, the crop had already been cut and tracking furrows were present from this process (F2, F6, F11, F12). The majority of field margins were very narrow and typically ranged between 0.5 m to 2 m wide. The herbaceous species within these margins often showed no differentiation from those associated with boundary hedgerows. Often these consisted of tall grasses and ruderal herbs, which are described in Section 3.2.4 and 3.2.5 relating to hedgerows.

3.2.2 Improved Grassland

The site also supported numerous improved grassland fields (F3, F7, F8, F9, F10). These were dominated by perennial rye-grass *Lolium perenne* and cock's-foot *Dactylis glomerata*, with occasional Yorkshire fog *Holcus lanatus*. Herbaceous species included broad-leaved dock *Rumex obtusifolius*, broad-leaved plantain *Plantago major*, meadow buttercup *Ranunculus acris* and white clover *Trifolium repens*. F7 also had a significant stand of horse tail *Equisetum arvense* towards its margins. F3 was notable from being largely devoid of herbaceous vegetation, except for that associated with field boundaries.

Improved grassland was also found as a thin strip between two hedgerows in F1, and as part of FB13 (TN10 and TN47). In F11 improved grassland was present as a 4 m wide boundary and comprised of perennial-rye grass, cock's-foot and false oat-grass *Arrhenatherum elatius* and had similar herbaceous species as those listed above (TN81). The north-eastern corner of F12 also has an area of improved grassland, with similar grasses as TN81. However, the herbaceous sward included species such as

cat's ear *Hypochaeris radicata*, dandelion *Taraxacum officianales* agg. and nipplewort *Lapsana communis* (TN88).

3.2.3 Poor Semi-improved Grassland

The grass verges on site consisted of poor-semi improved grassland, which appeared relatively unmanaged (TN92). Grass species included cock's-foot, false oat grass, perennial rye grass and Yorkshire fog. Herbaceous species included those in hedgerow understories (see Section 3.2.4) as well as bird's foot trefoil *Lotus corniculatus*, common daisy *Bellis perennis*, dandelion, white clover and red clover *Trifolium pratense*.

3.2.4 Species-rich Hedgerows - Intact

Hedgerows were predominantly species-rich and contained between four and nine species, as described in Table 4.

Table 4 Species-rich hedgerows and number of woody species recorded

No. species	Hedgerows
4	FB3a, FB8, FB14, FB17, FB26, FB28, FB31, TN62
5	FB4, FB5, FB6, FB7, FB18, FB19, FB20, FB23, FB24, FB25, FB30
6	FB1, FB3b, FB9, FB15, FB22, FB27,
7	FB2, FB16,
8	FB12, FB21
9	FB29

The hedgerows generally ranged between 1.5-2.5 m in height and 1-2 m wide and appeared relatively well managed, with shape and form indicative of a yearly cutting regime. Only one hedge appeared to have been intensively flailed (FB3b; TN11). The hedgerows were largely dominated by hawthorn *Crataegus monogyna*, with abundant blackthorn *Prunus spinosa* and frequent ash *Fraxinus excelsior*, elder *Sambucus nigra*, field maple *Acer campestre* and hazel *Corylus avellana*. Less frequently found were species such as dog rose *Rosa canina*, holly *Ilex aquifolium*, oak *Quercus robur* and sycamore *Acer pseudoplatanus*. The hedgerows were often encroached by non-qualifying species, usually bramble *Rubus fruticosus* agg. Other species such as cleavers *Galium aparine*, common nettle *Urtica dioica*, hedge bindweed *Calystegia sepium*, ivy *Hedera helix* and to a lesser extent bitter nightshade *Solanum dulcamara* were also found.

The hedgerow understory (or ground layer) consisted predominantly of grasses and / or ruderal herbs, with varying ratios. Grass species included cock's-foot, false oat grass, perennial-rye grass and Yorkshire fog. Herbaceous species included cleavers, common nettle, ferns *Dryopteris* spp., hogweed *Heracleum sphondylium*, red campion *Silene dioica*, spear thistle *Cirsium vulgare*, sow thistle *Sonchus sp.* rosebay willowherb *Chamaenerion angustifolium* and wild carrot *Daucus carota*.

3.2.5 Species-rich Hedgerows – Defunct

FB13 was a 1.5-2 m tall defunct species-rich hedgerow containing blackthorn, elder, hawthorn and oak and was also encroached by bramble. The understory contained tall grass species and some ruderal species mentioned above. The gap in this hedgerow was occupied by some improved

grassland (FB13; TN47) and tall ruderal herbs (F13; TN48). The 3 m wide gap appeared to originally have provided access between fields, which appears to no longer be used.

3.2.6 Species-poor Hedgerows

There were two species poor hedgerows on site. FB10 was 2.25 m tall, with small gaps and consisted primarily of blackthorn and hawthorn, with bramble. The understory of FB10 was similar to that found in species rich hedgerows. FB11 was 2 m tall consisting of blackthorn, elder and hawthorn, also with interspersed bramble and a similar grass and ruderal herb understory to other hedgerows on site including those listed in Section 3.2.4.

3.2.7 Tall Ruderal

Tall ruderal herbs comprised the majority of hedge understories, see Section 3.2.4, 3.2.5 and 3.2.6. However, there was a relatively large and distinct patch situated within a defunct hedgerow gap (FB13; TN48). This was dominated by common nettle with frequent broad-leaved dock and rosebay willowherb and with some sow thistle and spear thistle. Another patch was present in close proximity to a small block of broad-leaved woodland (F7; TN61). Species included broad-leaved dock, common knotgrass *Polygonum aviculare*, common nettle, nipplewort and sow thistle.

3.2.8 Scrub

Scrub on site was largely associated with habitats surrounding ponds (e.g. F11; TN83). However, at FB7; TN26 there was an area of dense bramble scrub that stands at a height of 1.5-2 m, which links with a tree line at FB7; TN27. The other stand-alone scrub area was at F7; TN63 and consisted primarily of grey willow *Salix cinerea*, with interspersed bramble. Small passerine birds were observed using this habitat.

3.2.9 Broad-leaved Semi-natural Woodland

Broadleaved woodland formed part of the southern border of F4 and a section of F5 (F4/5; TN41). Tree species included ash, oak and sycamore of varying ages, up to a height of 15 m, with 80% canopy cover. The shrub and ground layer were largely indistinguishable due to shared species such as bramble, holly and ivy. Some ruderal herbs were present at a ground layer including broad-leaved dock, common nettle and spear thistle. There were some noticeably wetter areas within the woodland with small stands of sedges *Carex* spp. and soft rush *Juncus effusus*.

3.2.10 Standing Water

Aerial mapping identified seven potential ponds within the site. On FB2, TN5 was a small pond surrounded by hedgerow species and bramble, and was completely shaded. In F1, TN14 was surrounded by bramble scrub and semi-mature trees, and appeared seasonally dry with only a few shallow pools of water present. In F2, TN18 was a large pond with fishing platforms, with a mixture of trees and scrub surrounding it. In F3, TN36 was a large pond choked by duckweed *Lemna* sp. with similar surrounding vegetation. In F5, TN49 was a large pond, in which the water appeared stagnant and was surrounded by ruderal herbs and willow scrub. In F7, TN59 was surrounded by dense willow scrub and mature ash and oak trees and could not be fully viewed. In F11, TN84 was a small pond that has become choked by tall ruderal herbs with one reasonable sized pool of water remaining.

Another pond was in F4/5 at TN43, it was a small woodland pond, with a small pool of water present. The topography indicated that the pond is likely larger at other times of year and seasonally dries out. Anecdotal evidence provided by the landowner suggested another pond is located within F7 at TN60.

This was within a small block of semi-natural woodland, with a scrubby field layer. A check for the existence of the pond was not possible as due to the ground conditions, it could not be safely accessed (see Limitations).

3.3 Protected & Notable Species

The following sections present the results from the desk study and surveys relating to protected and notable species. All desk study information is provided in Figure 3 and 4, with the locations of Target Notes shown in Figure 5 and 6.

3.3.1 Great Crested Newts

The desk study returned three records of GCN within 2 km of the site, the closest was located 0.75 km north-west of site within 'Hill Close Wood Pond 1', recorded 24/08/2012. A search using MAGIC found that there have been no EPSL applications relating to GCN within 2 km of the site. The data search also found that there appears to be at least 17 waterbodies within 500 m of the boundary of the site.

There are at least eight ponds present and another is possible (anecdotally). Each pond was subject to a HSI assessment where possible (Table 5). Ponds within 500 m, outside of the site boundary were not accessed.

Table 5 HSI scores of ponds found on site

Pond Reference	HSI Score	HSI Rating
FB2; TN5	0.53	Below Average
F1; TN14	0.58	Below Average
F2; TN18	0.4	Poor
F3; TN36	0.71	Good
F4/5; TN43	0.4	Poor
FB13; TN49	0.51	Below Average
F7; TN59	0.71	Good*
F11; TN84	0.58	Below Average

**Denotes where assumptions have been made using aerial imagery.*

The terrestrial habitats on site mainly comprised agricultural fields and improved grassland, which is sub-optimal habitat for GCN. However, the hedgerows, woodland and scrub on site provides suitable habitat for foraging, resting and hibernating GCN. The hedges provide connectivity with the wider landscape and at least another 17 ponds within 500 m of the site.

3.3.2 Reptiles

The desk study returned five records of grass snake *Natrix helvetica* within 2 km of the site. The closest recent record is 0.9 km to the east of site within a national forest plantation recorded 03/06/2010.

The large connected network of hedgerows, areas of tall ruderal herbs and scrub and woodland edges provide suitable habitat for foraging, basking and hibernating reptile species.

3.3.3 Bats

The desk study returned 13 records of bat species within 2 km of the site. These comprised of nine records of roosts and four sightings, as detailed in Table 6. A search using MAGIC found that there have been no EPSL applications relating to bats within 2 km of the site.

Table 6 Details of records of bats and bat roosts within 2 km of the site.

Location	Species	Record Type	Date
0.24 km South	Brown long-eared bat <i>Plecotus auritus</i>	Roost	26/07/1988
1.15 km North	Common pipistrelle <i>Pipistrellus pipistrellus</i>	Sighting	06/06/2017
1.15 km North	Common pipistrelle	Sighting	27/06/2017
1.22 km North	Pipistrelle bat <i>Pipistrellus</i> sp.	Roost	22/06/2006
1.25 km North-East	Common pipistrelle	Sighting	25/09/2012
1.29 km North-East	Noctule bat <i>Nyctalus noctula</i>	Sighting	25/09/2012
1.32 km North	Pipistrelle bat	Roost	08/08/1996
1.43 km North-East	Brown long-eared bat and common pipistrelle	Roost	12/07/2017
1.43 km North-East	Brown long-eared bat and common pipistrelle	Roost	30/07/2017
1.44 km North	Common pipistrelle	Roost	06/08/2002
1.76 km North-East	Unidentified bat species	Roost	07/08/2013
1.78 km North-East	Unidentified bat species	Roost	07/08/2013
1.99 km North	Brown long-eared bat	Roost	11/05/2016

There were several trees on site with features that had the potential to support roost bats, a non-exhaustive list of which is provided in Table 7. These were not assessed individually at this stage. It is also likely that there are numerous additional trees with potential, particularly within the broad-leaved woodland at F4/5; TN41.

Table 7 Trees with bat roost potential

Target Number; Bat Roost Potential Trees			
FB4; TN13	F1; TN15	FB1; TN16	FB5; TN20
FB6; TN23	FB6; TN24	FB6; TN25	FB9; TN33

F3; TN38	FB26; TN76	FB23; TN82	-
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The large connected network of hedgerows, with areas of woodland, tall ruderal vegetation, scrub and lines of trees provide habitats that could support commuting and foraging bats. FB2 is likely to have particularly high suitability due to it running adjacent to a woodland north of the site.

The site is well connected to the wider landscape via boundary features, meaning that the further woodland blocks and buildings would likely be accessible to bats. The agricultural fields and improved grasslands are thought to offer low suitability for foraging bats. This was due to the monoculture of crops and associated pesticide use being considered likely to limit both invertebrate prey diversity and density for bats.

3.3.4 Badger

The desk study returned 10 records of badgers within 2 km of the site. The closest recent record is 0.33 km north of site, recorded on 13/05/2009.

The hedgerows, woodland, scrub, tall ruderal habitats are considered suitable for sett creation. The arable fields are considered suitable to provide a good foraging resource for badgers.

During the survey, five badger setts were identified. An active subsidiary sett was located at F11; TN85. There were three holes visible, and a fresh spoil heap adjacent to FB28 indicating at least one additional hole. A five-hole currently unused subsidiary sett was found adjacent to a pond at F3; TN37. Three outlier setts (each comprising a single hole) were also found, one under a dead tree (FB6; TN24), one in close proximity to FB17 with fresh latrines and bedding present (F6; TN56) and one adjacent to FB21 (FB21; TN68).

In addition to the setts, badger field signs were recorded across much of the site. This includes paths several paths, dung pits, snuffle holes and large latrines, as shown in Table 8.

Table 8 Other badger field signs and their locations.

Badger Field Sign	Target Note
Mammal Paths	FB1; TN2, FB2; TN6, FB3a; TN8, FB5; TN21, FB8; TN31, FB30; TN91.
Latrines	F1; TN7, FB30; TN90
Snuffle Holes	FB17; TN55

3.3.5 Otter & Water Vole

The desk study did not return any records of otter within 2 km of the site. However, it returned three records of water vole within 2 km of the site. The closest and most recent record is 0.5 km north-west of site, recorded in 2001. The remaining records were collected in 1970 and are 1.32 km and 1.51 km from site.

The habitats on site are largely unsuitable for otter and water vole. The only waterbodies on site are sub-optimal ponds, which are isolated from other suitable waterbodies by large agricultural fields.

Furthermore there are several barriers to dispersal such as roads between these ponds and areas where otter or water vole have been recorded. It is therefore highly unlikely that these species are present on site.

3.3.6 Birds

The desk study returned 30 species of birds, these are summarised in Appendix C. These comprised:

- Six species that are either listed on Annex 1 of the Habitats Regulations 2017 or are given extra protection via Schedule 1 of the W&CA;
- 11 of the species are listed in accordance with the requirements of Section 41 of the NERC Act; and
- Within the 30 species, 11 are BOCC Red Listed.

The arable fields within the site and associated hedge boundaries and adjacent woodland were considered to have the potential to support several of the protected and notable species returned by the desk study. These included brambling *Fringilla montifringilla*, lapwing *Vanellus vanellus* and red kite *Milvus milvus*.

Habitats on site were predominantly agricultural field and hedgerows, which may support farmland bird assemblages of significance.

3.3.7 Invertebrates

The desk study returned no records of protected or notable invertebrates (including white-clawed crayfish) within 2 km of the site.

Due to the lack of variety of habitats and the likely application of pesticides on arable land, it is considered that the site supports only a limited assemblage of common and widespread invertebrate species.

3.3.8 Other Notable Species

The desk study returned seven records of brown hare *Lepus europaeus* within 2 km of the site, two of which were within the site boundary itself. Also returned were three records of harvest mouse *Micromys minutus* and two records of hedgehog *Erinaceus europaeus*. These species are of elevated conservation status as they listed in accordance with the requirements of Section 41 of the NERC Act (2006).

The fields and field boundaries were considered to have the potential to support all three species listed above, although no evidence of them was recorded during the survey.

3.3.9 Invasive Species

The desk study returned 37 records of invasive species within 2 km of the site. Species included Himalayan balsam, New Zealand pygmyweed *Crassula helmsii*, parrot's Feather *Myriophyllum aquaticum* and Rhododendron *Rhododendron ponticum*. The nearest record was of Rhododendron located 27.5 m south of site, recorded in 1997.

No invasive species were recorded during the survey. Therefore invasive species are not considered to be a constraint to works and are not discussed further in this report.

3.4 Importance of Ecological Features

In line with the CIEEM PEA Guidelines, and based on the above baseline information, each ecological feature recorded within the study area is considered to have the importance provided in Table 9, using the Methodology as defined in Section 4 of the CIEEM EcIA Guidelines (2018).

Table 9 Importance of Ecological Features

Feature	Importance	Rationale
River Mease SAC	International	Internationally designed site for nature conservation.
River Mease SSSI	National	Nationally designed site for nature conservation.
LWS/pLWS	County	Designated sites important on a county scale.
Hedgerows	County	The boundary habitats comprised hedges that were relatively species rich and varied in age and structure. These are likely to form connections across the site and within the wider landscape for a variety of ecological features e.g. breeding birds, bats and other mammals.
Semi-natural broad-leaved woodland	Local	A small block of semi-natural woodland is found in F5. It has a relatively low species diversity, but offers suitability for a variety of ecological features e.g. breeding birds, bats, GCN, reptiles and other mammals.
Dominant habitat types	Negligible	The dominant habitat types within the site is either arable crops or agriculturally improved grassland, with little or no marginal vegetation and potential to support rare arable weeds. These monocultures are of negligible importance in terms of plant species diversity, but can support protected and notable species.
GCN	Unknown	There are at least eight ponds on site that could support GCN and a further 17 within 500 m of site. These have not been surveyed to determine presence or likely absence.
Reptiles	Unknown	Field boundaries which include long grasses, scrub and tall ruderal herbs, and woodland on site have the potential to support reptiles. These areas have not been surveyed to determine presence or likely absence.
Bats – Roosting	Unknown	Several trees on site have features with the potential to support roosting bats. However, without further survey it is not possible to know how many roosts exist within the boundaries of the site.
Bats – Commuting and Foraging	Unknown	The hedgerows that form the field boundaries have the potential to support commuting and foraging bats and likely to be of local importance or above.

Feature	Importance	Rationale
		The agricultural fields on site are unlikely to support diverse insect assemblages and are therefore not likely to be of high importance for foraging bats.
Badger	Local	Two suspected subsidiary setts, single hole outliers and a variety of field signs were found in small quantities across site. The habitats offer suitable sett building, foraging and commuting habitats. Further surveys will be required to establish the extent of badger setts and activity on site once a development footprint has been established.
Other notable species	Local	There is suitable habitat on site and local records for brown hare, harvest mouse and hedgehog. The site is likely to be of local importance for all three species.
Either: International (incl. European) / National / Regional / County / Local / Negligible Or: Unknown (i.e. further surveys/information needed)		

The potential for the proposals to have adverse or beneficial impacts on these features, along with the need for any mitigation or enhancement measures are discussed in detail below.

4.0 Relevant Planning Policy & Legislation

4.1 Revised National Planning Policy Framework

A revised NPPF was issued on 19th February 2019 (Ministry of Housing Communities and Local Government, 2019) and currently supplements government Circular 06/2005, *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System* (Office of the Deputy Prime Minister, 2005).

Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. Paragraph 170 of the NPPF also states that:

"Planning policies and decisions should contribute to and enhance the natural environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*

Paragraph 174 then goes on to confirm that:

"When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is*

where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."*

Regarding EcIA's and HRA's – any sites identified, or required, as compensatory measures for adverse effects on any Natura 2000/habitats site should also be given the same level as protection as the pSPA's and cSAC's themselves. In addition, when an application is being determined, Paragraph 177 clarifies that:

"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."

Paragraph 180 is also relevant as;

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:...

- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation."*

4.2 Biodiversity 2020: A strategy for England's Wildlife & Ecosystem Services

Biodiversity 2020 (DEFRA, 2011) replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are the SPI & HPI detailed under NERC Act (see Appendix B for further details).

4.3 Local Biodiversity Action Plan

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government

organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

The Lowland Derbyshire BAP is the relevant document for this site. In the Lowland Derbyshire BAP, eight action areas have been selected based upon regional landscape characterisation. Within the BAP, targets are set for NERC Act HPIs and SPIs which are considered appropriate for each Action Area.

The site is located within the Derby Action Area. The habitats and species for which action plans are included in the LBAB for this area are provided in Table 6 and 7.

Table 10 Lowland Derbyshire BAP HAPs

Species Action Plans	
Floodplain grazing marsh	Lowland mixed deciduous woodland
Wood-pasture and parkland	Ponds
Rivers and streams	Lowland meadow
Hedgerows	Swamp
Wet woodland	Open mosaic habitats
Lakes	Lowland calcareous grassland
Lowland dry acid grassland	Traditional orchards
Green roofs	-

Table 10 Lowland Derbyshire BAP SAPs

Habitats Action Plans	
GCN	Otter
Water vole	White-clawed crayfish
White-letter hairstreak <i>Satyrrium w-album</i>	

It should be noted that the existence of a SAP or HAP does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature (for example).

4.4 Local Plan

The South Derbyshire Local Plan (2011-2028) is split into two parts, Part 1 adopted on June 13, 2016 and Part 2 adopted November 2, 2017. It sets the long-term vision, objectives and strategy for the spatial development of South Deryshire.

Policy BNE3 relates to biodiversity and it states that:

"Part A: The Local Planning Authority will support development which contributes to the protection, enhancement, management and restoration of biodiversity or geodiversity and delivers net gains in biodiversity wherever possible by:

- i. Protecting sites of International, European, National and County importance, together with local nature reserves, from inappropriate development within and adjacent to sites;*
- ii. Delivering long term plans to restore the River Mease site of Special Scientific Interest (SSSI)/Special Area of Conservation (SAC) to a more natural condition and improve water quality within Mease and other catchments failing to meet Water Framework Directive objectives.*
- iii. Developing and maintaining a District-wide ecological network of SSSI's and local wildlife sites together with corridors and stepping stones sites to support the integrity of the biodiversity network, prevent fragmentation, deliver ecosystem services and enable biodiversity to respond and adapt to the impacts of climate change.*
- iv. Supporting and contributing to the targets set out in the Lowland Derbyshire and/or National Forest Biodiversity Action Plan (BAP) for priority habitats and species*
- v. Protecting ancient woodland and veteran trees from loss, unless the need for, and benefits of, the development in that location clearly outweigh the loss.*

Part B: Planning proposals that could have a direct or indirect effect on sites with potential or actual ecological or geological importance including:

- vi. Internationally important sites*
- vii. Nationally important sites (such as SSSIs)*
- viii. Sites of County importance (such as Local Nature Reserves, Local Wildlife Sites and Local Geological Sites)*
- ix. Ancient woodlands, veteran trees and hedgerows*
- x. Priority habitats and species*
- xi. will need to be supported by appropriate surveys or assessments sufficient to allow the Authority to fully understand the likely impacts of the scheme and the mitigation proposed. Where mitigation measures, or exceptionally, compensation cannot sufficient offset the significant harm resulting from the development and/or where the development can potentially be located on an alternative site that would cause less or no harm, planning permission will be refused."*

4.5 Legislation

Full details of the UK legislation and offences which are relevant to the ecological receptors identified are included in Appendix B. However, based on the findings of our assessment, it is considered that the proposals will need to consider the following legal provisions:

- The Habitats Directive 92/43/EEC – relating to the potential for effects on a Natura 2000 site.
- Conservation of Habitats and Species Regulations 2017 – Relating to the potential for effects on EPS due to the potential presence of GCN.

- The W&CA 1981 (as amended) – relating to the potential for effects on reptiles and nesting birds, including those receiving additional protection due to being on Schedule of the Act.
- The Protection of Badgers Act 1992 – relating to the potential for badger setts to be affected.
- The NERC Act 2006 relating to species listed in accordance with the requirements of Section 41, e.g. hedgehogs.
- The Hedgerow Regulations.
- Wild Mammals (Protection) Act 1996 – relating to construction works and provisions that must be made to prevent offences under the Act.

5.0 Discussion

5.1 Designated Sites

Natura 2000 Sites

The River Mease SAC is located 1.78 km south of site. The installation of a ground mounted solar farm will not result in the direct loss or degradation of habitats which support qualifying features of the SAC. However, a tributary flows from the south-western corner of site (West Brook) to the River Mease, and the site is within the IRZ for the River Mease SSSI. It is therefore considered likely that there are potential pathways to Likely Significant Effects (LSE) and a report to inform Stage 1: Screening of an HRA (as a minimum) will be required. This should form part of consultation on the project with Natural England. The potential pathways to effects on the SAC / SSSI that would require assessment and consultation have yet to be determined, but are likely to construction phase pollution events and changes in hydrology affecting the neighbouring tributary of the River Mease.

Sites of Special Scientific Interest

The site falls with the IRZ for the River Mease SSSI. The works associated with the site are listed on MAGIC as activities that have the potential to impact upon the SSSI (Wind and Solar Energy) and effects and therefore consultation with Natural England is required.

Local Wildlife Sites / Potential Local Wildlife Sites

The closest LWS / pLWS is Hill Close Wood Pond, located 0.81 km north-west. The installation of a ground mounted solar farm is unlikely to have significant direct or indirect effects on this LWS (or on any other LWS / pLWS listed above).

5.2 Habitats

The dominant habitat types are common and widespread in the wider area and of negligible inherent ecological value. Therefore further surveys are not required to establish the impacts of the potential effects of development loss of this habitat type. However, this does not negate the requirement to survey for species that the habitat may support e.g. wintering birds.

A large proportion of the hedgerows on site have the minimum number of woody species and potential to qualify as 'important'. If boundary hedges are to be significantly affected by the development, then further surveys would be required. This would comprise an assessment of their potential to be designated as 'important' under the ecological criteria of The Hedgerow Regulations 1997. This assessment would be needed to establish whether permission for the LPA would be required for any removal, and is based on ecological structure and historical context.

5.3 Protected & Notable Species

Based on the findings of the extended Phase 1 survey, a number of species or species groups can be scoped out from further survey or assessment. There are also several where further surveys are

required to establish presence or likely absence and for future impact assessments to be made. These are summarised in the following sections.

5.3.1 Ecological Features Where Further surveys Are Required

It is considered that the following species or species groups will require further survey to inform any assessment of effects the development of the site may have:

Great crested newt

There are at least eight ponds on site and a further 17 within 500 m of the site. The ponds that could be accessed were scoped for the suitability to support GCN using HSI assessments (Oldham *et al.*, 2000). Remaining ponds should also be assessed in this manner. If suitable, the ponds will need to be visited in the 2020 breeding season (March to June) to establish presence or likely absence. This could be achieved following one visit via environmental DNA sampling or using traditional methods (torching, bottle trapping, egg searching and netting) which would require four visits.

If present, an assessment of potential impacts on GCN would need to be made, which would need to include population estimate surveys. This would comprise making a determination as to whether individual GCN could be injured or killed and / or habitat could be lost that support them. If either the potential for either impact is found to be the case then an EPSL would be required.

The EPSL would detail the mitigation measures required to protect individual GCN and compensate for any habitat losses.

Reptiles

The potential for the site to support large populations of reptiles is considered to be low as suitable habitat was generally restricted to field boundaries. However, further surveys are recommended to establish what the population is before an assessment of effects of development can be made. These can be completed between March and October. This surveys comprise a minimum of seven visits to establish presence or absence of reptiles, but the LPA can request up to 20 visits where population estimates are deemed necessary.

Roosting bats

There are several trees with features that offer potential roosting opportunities for bats. These trees are located in various locations including those in the boundaries, standalone mature trees and within the small block of woodland on site. It is therefore recommended that as designs develop, trees identified on the boundary that may be affected either directly (by felling) or indirectly are surveyed. Indirect effects would be via noise, lighting and vibration during the construction phase and occupation of the site.

These surveys comprise a combination of climbing surveys (or accessing potential roosting features using ladders), or dusk emergence / dawn re-entry surveys where necessary. The numbers of visits varies according to the feature present, but is typically one to four visits.

Foraging and Commuting bats

The site is considered of low suitability for foraging bats. However, the site offers high quality commuting routes which provide connectivity to the wider landscape. Overall the site is considered of overall offer moderate suitability for foraging and commuting bats.

It is recommended that the LPA are consulted on the requirement to complete activity surveys, which would establish how the site is used. The LPA may request these surveys as a constituent part of understanding the baseline of the site as this is a relatively large scheme. However, it may also be possible that the need for survey can be avoided. This could potentially be achieved by presenting a design with inherent mitigation for impacts. This could take the form of work exclusion buffer zones from habitats that are assessed as likely to act as corridors for bats e.g. hedges and woodland and / or enhancement of other retained areas.

If activity surveys are requested by the LPA, best practice guidelines (Collins, 2016) would require eight visits between April and October, supplemented with gathering data using automatic detectors. These surveys would record the species, relative abundance and distribution of bats.

Badgers

Badgers are present on site, including two suspected subsidiary setts and single hole outlier setts. This survey was not designed to extensively survey for badgers, furthermore surveys in summer (June – August inclusive) are sub-optimal as dense vegetation can obscure evidence. Setts can be damaged by vibration and noise, which would constitute a breach of the wildlife legislation protecting them (The Protection of Badgers Act 1992). Therefore a badger survey should be carried out in late autumn or early spring to establish the number and types of sett present on site.

Wintering and Breeding birds

The site has the potential to support significant assemblages of wintering and breeding farmland birds. This is supported by the species records provided by the desk study and suitable habitats occurring on site. It is considered that the loss of habitats for bird species may form the most significant impact of the development proposals on the ecology of the site.

Further surveys would therefore be required to establish the importance of the assemblage of birds that the site supports. During the wintering season, surveys would comprise one visit per month between November and February inclusive. During the breeding season, the surveys would comprise four visits, one per month between March and June.

5.3.2 Ecological Features Where Further Surveys are not Required

It is considered that the following species or species groups will not require further survey to inform any assessment of effects that development of the site may have:

Otter and Water Vole

The habitats on site are unsuitable for otter and water vole, therefore it is considered that no otters or water vole would be affected by development of the site.

Invertebrates

It is not considered necessary to complete surveys for invertebrates to establish the effects of development as the site is likely to support a limited assemblage of common and widespread invertebrate species only.

Other notable species

Brown hare, harvest mouse and hedgehog are likely to use the site, and further surveys would be unlikely to alter the outcome of any assessment of effects. This is on the understanding that the

status of these species as having SAPs and listed in accordance with requirements of Section 41 of the NERC Act is recognised in the development of mitigation during the planning process.

Invasive Species

No invasive species were recorded during the survey and therefore there is currently no need for further survey. However historic records of invasive species are present within 2km of the site. Should any invasive species be incidentally recorded during other protected species surveys, a specialised survey should be completed. This would map the extent of any invasive plant species to inform a reasonable avoidance and mitigation strategy.

6.0 Summary

6.1 Designated Sites

- It is not considered likely that there is the potential for Likely Significant Effects on the River Mease SAC or SSSI, . However, Natural England should be consulted on the project and a report to inform Stage 1: Screening of an HRA is likely to be required.
- There are unlikely to be significant direct or indirect effects upon LWS and pLWS sites within 2km of the site.

6.2 Habitats

- Dominant habitats on site are common and widespread and of negligible ecological value.
- A large proportion of the hedgerows on site may qualify as 'important' under The Hedgerow Regulations 1997 and therefore additional survey, permissions and mitigation may be required prior to removal.

6.3 Protected & Notable Species

Based on the results from the desk study and survey results, additional information for the following species or species groups is required to inform an assessment of potential effects:

- Hedgerows;
- GCN;
- Reptiles;
- Roosting bats;
- Foraging and commuting bats (dependant on the outcome of LPA consultation);
- Badgers; and
- Wintering and breeding birds.

At this stage it is considered that the loss of habitats for bird species may form the most significant impact of the development proposals on the ecology of the site.

Based on the same data, the following species or species groups are either unlikely to be significantly affected by the development of the site, or sufficient information is available to determine impacts and possible mitigation:

- Otter and water vole;
- Invertebrates;
- Other notable species; and
- Invasive plant species.

7.0 References

- Bright, P.W., Morris, P.A. and Mitchell-Jones, A., (2006), *Dormouse Conservation Handbook*, 2nd Edition, English Nature: Peterborough.
- BSI Group, (2013), *BS 42020 – a code of practice for biodiversity in planning and development*, [online] Available at <https://www.bsigroup.com/LocalFiles/en-GB/biodiversity/BS-42020-Smart-Guide.pdf>, Accessed August 2019.
- CIEEM, (2017), *Guidelines for Preliminary Ecological Appraisal*, 2nd Edition, CIEEM: Winchester.
- CIEEM, (2018), *Guidelines for Ecological Impact Assessment*, CIEEM: Winchester.
- Collins, J. (ed.), (2016), *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3rd Edition, The Bat Conservation Trust: London.
- DEFRA, (2011), *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, [online] Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf, Accessed September 2019.
- Derbyshire County Council, (2011), *Lowland Derbyshire Biodiversity Action Plan*, [online] Available at <https://www.derbyshire.gov.uk/site-elements/documents/pdf/environment/conservation/ecology/lowland-derbyshire-biodiversity-action-plan/lowland-derbyshire-biodiversity-action-plan-lbap-2011-2020.pdf>, Accessed September 2019.
- Eaton, M., Aebischer, N., Brown, A., Hearn, R. Lock, L. Musgrove, A., Noble, D. Stround, D. and Gregory, R. (2015) Birds of conservation concern 4: the population status of birds in the UK, channel islands and isle of man. *British birds*, 108:708-746.
- Gent, T. and Gibson, S., (2003), *Herpetofauna Workers' Manual*, JNCC: Peterborough.
- Harris, S., Cresswell, P. and Jeffries, D., (1989), *Surveying badgers. An occasional publication of the mammal society – No. 9.*, Mammal Society: London.
- JNCC, (2010), *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*, JNCC: Peterborough.
- Langton, T.E.S., Beckett, C.L. and Foster, J.P., (2001), *Great Crested Newt Conservation Handbook*, Froglife: Halesworth.
- Ministry of Housing Communities and Local Government, (2019), *National Planning Policy Framework*, [online] Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf, Accessed August 2019.
- ODPM, (2005), *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*, [online] Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf, Accessed August 2019.
- Oldham R.S., Keeble J., Swan M.J.S. and Jeffcote M., (2000), Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*), *Herpetological Journal*, 10 (4), 143-155.
- Stace, C., (2019), *New Flora of the British Isles*, 4th Edition, C&M Floristics Middlewood Green, Suffolk.

Please note that the legislation which is relevant to this report is not included in the list above, but details are included in Appendix B.

FIGURES

Figure 1 – Site location plan

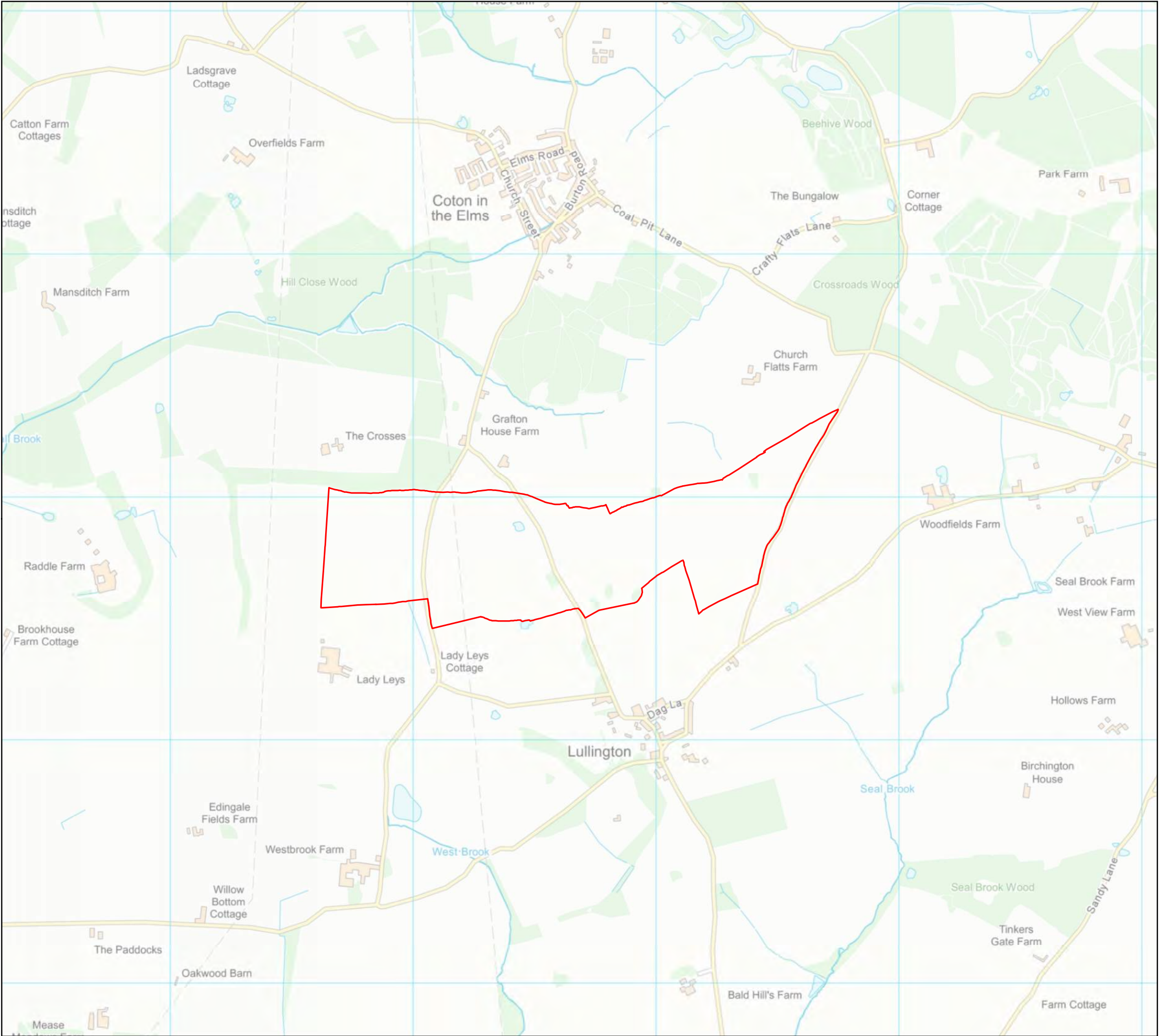
Figure 2 – Designated sites

Figure 3 – DWT records

Figure 4 – SER records

Figure 5 – Phase 1 map west

Figure 6 – Phase 1 map east



Rev	Date	Notes
A	17/09/19	Initial map production

Legend

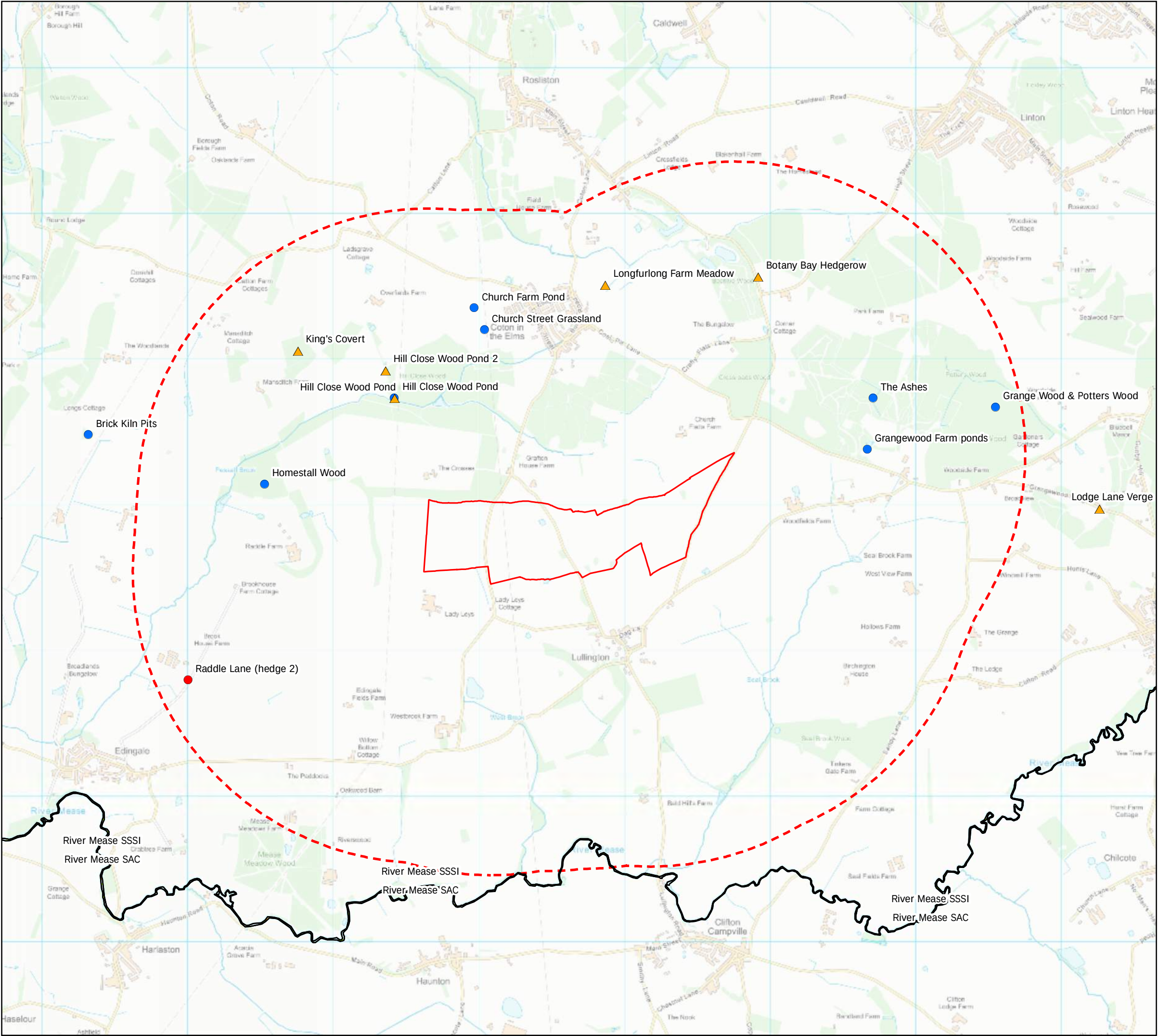
Site boundary



Site Location Plan

Lullington Solar Farm Island Green Power UK Limited			
Scale at A3: 1:15,000	Project No: A114441	Drawing No: Figure 1	Revision: A
Drawn by: Ben Blowers		Drawn date: 17/09/2019	Approved by: Jonathan Jackson

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Rev	Date	Notes
A	17/09/19	Initial map production

Legend

- Site boundary
- Site boundary 2km buffer
- Special Areas of Conservation (SAC)
- Sites of Special Scientific Interest (SSSI)
- LWS SER
- LWS DWT
- pLWS DWT

0 250 500 1,000 Metres

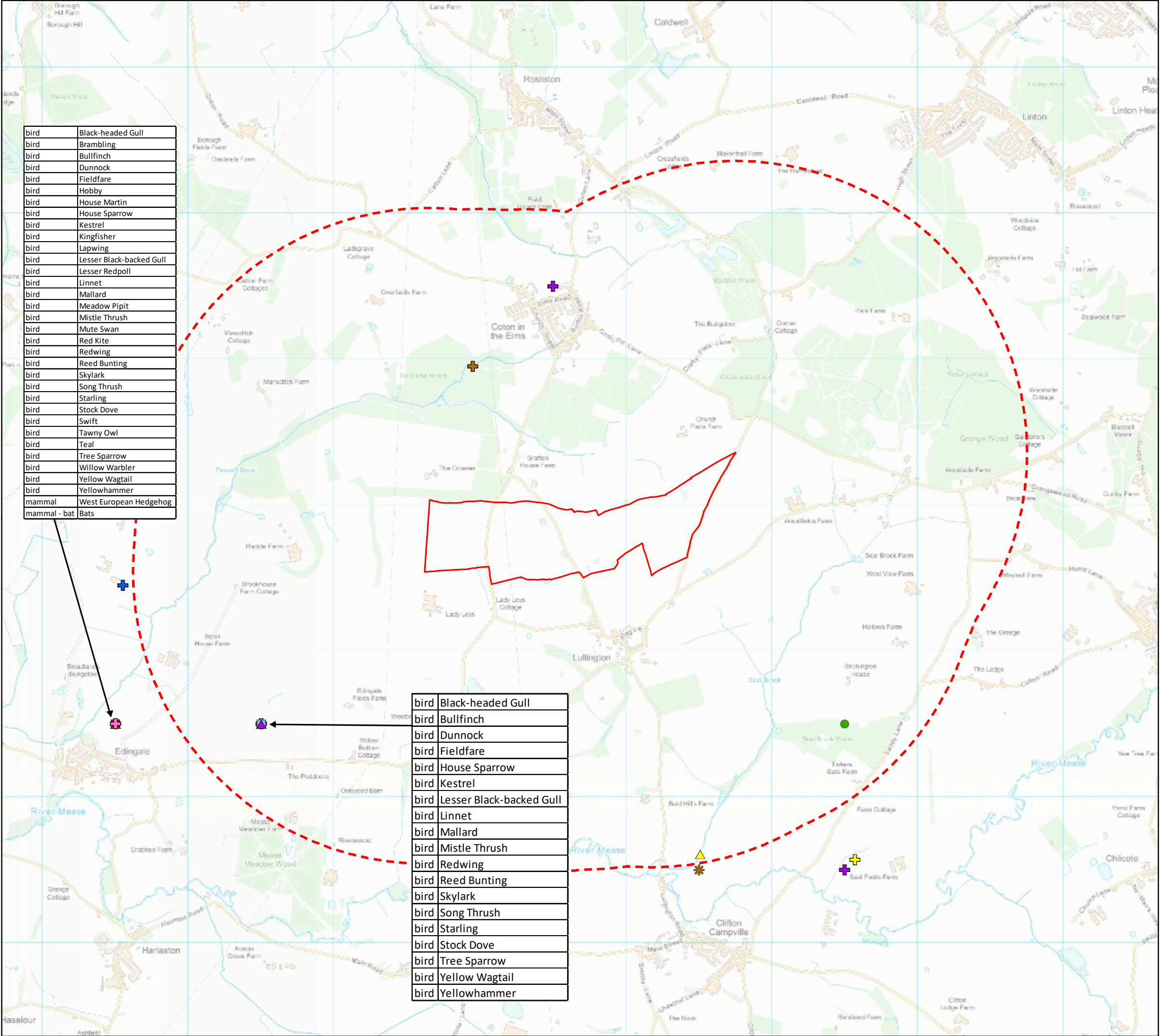


Designated Sites Location Plan

Lullington Solar Farm
Island Green Power UK Limited

Scale at A3: 1:25,000	Project No: A114441	Drawing No: Figure 2	Revision: A
Drawn by: Ben Blowers	Drawn date: 17/09/2019	Approved by: Jonathan Jackson	

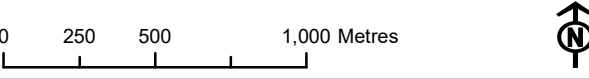
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Rev	Date	Notes
A	17/09/19	Initial map production

Legend

- Site boundary
- Site boundary 2km buffer
- bird, Black-headed Gull
- bird, Brambling
- bird, Bullfinch
- bird, Dunnock
- bird, Fieldfare
- bird, Hobby
- bird, House Martin
- bird, House Sparrow
- bird, Kestrel
- bird, Kingfisher
- bird, Lapwing
- bird, Lesser Black-backed Gull
- bird, Lesser Redpoll
- bird, Linnet
- bird, Mallard
- bird, Meadow Pipit
- bird, Mistle Thrush
- bird, Mute Swan
- bird, Red Kite
- bird, Redwing
- bird, Reed Bunting
- bird, Skylark
- bird, Song Thrush
- bird, Starling
- bird, Stock Dove
- bird, Swift
- bird, Tawny Owl
- bird, Teal
- bird, Tree Sparrow
- bird, Willow Warbler
- bird, Yellow Wagtail
- bird, Yellowhammer
- flowering plant, Jacob's-ladder
- mammal - bat, Bats
- mammal, Brown Hare
- mammal, Harvest Mouse
- mammal, West European Hedgehog
- reptile, Grass Snake

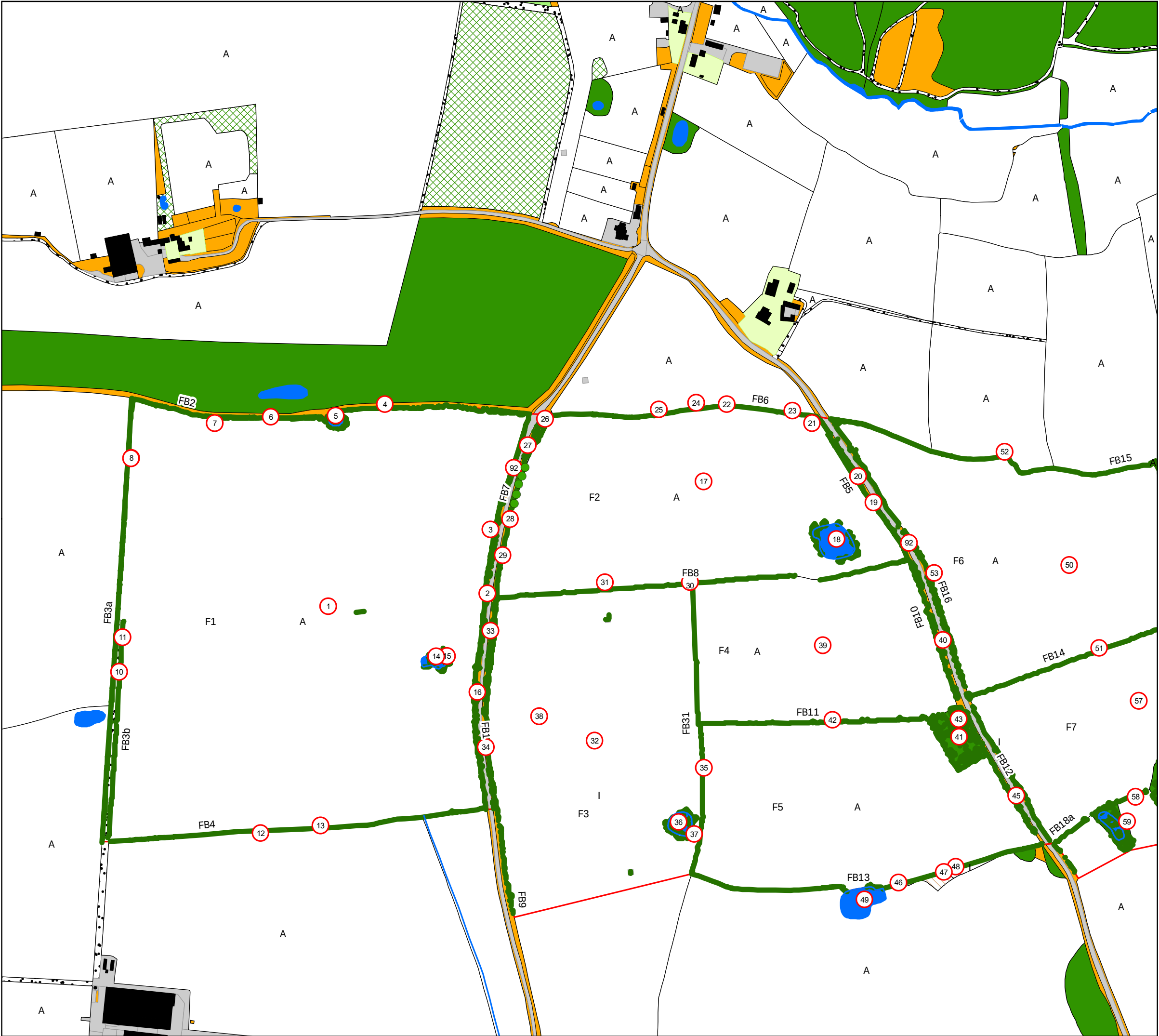


LWS

Lullington Solar Farm
Island Green Power UK Limited

Scale at A3: 1:25,000	Project No: A114441	Drawing No: Figure 4	Revision: A
Drawn by: Ben Blowers	Drawn date: 17/09/2019	Approved by: Jonathan Jackson	

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Rev	Date	Notes
A	17/09/19	Initial map production

Legend

- Site boundary
- Broadleaved woodland - semi-natural
- Coniferous woodland - semi-natural
- Scrub - dense/continuous
- Neutral grassland - unimproved
- SI Neutral grassland - semi-improved
- I Improved grassland
- Tall ruderal
- Standing water
- A Arable
- Gardens
- Buildings
- Hardstanding
- Bare ground
- Hedges
- Water
- Target note
- Scattered tree

0 50 100 200 Metres



Phase 1 Habitat Plan

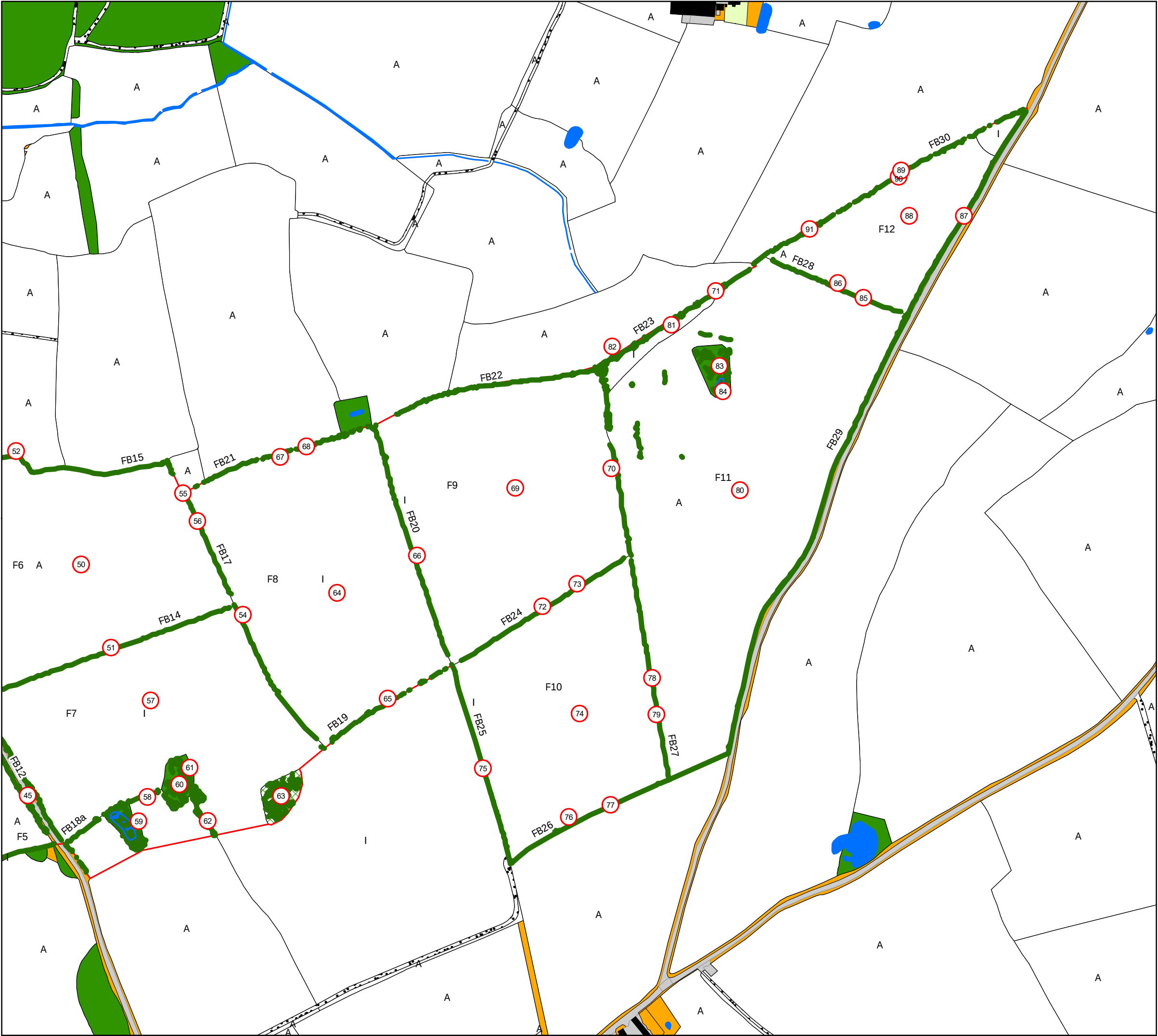
Lullington Solar Farm
Island Green Power UK Limited

Scale at A3: 1:4,060	Project No: A114441	Drawing No: Figure 5	Revision: A
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Drawn by: Ben Blowers	Drawn date: 17/09/2019	Approved by: Jonathan Jackson
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© 2019 Southwesterland 114441_LullingtonMOSFigure5_Phase1_30019.mxd



Rev	Date	Notes
A	17/09/19	Initial map production

Legend

- Site boundary
- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Neutral grassland - unimproved
- SI Neutral grassland - semi-improved
- I Improved grassland
- Standing water
- A Arable
- Gardens
- Buildings
- Hardstanding
- Bare ground
- Hedges
- Water
- Target note



Phase 1 Habitat Plan

Lullington Solar Farm Island Green Power UK Limited			
Scale at A3: 1:4,050	Project No: A114441	Drawing No: Figure 6	Revision: A
Drawn by: Ben Blowers		Drawn date: 17/09/2019	Approved by: Jonathan Jackson

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Appendix A – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of [Island Green Power Limited] ("the Client") for the proposed uses stated in the report by [WYG Environment Planning Transport Limited] ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.

Appendix B – Key Legislation

Bern Convention

The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention, and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directive* (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985 (as amended), Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CROW).

Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales, and via the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.

Birds Directive

The EC Directive on the Conservation of Wild Birds (79/409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

Conservation of Habitats and Species Regulations 2017 (as amended)

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Protection Areas (SPAs) within six years. Public bodies must also help preserve, maintain and re-establish habitats for wild birds.

The 2018 amendments mainly related to the impact of the *People Over Wind* decision and some implications arising for neighbourhood plan development and a range of other planning tools including Local Development Orders and Permission in Principle – see here for full details:

<https://www.legislation.gov.uk/ukxi/2018/1307/note/made>

The Regulations make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 - see below:

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plants
Horseshoe bats <i>Rhinolophidae</i> - all species	Shore dock <i>Rumex rupestris</i>
Common bats <i>Vespertilionidae</i> - all species	Killarney fern <i>Trichomanes speciosum</i>
Large Blue Butterfly <i>Maculinea arion</i>	Early gentian <i>Gentianella anglica</i>
Wild cat <i>Felis sylvestris</i>	Lady's-slipper <i>Cypripedium calceolus</i>
Dolphins, porpoises and whales <i>Cetacea</i> – all sp.	Creeping marsh-wort <i>Apium repens</i>
Dormouse <i>Muscardinus avellanarius</i>	Slender naiad <i>Najas flexilis</i>
Pool frog <i>Rana lessonae</i>	Fen orchid <i>Liparis loeselii</i>
Sand lizard <i>Lacerta agilis</i>	Floating-leaved water plantain <i>Luronium natans</i>
Fisher's estuarine moth <i>Gortyna borelii lunata</i>	Yellow marsh saxifrage <i>Saxifraga hirculus</i>
Great crested newt <i>Triturus cristatus</i>	
Otter <i>Lutra lutra</i>	
Lesser whirlpool ram's-horn snail <i>Anisus vorticulus</i>	
Smooth snake <i>Coronella austriaca</i>	
Sturgeon <i>Acipenser sturio</i>	
Natterjack toad <i>Epidalea calamita</i>	
Marine turtles <i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , <i>Dermochelys coriacea</i>	

Wildlife & Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the 'Bern Convention' and the Birds Directive are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use; or
- take or destroy an egg of any wild bird.

Or to intentionally do the following to a wild bird listed in Schedule 1:

- disturbs any wild bird while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places; and
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

- intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;
- unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; or
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9.

It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

Schedule 1 - Birds which are protected by special penalties

Avocet	<i>Recurvirostra avosetta</i>	Osprey	<i>Pandion haliaetus</i>
Bee-eater	<i>Merops apiaster</i>	Owl, Barn	<i>Tyto alba</i>
Bittern	<i>Botaurus stellaris</i>	Owl, Snowy	<i>Nyctea scandiaca</i>
Bittern, Little	<i>Ixobrychus minutus</i>	Peregrine	<i>Falco peregrinus</i>
Bluethroat	<i>Luscinia svecica</i>	Petrel, Leach's	<i>Oceanodroma leucorhoa</i>
Brambling	<i>Fringilla montifringilla</i>	Phalarope, Red-necked	<i>Phalaropus lobatus</i>
Bunting, Cirl	<i>Emberiza cirlus</i>	Plover, Kentish	<i>Charadrius alexandrinus</i>
Bunting, Lapland	<i>Calcarius lapponicus</i>	Plover, Little Ringed	<i>Charadrius dubius</i>
Bunting, Snow	<i>Plectrophenax nivalis</i>	Quail, Common	<i>Coturnix coturnix</i>
Buzzard, Honey	<i>Pernis apivorus</i>	Redstart, Black	<i>Phoenicurus ochruros</i>
Capercaillie	<i>Tetrao urogallus</i>	Redwing	<i>Turdus iliacus</i>
Chough	<i>Pyrrhocorax pyrrhocorax</i>	Rosefinch, Scarlet	<i>Carpodacus erythrurus</i>
Corncrake	<i>Crex crex</i>	Ruff	<i>Philomachus pugnax</i>
Crake, Spotted	<i>Porzana porzana</i>	Sandpiper, Green	<i>Tringa ochropus</i>
Crossbills (all species)	<i>Loxia</i>	Sandpiper, Purple	<i>Calidris maritima</i>
Curlew, Stone	<i>Burhinus oedicnemus</i>	Sandpiper, Wood	<i>Tringa glareola</i>
Divers (all species)	<i>Gavia</i>	Scaup	<i>Aythya marila</i>
Dotterel	<i>Charadrius morinellus</i>	Scoter, Common	<i>Melanitta nigra</i>
Duck, Long-tailed	<i>Clangula hyemalis</i>	Scoter, Velvet	<i>Melanitta fusca</i>
Eagle, Golden	<i>Aquila chrysaetos</i>	Serim	<i>Serinus serinus</i>
Eagle, White-tailed	<i>Haliaetus albicilla</i>	Shorelark	<i>Eremophila alpestris</i>
Falcon, Gyr	<i>Falco rusticolus</i>	Shrike, Red-backed	<i>Lanius collurio</i>
Fieldfare	<i>Turdus pilaris</i>	Spoonbill	<i>Platalea leucorodia</i>
Firecrest	<i>Regulus ignicapillus</i>	Stilt, Black-winged	<i>Himantopus himantopus</i>
Garganey	<i>Anas querquedula</i>	Stint, Temminck's	<i>Calidris temminckii</i>

Godwit, Black-tailed	<i>Limosa limosa</i>	Swan, Bewick's	<i>Cygnus bewickii</i>
Goshawk	<i>Accipiter gentilis</i>	Swan, Whooper	<i>Cygnus cygnus</i>
Grebe, Black-necked	<i>Podiceps nigricollis</i>	Tern, Black	<i>Chlidonias niger</i>
Grebe, Slavonian	<i>Podiceps auritus</i>	Tern, Little	<i>Sterna albifrons</i>
Greenshank	<i>Tringa nebularia</i>	Tern, Roseate	<i>Sterna dougallii</i>
Gull, Little	<i>Larus minutus</i>	Tit, Bearded	<i>Parus biarmicus</i>
Gull, Mediterranean	<i>Larus melanocephalus</i>	Tit, Crested	<i>Parus cristatus</i>
Harriers (all species)	<i>Circus</i>	Tree-creeper, Short-toed	<i>Certhia brachydactyla</i>
Heron, Purple	<i>Ardea purpurea</i>	Warbler, Cetti's	<i>Cettia cetti</i>
Hobby	<i>Falco subbuteo</i>	Warbler, Dartford	<i>Sylvia undata</i>
Hoopoe	<i>Upupa epops</i>	Warbler, Marsh	<i>Acrocephalus palustris</i>
Kingfisher	<i>Alcedo atthis</i>	Warbler, Savi's	<i>Locustella luscinioides</i>
Kite, Red	<i>Milvus milvus</i>	Whimbrel	<i>Numenius phaeopus</i>
Merlin	<i>Falco columbarius</i>	Woodlark	<i>Lullula arborea</i>
Oriole, Golden	<i>Oriolus oriolus</i>	Wryneck	<i>Jynx torquilla</i>
Animal (Vertebrate) Species Listed in Schedule 5 (full legal protection at all times)			
Horseshoe Bats (all species)	<i>Rhinolophidae</i>	Newt – Great Crested	<i>Triturus cristatus</i>
Typical Bats (all species)	<i>Vespertilionidae</i>	Snake – Smooth	<i>Coronella austriaca</i>
Dolphin – Bottle-nosed	<i>Tursiops truncatus (tursio)</i>	Toad, Natterjack	<i>Epidalea calamita</i>
Dolphin – Common	<i>Delphinus delphis</i>	Turtles – All Species	<i>Cheloniidae & Dermochelyidae</i>
Dormouse – Hazel	<i>Muscardinus avellanarius</i>	Basking Shark	<i>Cetorhinus maximus</i>
Pine Marten	<i>Martes martes</i>	Burbot	<i>Lota lota</i>
Porpoise – Harbour	<i>Phocaena phocaena</i>	Goby – Giant	<i>Gobius cobitis</i>
Otter – Eurasian	<i>Lutra lutra</i>	Goby – Couch's	<i>Gobius couchii</i>
Squirrel – Red	<i>Sciurus vulgaris</i>	Seahorse – Short-snouted ¹	<i>Hippocampus hippocampus</i>
Walrus	<i>Odobenus rosmarus</i>	Seahorse – Spiny	<i>Hippocampus guttulatus</i>
Water Vole	<i>Arvicola amphibius</i>	Sturgeon	<i>Acipenser sturio</i>
Whales – All Species	<i>Cetacea</i>	Vendace	<i>Coregonus albula</i>
Wildcat	<i>Felis sylvestris</i>	Whitefish	<i>Coregonus lavaretus</i>
Lizard – Sand	<i>Lacerta agilis</i>		
Animal (Vertebrate) Species Protected under Section 9 (1) part: Killing and Injuring & Section 9 (5) Sale			
Adder	<i>Vipera berus</i>	Slow-worm	<i>Anguis fragilis</i>
Lizard – Viviparous	<i>Zootoca vivipara</i>	Snake – Grass	<i>Natrix helvetica (natrix)</i>
Animals (Vertebrate) Species Protected under Section 9 (5) Sale only			
Frog – common	<i>Rana temporaria</i>	Newt – Smooth	<i>Lissotriton vulgaris</i>
Newt – Palmate	<i>Lissotriton helvetica</i>	Toad – Common	<i>Bufo bufo</i>
Animals (Vertebrate) Species Protected under Section 9 (1) (4)(a): Killing, Injuring & Taking and Damage / Destruction of place of shelter / protection only			
Allis Shad	<i>Alosa alosa</i>	Shark – Angel	<i>Squatina squatina</i>
Twaite Shad	<i>Alosa fallax</i>		
Butterflies & Moths – Full Protection under Schedule 5² at all times			
High brown fritillary	<i>Argynnis adippe</i>	Fisher's Estuarine Moth	<i>Gortyna borellii</i>
Large Blue	<i>Maculinea arion</i>	Barberry Carpet	<i>Pareulype berberata</i>

¹ Both sea horse species are protected in England only.

² Viper's Bugloss Moth *Hadena irregularis* was removed from Schedule 5 in 1996 as it is believed to be extinct.

Heath Fritillary	<i>Mellicta athalea</i>	Black-veined Moth	<i>Siona lineata</i>
Marsh Fritillary	<i>Eurodryas aurinia</i>	Sussex Emerald	<i>Thalera fimbrialis</i>
Swallowtail	<i>Papilio machaon britannicus</i>	Essex Emerald	<i>Thetidia smaragdalis</i>
Large Copper	<i>Lycaena dispar</i>	Fiery Clearwing	<i>Bembecia chrysidiformis</i>
Reddish-buff Moth	<i>Acosmetia caliginosa</i>	New-Forest Burnet	<i>Zygaena viciae</i>
Butterflies – Protected under Section 9 (5) Sale Only			
Purple Emperor	<i>Apatura iris</i>	Adonis Blue	<i>Lysandra bellargus</i>
Northern Brown Argus	<i>Aricia artaxerxes</i>	Chalkhill Blue	<i>Lysandra coridon</i>
Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>	Glanville Fritillary	<i>Melitaea cinxia</i>
Chequered Skipper	<i>Carterocephalus palaemon</i>	Large Tortoiseshell	<i>Nymphalis polychloros</i>
Large Heath	<i>Coenonympha tullia</i>	Silver-studded Blue	<i>Plebejus argus</i>
Small Blue	<i>Cupido minimus</i>	Black Hairstreak	<i>Strymonidia pruni</i>
Mountain Ringlet	<i>Erebia epiphron</i>	White-letter Hairstreak	<i>Strymonidia w-album</i>
Duke of Burgundy	<i>Hamearis lucina</i>	Brown Hairstreak	<i>Thecla betulae</i>
Silver-spotted Skipper	<i>Hesperia comma</i>	Lulworth Skipper	<i>Thymelicus acteon</i>
Wood White	<i>Leptidea sinapis</i>		
Other Invertebrates – Full Protection under Schedule 5 at all times			
Rainbow Leaf-beetle	<i>Chrysolina cerealis</i>	Tadpole Shrimp	<i>Triops cancriformis</i>
Spangled Diving-beetle	<i>Graphopterus zonatus</i>	Trembling Sea-mat	<i>Victorella pavidia</i>
Lesser Silver Water-beetle	<i>Hydrochara caraboides</i>	De Folin's Lagoon Snail	<i>Caecum armoricum</i>
Moccas Beetle	<i>Hypebaeus flavipes</i>	Sandbowl Snail	<i>Catinella arenaria</i>
Violet Click-beetle	<i>Limoniscus violaceus</i>	Freshwater Pearl Mussel	<i>Margaritifera margaritifera</i>
Bembridge Beetle	<i>Parcymus aeneus</i>	Glutinous Snail	<i>Myxas glutinosa</i>
New Forest Cicada	<i>Cicadetta montana</i>	Lagoon Snail	<i>Paludinella littorina</i>
Wart-Biter	<i>Decticus verrucivorus</i>	Lagoon Sea Slug	<i>Tenellia adspersa</i>
Mole-Cricket	<i>Gryllotalpa gryllotalpa</i>	Northern Hatchet-shell	<i>Thyasira gouldi</i>
Field-Cricket	<i>Gryllus campestris</i>	Tentacled Lagoon-worm	<i>Alkmaria romijni</i>
Norfolk Hawker Dragonfly	<i>Aeshna isosceles</i>	Lagoon Sand-worm	<i>Armandia cirrhosa</i>
Southern Damselfly	<i>Coenagrion mercuriale</i>	Medicinal Leech	<i>Hirudo medicinalis</i>
Fen Raft Spider	<i>Dolomedes fimbriatus</i>	Marine Hydroid	<i>Clavopsella navis</i>
Ladybird Spider	<i>Eresus niger (cinaberinus)</i>	Ivell's Sea Anemone	<i>Edwardsia ivelli</i>
Fairy Shrimp	<i>Chirocephalus diaphanus</i>	Starlet Sea Anemone	<i>Nematosella vectensis</i>
Lagoon Sand Shrimp	<i>Gammarus insensibilis</i>	Atlantic Stream (White-clawed) Crayfish	<i>Austropotamobius pallipes</i>
Other Invertebrates Protected under Section 9 (1) Possession & 9 (2) (5) Sale only			
Stag Beetle	<i>Lucanus cervus</i>	Roman Snail ³	<i>Helix pomatia</i>
Fan Mussel	<i>Atrina fragilis</i>	Pink Sea-fan	<i>Eunicella verrucosa</i>
Other Invertebrates Protected under Section 9 (4) (a) Damage / Destruction of Place of Shelter / Protection only			
Mire Pill Beetle	<i>Curimopsis nigrita</i>		
Vascular Plant Species - Full Protection under Schedule 8 at all times (previous Scientific name in brackets)			
Adder's-tongue Least	<i>Ophioglossum lusitanicum</i>	Lily – Snowdon	<i>Gagea serotina (Lloydia serotina)</i>
Alison- Small	<i>Alyssum alyssoides</i>	Marsh-mallow – Rough	<i>Malva setigera (Althaea hirsuta)</i>

³ England only

Broomrape – Bedstraw	<i>Orobanche caryophyllacea</i>	Milk-parsley – Cambridge	<i>Selinum carvifolia</i>
Broomrape – Oxtongue	<i>Orobanche picridis</i>	Mudwort – Welsh	<i>Limosella aquatica</i>
Broomrape – Thistle	<i>Orobanche reticulata</i> ⁴	Naiad – Holly-leaved	<i>Najas marina</i>
Cabbage – Lundy	<i>Coincya wrightii</i> (<i>Rhynchosinapis wrightii</i>)	Orache – Stalked	<i>Atriplex pedunculata</i> (<i>Halimione pedunculata</i>)
Calamint – Wood	<i>Clinopodium menthifolium</i> (<i>Calamintha sylvatica</i>)	Orchid – Early Spider	<i>Ophrys sphegodes</i>
Catchfly – Alpine	<i>Silene suecica</i> (<i>Lychnis alpina</i>)	Orchid – Ghost	<i>Epipogium aphyllum</i>
Centaury – Slender	<i>Centaureum tenuiflorum</i>	Orchid – Lapland Marsh	<i>Dactylorhiza lapponica</i>
Cinquefoil – Rock	<i>Potentilla rupestris</i>	Orchid – Late Spider	<i>Ophrys fuciflora</i>
Clary – Meadow	<i>Salvia pratensis</i>	Orchid – Lizard	<i>Himantoglossum hircinum</i>
Club-rush – Triangular	<i>Schoenoplectus triquetus</i> (<i>Scirpus triquetus</i>)	Orchid – Military	<i>Orchis militaris</i>
Colt's-foot – Purple	<i>Homogyne alpina</i>	Orchid – Monkey	<i>Orchis simia</i>
Cotoneaster – Wild	<i>Cotoneaster cambricus</i> (<i>C. integerrimus</i>)	Pear – Plymouth	<i>Pyrus cordata</i>
Cotton-grass – Slender	<i>Eriophorum gracile</i>	Pennycress – Perfoliate	<i>Microthlaspi perfoliatum</i> (<i>Thlaspi perfoliatum</i>)
Cow-wheat – Field	<i>Melampyrum arvense</i>	Pennyroyal	<i>Mentha pulegium</i>
Crocus – Sand	<i>Romulus columnae</i>	Pigmyweed	<i>Crassula aquatica</i>
Cudweed – Broad-leaved	<i>Filago pyramidata</i>	Pine - Ground	<i>Ajuga chamaepitys</i>
Cudweed – Jersey	<i>Gnaphalium luteoalbum</i>	Pink – Cheddar	<i>Dianthus gratianopolitanus</i>
Cudweed – Red-tipped	<i>Filago lutescens</i>	Pink – Childing	<i>Petrorhagia nanteuillii</i>
Cut-grass	<i>Leersia oryzoides</i>	Ragwort – Fen	<i>Jacobaea paludosa</i> (<i>Senecio paludosa</i>)
Deptford Pink	<i>Dianthus armeria</i>	Ramping-fumitory – Martin's	<i>Fumaria reuteri</i> (<i>F. martinii</i>)
Diapensia	<i>Diapensia lapponica</i>	Rampion – Spiked	<i>Phyteuma spicata</i>
Eryngo – Field	<i>Eryngium campestre</i>	Restharrow – Small	<i>Ononis reclinata</i>
Fern – Dickie's-bladder	<i>Cystopteris dickieana</i>	Rock-cress – Alpine	<i>Arabis alpina</i>
Fleabane – Alpine	<i>Erigeron borealis</i>	Rock-cress – Bristol	<i>Arabis scabra</i>
Fleabane – Small	<i>Pulicaria vulgaris</i>	Sandwort – Norwegian	<i>Arenaria norvegica</i> ⁵
Galingale – Brown	<i>Cyperus fuscus</i>	Sandwort – Teesdale	<i>Minuartia stricta</i>
Gentian – Alpine	<i>Gentiana nivalis</i>	Saxifrage – Drooping	<i>Saxifraga cernua</i>
Gentian - Dune	<i>Gentianella amarella</i> subsp. <i>occidentalis</i> (<i>Gentianella uliginosa</i>)	Saxifrage – Tufted	<i>Saxifraga cespitosa</i>
Gentian – Fringed	<i>Gentianopsis ciliata</i> (<i>Gentianella ciliata</i>)	Solomon's-seal – Whorled	<i>Polygonatum verticillatum</i>
Gentian - Spring	<i>Gentiana verna</i>	Sow-thistle – Alpine	<i>Cicerbita alpina</i>
Germander – Cut-leaved	<i>Teucrium botrys</i>	Spearwort – Adder's-tongue	<i>Ranunculus ophioglossifolius</i>
Germander – Water	<i>Teucrium scordium</i>	Speedwell – Fingered	<i>Veronica triphyllos</i>
Gladiolus – Wild	<i>Gladiolus illyricus</i>	Speedwell – Spiked	<i>Veronica spicata</i> ⁶
Goosefoot – Stinking	<i>Chenopodium vulvaria</i>	Spike-rush – Dwarf	<i>Eleocharis parvula</i>

⁴ The Weeds Act 1959 does not apply to thistles *Cirsium* & *Carduus* species supporting this broomrape.

⁵ All subspecies occurring in the UK

⁶ Both subspecies: *spicata* & *hybrida*

Grass-poly	<i>Lythrum hyssopifolia</i>	South-stack Fleawort	<i>Tephrosia integrifolia</i> <i>ssp. maritima</i>
Hare's-ear – Sick- leaved	<i>Bupleurum falcatum</i>	Star-of-Bethlehem – Early	<i>Gagea bohemica</i>
Hare's-ear – Small	<i>Bupleurum baldense</i>	Starfruit	<i>Damasonium alisma</i>
Hawk's-beard – Stinking	<i>Crepis foetida</i>	Strapwort	<i>Corrigiola littoralis</i>
Hawkweed – Northroe	<i>Hieracium northroense</i>	Violet – Fen	<i>Viola persicifolia</i>
Hawkweed – Shetland	<i>Hieracium zetlandicum</i>	Viper's-grass	<i>Scorzonera humilis</i>
Hawkweed – Weak- leaved	<i>Hieracium attenuatifolium</i>	Water-plantain – Ribbon- leaved	<i>Alisma gramineum</i>
Heath – Blue	<i>Phyllodoce caerulea</i>	Wood-sedge – Starved	<i>Carex depauperata</i>
Helleborine – Red	<i>Cephalanthera rubra</i>	Woodsia – Alpine	<i>Woodsia alpina</i>
Horsetail – Branched	<i>Equisetum ramosissimum</i>	Woodsia – Oblong	<i>Woodsia ilvensis</i>
Hound's-tongue – Green	<i>Cynoglossum germanicum</i>	Wormwood – Field	<i>Artemisia campestris</i>
Knawel – Perennial	<i>Scleranthus perennis</i> ⁷	Woundwort - Downy	<i>Stachys germanica</i>
Knot-grass – Sea	<i>Polygonum maritimum</i>	Woundwort – Limestone	<i>Stachys alpina</i>
Leek – Round-headed	<i>Allium sphaerocephalon</i>	Yellow-rattle – Greater	<i>Rhinanthus angustifolius</i>
Lettuce – Least	<i>Lactuca saligna</i>		
Vascular Plant Species – Partial Protection under Section 13 (2) Protection from commercial exploitation and sale			
Bluebell	<i>Hyacinthoides non-scripta</i>		
Bryophytes – Full Protection under Schedule 8 at all times			
Anamodon – Long- leaved	<i>Anomodon langifolius</i>	Flamingo Moss	<i>Desmatodon cernuus</i>
Blackwort	<i>Southbya nigrella</i>	Frostwort	<i>Gymnomitrium apiculatum</i>
Crystalwort – Lizard	<i>Riccia bifurca</i>	Glaucous Beard Moss	<i>Barbula glauca</i>
Earwort – Marsh	<i>Jamesoniella undulifolia</i>	Green Shield Moss	<i>Buxbaumia viridis</i>
Feathermoss – Polar	<i>Hygrohypnum polare</i>	Hair Silk Moss	<i>Plagiothecium piliferum</i>
Flapwort – Norfolk	<i>Leiocolea rutheana</i>	Knothole Moss	<i>Zygodon forsteri</i>
Grimmia – Blunt-leaved	<i>Grimmia unicolor</i>	Large Yellow Feather Moss	<i>Scorpidium turgescens</i>
Petalwort	<i>Petalophyllum ralfsii</i>	Millimetre Moss	<i>Micromitrium tenerum</i>
Lindenberg's Leafy- Liverwort	<i>Adelanthus lindenbergianus</i>	Multi-fruited River Moss	<i>Cryphaea lamyana</i>
Feather-moss Slender Green	<i>Drepanocladus vernicosus</i>	Nowell's Limestone Moss	<i>Zygodon gracilis</i>
Alpine Copper-Moss	<i>Melichhoferia melichoferia</i>	Rigid Apple Moss	<i>Bartramia stricta</i>
Baltic Bog-Moss	<i>Sphagnum balticum</i>	Round-leaved feather Moss	<i>Rhynchostegium rotundifolium</i>
Blue Dew-Moss	<i>Saelania glaucescens</i>	Schleicher's Thread Moss	<i>Bryum schleicheri</i>
Blunt-leaved bristle- Moss	<i>Orthotrichum obtusifolium</i>	Triangular Pygmy Moss	<i>Acaulon triquetrum</i>
Bright-Green Cave- Moss	<i>Cyclodictyon laetevirens</i>	Turpswort	<i>Geocalyx graveolens</i>
Cordate Beard Moss	<i>Barbula cordata</i>	Vaucher's Feather Moss	<i>Hypnum vaucheri</i>
Cornish Path Moss	<i>Ditrichum cornubicum</i>	Western Rustwort	<i>Marsipella profunda</i>
Derbyshire Feather Moss	<i>Thamnobryum angustifolium</i>		

⁷ Includes both subspecies: *perennis* & *prostratus*

Stoneworts – Full Protection under Schedule 8 at all times			
Bearded Stonewort	<i>Chara canescens</i>	Foxtail Stonewort	<i>Lamprothamnium papillosum</i>
Lichens – Full Protection under Schedule 8 at all times			
New Forest Beech Lichen	<i>Enterographa elaborata</i>	Forked Hair Lichen	<i>Bryoria furcellata</i>
Snow Caloplaca	<i>Caloplaca nivalis</i>	Golden Hair Lichen	<i>Teloschistes flavicans</i>
Tree Catapyrenium	<i>Catapyrenium psoromoides</i>	Orange-fruited Elm Lichen	<i>Caloplaca luteoalba</i>
Laurer's Catillaria	<i>Catillaria laurei</i>	River Jelly Lichen	<i>Collema dichotomum</i>
Convolute Cladonia	<i>Cladonia convoluta</i>	Starry Breck Lichen	<i>Buellia asterella</i>
Upright Mountain Cladonia	<i>Cladonia stricta</i>	Caledonia Pannaria	<i>Pannaria ignobilis</i>
Goblin Lights	<i>Catolechia wahlenbergii</i>	New Forest Parmelia	<i>Parmelia minarum</i>
Elm Gyalecta	<i>Gyalecta ulmi</i>	Oil Stain Parmentaria	<i>Parmentaria chilensis</i>
Tarn Lecanora	<i>Lecanora archariana</i>	Southern Grey Physcia	<i>Physcia tribacioides</i>
Copper Lecidea	<i>Lecidea inops</i>	Ragged Pseudo-cyphellaria	<i>Pseudocyphellaria lacerata</i>
Arctic Kidney Lichen	<i>Nephroma arcticum</i>	Rusty Alpine Psora	<i>Psora rubiformis</i>
Ciliate Strap Lichen	<i>Heterodermia leucomelos</i>	Rock Nail	<i>Calicium corynellum</i>
Coralloid Rosette Lichen	<i>Heterodermia propagulifera</i>	Serpentine Selanopsora	<i>Selanopsora liparina</i>
Ear-lobed Dog Lichen	<i>Peltigera lepidophora</i>	Sulphur Tresses	<i>Alectoria ochroleuca</i>
Lichens – Partial Protection under Section 13 (2) Commercial Exploitation and Sale Only			
Tree Lungwort	<i>Lobaria pulmonaria</i>		
Fungi – Full Protection under Schedule 8 at all times			
Royal Bolete	<i>Boletus regius</i>	Oak Polypore	<i>Buglossosporus pulvinus</i>
Hedgehog Fungus	<i>Hericium erinaceum</i>	Sandy Stilt Ball	<i>Battaria phalloides</i>
Invasive plant species listed in Schedule 9			
Australian swamp stonecrop or New Zealand pygmyweed	<i>Crassula helmsii</i>	Japanese rose	<i>Rosa rugosa</i>
Californian red seaweed	<i>Pilea californica</i>	Japanese seaweed	<i>Sargassum muticum</i>
Curly waterweed	<i>Lagarosiphon major</i>	Laver seaweeds (except native species)	<i>Porphyra</i> spp
Duck potato	<i>Sagittaria latifolia</i>	Parrot's-feather	<i>Myriophyllum aquaticum</i>
Entire-leaved cotoneaster	<i>Cotoneaster integrifolius</i>	Perfoliate alexanders	<i>Smyrnium perfoliatum</i>
False Virginia creeper	<i>Parthenocissus inserta</i>	Pontic rhododendron	<i>Rhododendron ponticum</i>
Fanwort or Carolina water-shield	<i>Cabomba caroliniana</i>	Purple dewplant	<i>Disphyma crassifolium</i>
Few-flowered garlic	<i>Allium paradoxum</i>	Red algae	<i>Grateloupia luxurians</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Rhododendron	<i>Rhododendron ponticum</i> × <i>Rhododendron maximum</i>
Floating water primrose	<i>Ludwigia peploides</i>	Small-leaved cotoneaster	<i>Cotoneaster microphyllus</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>	Three-cornered garlic	<i>Allium triquetrum</i>
Giant kelp	<i>Macrocystis</i> spp.	Variegated yellow archangel	<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>
Giant knotweed	<i>Fallopia sachalinensis</i>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
Giant rhubarb	<i>Gunnera tinctoria</i>	Wakame	<i>Undaria pinnatifida</i>
Giant salvinia	<i>Salvinia molesta</i>	Wall cotoneaster	<i>Cotoneaster horizontalis</i>
Green seafringers	<i>Codium fragile</i>	Water fern	<i>Azolla filiculoides</i>

Himalayan cotoneaster	<i>Cotoneaster simonsii</i>	Water hyacinth	<i>Eichhornia crassipes</i>
Hollyberry cotoneaster	<i>Cotoneaster bullatus</i>	Water lettuce	<i>Pistia stratiotes</i>
Hooked asparagus seaweed	<i>Asparagopsis armata</i>	Water primrose	<i>Ludwigia grandiflora</i>
Hottentot fig	<i>Carpobrotus edulis</i>	Water primrose	<i>Ludwigia uruguayensis</i>
Hybrid knotweed	<i>Fallopia japonica</i> × <i>Fallopia sachalinensis</i>	Waterweeds	<i>Elodea</i> spp.
Indian (Himalayan) balsam	<i>Impatiens glandulifera</i>	Yellow azalea	<i>Rhododendron luteum</i>
Japanese knotweed	<i>Reynoutria japonica</i>		

Protection of Badgers Act 1992

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger"

Natural Environment and Rural Communities Act 2006

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of Habitats and Species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 Habitats of Principal Importance and 1,150 Species of Principal Importance.

Hedgerow Regulations 1997

The Hedgerow Regulations were made under Section 97 of the Environment Act 1995 and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

Birds of Conservation Concern

This is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2015 (Eaton *et al*, 2015) and identified 67 red list species, 96 amber species, and 81 green species. The criteria are complex, but generally:

- **Red list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.
- **Amber list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localised in 10 sites or fewer and those whose 20% of the European population is found in the UK.
- **Green list** species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed

Global IUCN Red List

The International Union for Conservation of Nature (IUCN) Threatened Species was devised to provide a list of those species that are most at risk of becoming extinct globally. It provides taxonomic, conservation status and distribution information about threatened taxa around the globe.

The system catalogues threatened species into groups of varying levels of threat, which are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CE), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Evaluated (NE). Criteria for designation into each of the categories is complex, and consider several principles.

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision making process.

Wild Mammals (Protection) Act 1996

This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation.

Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.

It's application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.

Appendix C – Relevant Desk Study Data

Lullington Solar Farm: Ecological Appraisal

DWT & SER Bird Data



Species (common name)	Latin Name	Habitat Regulations 2017 Annex 1	WC&A Schedule 1	NERC Section 41	BOCC Red List
Kingfisher	<i>Alcedo atthis</i>	Yes	Yes	-	-
Eurasian teal	<i>Anas crecca</i>	-	-	-	-
Mallard	<i>Anas platyrhynchos</i>	-	-	-	-
Meadow pipit	<i>Anthus pratensis</i>	-	-	-	-
Swift	<i>Apus apus</i>	-	-	-	-
Black-headed gull	<i>Chroicocephalus ridibundus</i>	-	-	-	-
Stock dove	<i>Columba oenas</i>	-	-	-	-
Mute swan	<i>Cygnus olor</i>	-	-	-	-
House Martin	<i>Delichon urbicum</i>	-	-	-	-
Yellowhammer	<i>Emberiza citronella</i>	-	-	Yes	Yes
Reed bunting	<i>Emberiza schoeniclus</i>	-	-	Yes	-
Hobby	<i>Falco Subbuteo</i>	-	Yes	-	-
Kestrel	<i>Falco tinnunculus</i>	-	-	-	-
Brambling	<i>Fringilla montifringilla</i>	-	Yes	-	-
Lesser black-backed gull	<i>Larus fuscus</i>	-	-	-	-
Common linnet	<i>Linaria cannabina</i>	-	-	Yes	Yes
Red kite	<i>Milvus milvus</i>	-	Yes	-	-
Yellow wagtail	<i>Motacilla flava</i>	-	-	Yes	Yes
House sparrow	<i>Passer domesticus</i>	-	-	Yes	Yes
Tree sparrow	<i>Passer montanus</i>	-	-	Yes	Yes

Lullington Solar Farm: Ecological Appraisal

Species (common name)	Latin Name	Habitat Regulations 2017 Annex 1	WC&A Schedule 1	NERC Section 41	BOCC Red List
Willow warbler	<i>Phylloscopus trochilus</i>	-	-	-	-
Dunnock	<i>Prunella modularis</i>	-	-	Yes	-
Bullfinch	<i>Pyrrhula pyrrhula</i>	-	-	Yes	-
Tawny owl	<i>Strix aluco</i>	-	-	-	-
Starling	<i>Sturnus vulgaris</i>	-	-	Yes	Yes
Redwing	<i>Turdus iliacus</i>	-	Yes	-	Yes
Song thrush	<i>Turdus philomelos</i>	-	-	Yes	Yes
Fieldfare	<i>Turdus pilaris</i>	-	Yes	-	Yes
Mistle thrush	<i>Turdus viscivorus</i>	-	-	-	Yes
Lapwing	<i>Vanellus vanellus</i>	-	-	Yes	Yes

Appendix D – Target Notes

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F1	1	An agricultural field planted with Wheat.	
FB1	2	Eastern boundary – A 2.5 m tall hedge including ash, blackthorn, bramble, field maple, grey willow, hawthorn and oak. The hedge has an understory of grasses and herbs including broad leaved dock, cleavers, cock's-foot, common nettle, false oat grass, hedge bindweed, hogweed, perennial rye-grass, rosebay willowherb, spear thistle and wild carrot. There are several mammal paths within the hedge which are of the right size for badgers.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB1	3	A small oak tree that was observed to have small passerine species flying in and out, indicative of possible nesting behaviour. No nests could be observed at the time of survey.	
FB2	4	Northern Boundary – A 2-3 m tall hedgerow with occasional mature trees. Species included: ash, blackthorn, bramble, crab apple <i>Malus sylvestris</i>, field maple, hawthorn, holly and oak. A small lection of gorse <i>Ulex europaeus</i> was also present. The understory consisted of broad-leaved dock, cock's-foot, common burdock <i>Arctium minus</i>, common nettle, false oat grass, hedge bindweed, Nipplewort. perennial rye-grass, Ragwort <i>Jacobaea vulgaris</i>, Scentless mayweed <i>Tripleurospermum inodorum</i> and spear thistle.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB2	5	A small pond, surrounded by hedgerow species and bramble, which completely shade the pond. HSI Data: 1. Geographic Location: A 2. Pond Area m²: 100 3. Permanence: Never dries 4. Water Quality: Poor 5. Shade: 100 % 6. Water Fowl: Minor impact 7. Fish: Absent 8. Pond Count: 16 9. Terrestrial Habitat: Moderate 10. Macrophytes: 0 % HSI Score: 0.53 (below average).	
FB2	6	A clear mammal path through the northern hedge. The height, width and shape are indicative of use by badgers, however no hairs, latrines or other field signs were observed.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F1	7	Several areas of flattened crop, with some latrines interspersed within the area. Indicating the historic presence of badgers within the field.	
FB3a	8	A clear mammal path through the western boundary hedgerow. The height, width and shape are indicative of use by badgers, however no hairs, latrines or other field signs were observed.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB3a	9	Western Boundary – A 2-3m tall hedge consisting of ash, blackthorn, bramble, elder, hawthorn and ivy. The understory consisted of broad-leaved dock, cleavers, cock's-foot, cock's-foot, common nettle, hedge bindweed, hogweed, nipplewort, Perennial rye-grass, sow thistle, spear thistle, wild carrot, Yorkshire fog.	
F1	10	A strip of improved grassland between two hedge lines on the western boundary. The grassland is dominated by false oat grass and perennial rye-grass, with smaller quantities of cock's-foot. Herbaceous species included broad-leaved dock, broad-leaved plantain, cat's-ear <i>Hypochaeris radicata</i>, common daisy, common nettle, dandelion, sow thistle, spear thistle and wild carrot. There were also small patches of bramble.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB3b	11	Western boundary – A 2-2.5 m tall hedge that has been heavily flailed. It consisted of ash, bramble, elder, field maple, hawthorn, hazel and oak. The understory consisted of bitter nightshade, broad-leaved dock, cleavers, common nettle, false oat grass, perennial rye-grass, sow thistle, spear thistle <i>Cirsium arvense</i> and wild carrot.	
FB4	12	Southern boundary – A 2 m tall hedge consisting of blackthorn, bramble, elder, hawthorn, holly and oak. The understory consisted of common burdock, common nettle, false oat grass, perennial rye-grass, rosebay willowherb, scentless mayweed and spear thistle.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB4	13	A single oak within the south boundary hedgerow. Minor features suitable for bats were found at lower levels, such as knot holes. However, higher levels could not be observed due to dense foliage.	
F1	14	Pond situated within the agricultural field, surrounded by scrub and ephemeral herbs. The pond appears to seasonally dry, with only a few shallow pools at the time of survey. HSI Data: 1. Geographic Location: A 2. Pond Area m²: 300 3. Permanence: Dries annually 4. Water Quality: Poor 5. Shade: 100 % 6. Water Fowl: Absent 7. Fish: Absent 8. Pond Count: 18 9. Terrestrial Habitat: Good 10. Macrophytes: 70 % HSI Score: 0.58 (below average).	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F1	15	Two mature oak with features such as knot holes, sheering wounds and several splits offering suitability for roosting bats. Higher levels of the trees could not be observed due to dense foliage.	
FB1	16	Two oak situated within the eastern boundary hedgerow. Both trees had some features suitable for roosting bats, but higher levels of the trees could not be observed due to dense foliage.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F2	17	An agricultural field planted with wheat, that has been cropped and tracked through.	
F2	18	A large pond, with fishing platforms situated around its perimeter. Mallards <i>Anas platyrhynchos</i> were also present on the day. A mixture of trees and scrub surround it. HSI Data: 1. Geographic Location: A 2. Pond Area m²: 1200 3. Permanence: Never dries 4. Water Quality: Moderate 5. Shade: 70 % 6. Water Fowl: Minor 7. Fish: Major 8. Pond Count: 17 9. Terrestrial Habitat: Poor 10. Macrophytes: <10 % HSI Score: 0.4 (poor).	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB5	19	Eastern Boundary – Hedgerow 1.5-2 m tall, consisting of blackthorn, bramble, elder, hawthorn, hazel, holly and ivy. The understory consisted of cock's-foot, common nettle, false oat grass, hedge bindweed, hogweed, perennial rye-grass, spear thistle and wild carrot.	
FB5	20	Two oak trees with suitable features for roosting bats. Higher levels of the trees could not be observed due to dense foliage. Small passerines and wood pigeons <i>Columba palumbus</i> were observed flying to and from the trees.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB5	21	A well-trodden mammal path within the eastern boundary hedge. The shape and size of the path indicates that it may be used by a variety of mammals, including badgers.	
FB6	22	Northern Boundary – Hedgerow 1.5-2m tall with a similar woody species composition as the hedge at Target Note 19. However there is a greater proportion of blackthorn and hawthorn present. Herbaceous species are also similar, with the addition of cleavers and sow thistle.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB6	23	Two poplar trees <i>Populus spp.</i> that are of a suitable size to offer potential roosting features. However, the north facing aspect could not be accessed and higher levels of the tree could not be fully viewed due to dense foliage.	
FB6	24	A dead tree is located within the northern boundary hedge. The bark is almost completely stripped and an accurate species identification could not be attained. The tree has numerous wounds, snapped branches, helical splits and other access points that are suitable for roosting bats. A badger latrine was found adjacent to the tree. Further investigation identified a single badger hole underneath the tree which may be classified as an outlier sett.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
			 

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB6	25	A solitary oak situated in the northern boundary hedgerow. The tree is of a suitable size and age to provide suitable roosting features for bats. However, due to the hedgerow and the foliage at higher levels, the majority of the tree could not be sufficiently observed.	
FB7	26	Western Boundary – Dense bramble that forms part of the western boundary of site, linking with the tree line at TN27.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB7	27	Western Boundary – A tree line forms a significant proportion of the western boundary. Tree species include ash, horse chestnut <i>Aesculus hippocastanum</i>, Poplar <i>Populus</i> sp. and sycamore. The treeline merges into a patchy hedgerow at TN29.	
FB7	28	A single standing poplar situated within a patchy hedgerow. The tree is offers minor value for smaller nesting birds species. There are some small crevices at lower levels that offer limited suitability for roosting bats.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB7	29	Western boundary – A patchy hedgerow forms the remainder of the western boundary. It is low lying, with a maximum height of 1.5 m. The species composition is similar to that of TN19 and TN22, with the addition of willow <i>Salix</i> sp.	
FB8	30	Southern Boundary (F2)/ Northern Boundary (F3/F4) – A 2 m tall hedge, with gap to allow access into F4. It comprises of blackthorn, bramble, elder, field maple and hawthorn. The understory consists of cock's-foot, common nettle, false oat grass, hogweed, perennial rye-grass and wild carrot.	

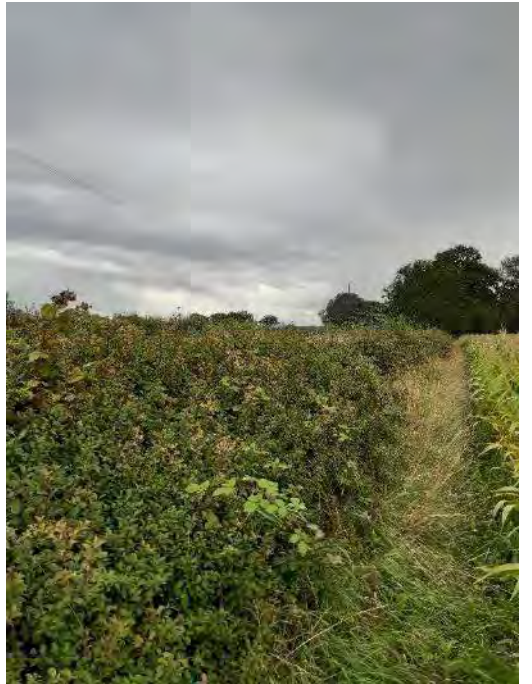
Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB8	31	A mammal path within the southern (F2) / Northern (F3) boundary hedge. The shape and size of the path indicates that it may be used by a variety of mammals, including badgers.	
F3	32	An improved grassland field that consists predominantly of perennial rye-grass with occasional cock's-foot and Yorkshire fog. The grassland is largely devoid of herbaceous species except in the very margins. These herbs are closely associated with boundary hedgerows and have been noted with them.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB9	33	An oak situated within the western boundary hedgerow. Although there were no potential roosting features for bats at lower levels, the tree is of sufficient age and size to offer feature. Higher levels could not be adequately viewed due to dense foliage. The tree offers suitable habitat for nesting birds.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB9	34	Western Boundary – Hedgerow 2 m tall consisting of blackthorn, bramble, field maple, hawthorn, hazel, holly and oak. The understory consists of broad-leaved dock, common nettle, hedge bindweed, hogweed, meadow vetchling <i>Lathyrus pratensis</i> and rosebay willowherb. The hedge conceals a ditch along its length. The majority of the ditch is dry, with small sections that are wet. This is likely attributed to rainfall during the survey, with the ditch likely to be seasonally wet only (i.e. wet in winter / spring, dry in summer / autumn).	 

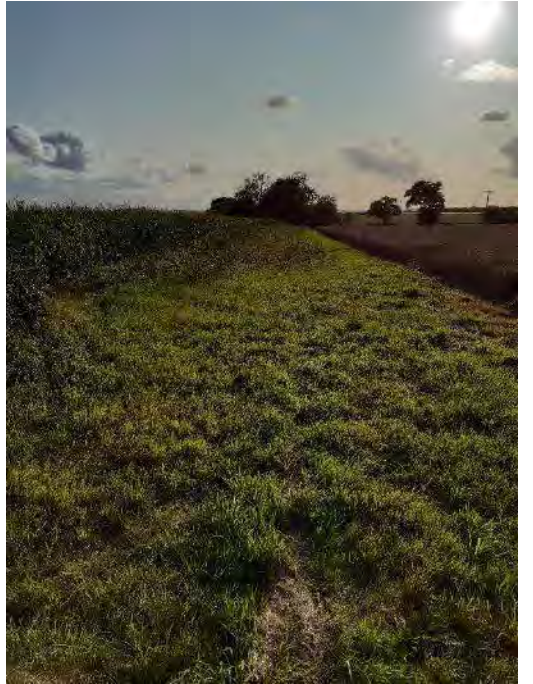
Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB31	35	Eastern Boundary (F3) / Western Boundary (F4 & 5) – Hedgerow 2 m in height consisting of blackthorn, bramble, elder, grey willow and Hawthorn. The understory consisted of broad-leaved dock, cock's-foot, common nettle, false oat grass, hogweed, perennial rye-grass, spear thistle and wild carrot. In some areas the herbaceous species encroached the improved grassland (TN32) in small patches.	
F3	36	A large pond, with the water surface completely choked by duckweed. The pond is surrounded by a mixture of ruderal herbs, willow scrub and semi-mature trees. Some of the banks are steep or inaccessible due to vegetation. HSI Data: 1. Geographic Location: A 2. Pond Area m²: 450 3. Permanence: Never Dries 4. Water Quality: Poor 5. Shade: 70 % 6. Water Fowl: Minor 7. Fish: Possible 8. Pond Count: 20 9. Terrestrial Habitat: Moderate 10. Macrophytes: 30 % HSI Score: 0.71 (Good)	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F3	37	A five-hole badger sett found on the eastern bank of a pond (TN36). The holes were an appropriate size and shape. They appeared to be inactive, with a lack of fresh spoil, no food discards and no hairs found on surface soil at each hole. There were also several pits in close proximity, but none with fresh dung.	
F3	38	Two large oaks within the improved grassland field (F3). No obvious features for roosting bats were observed from ground level. However, the trees are of an appropriate age and size to contain suitable features. Higher levels could not be adequately viewed due to dense foliage. Both trees offer suitable habitat for nesting birds.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F4	39	An agricultural field planted with maize, which was at a height of 1.5 m.	
FB10	40	Eastern Boundary – A 2.25 m tall hedge consisting of blackthorn, bramble and hawthorn. Understory species included bitter nightshade, cock's-foot, dove's foot cranesbill <i>Geranium molle</i>, hogweed, scentless mayweed, sow thistle, spear thistle, wild carrot and willowherb <i>Epilobium</i> sp.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F4/5	41	A semi-natural woodland forming part of the southern border of F4 and a section of F5. Tree species include ash, oak and sycamore. Trees varied in ages but were up to a height of 15 m, with 80% canopy cover overall. The ground layer consisted of leaf litter and the following plant species bramble, broad-leaved dock, common nettle, holly, ivy and spear thistle. Some areas were notably wetter than others, with patches of sedge. and soft rush growing in these areas.	 
FB11	42	Southern (F4) / Northern (F5) boundary – A 2 m tall hedge consisting of blackthorn, bramble, elder and hawthorn. Understory species includes cock's-foot, common nettle, perennial rye-grass, rosebay willowherb, spear thistle and wild carrot.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F4/5	43	A small, mostly dry woodland pond. The topography indicates this is likely to be a seasonally dry pond, with water presence during the time of survey due to recent rainfall. HSI Data 1. Geographic Location: A 2. Pond Area m²: ≤50 3. Permanence: Dries annually 4. Water Quality: Poor 5. Shade: 100 % 6. Water Fowl: Absent 7. Fish: Absent 8. Pond Count: 19 9. Terrestrial Habitat: Good 10. Macrophytes: 0 % HSI Score: 0.4 (poor)	
F5	44	An agricultural field planted with wheat.	Photo unavailable.
FB12	45	Eastern Boundary – A hedge 1.5-2 m tall consisting of blackthorn, bramble, elder, field Maple, grey willow, hawthorn, hazel, oak and sycamore. The understory consisted of broad-leaved dock, common nettle, false oat grass, perennial rye-grass, spear thistle and wild carrot.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB13	46	Southern Boundary – A defunct hedge 1.5-2m tall consisting of blackthorn, bramble, elder, hawthorn and oak.	
FB13	47	Southern Boundary - The gap in the hedge is occupied by improved grassland, which forms the understory and field margin (FB45b). This includes broad-leaved plantain, cat's-ear, cock's-foot, dandelion, perennial ryegrass, scentless mayweed and white clover.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB13	48	The gap also includes an area of tall ruderal herbs which includes broad-leaved dock, common nettle, rosebay willowherb, sow thistle and spear thistle.	
FB13	49	A large pond situated on the southern border of F5, but within a field external to the site boundary. The water appeared stagnant and not of good quality. HSI Data 1. Geographic Location: A 2. Pond Area m²: 1200 3. Permanence: Never dries 4. Water Quality: Bad 5. Shade: 60 % 6. Water Fowl: Absent 7. Fish: Minor 8. Pond Count: 19 9. Terrestrial Habitat: Good 10. Macrophytes: 10 % HSI Score: 0.51 (Below Average)	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F6	50	An agricultural field planted with wheat. that has been cropped and tracked through.	
FB14	51	Southern (F6) / Northern (F7) Boundary – A 2 m tall hedgerow consisting of blackthorn, bramble, elder, hawthorn and sycamore. Understory plants include cleavers, common nettle, false oat grass, hedge bindweed, hogweed, white bryony <i>Bryonia alba</i> and wild carrot.	
FB15	52	Northern Boundary – A 1.5-2.5 m tall hedge, with semi-mature trees in line. The hedge comprised of ash, blackthorn, bramble, dog rose, hawthorn, oak and sycamore. The understory consisted of cock's-foot, common nettle, false oat grass, hogweed, perennial rye-grass, spear thistle and wild carrot. The trees within the hedgerow were of a suitable size and age to contain roosting features for bats. However, the dense foliage at high levels meant detailed inspection was not possible.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB16	53	Western Boundary – a 1.75-2 m tall hedge consisting of ash, blackthorn, bramble, elder, field Maple, hawthorn, holly and oak. The understory consisted of a similar grasses to TN52, as well as scentless mayweed and wheat. that has encroached from the field.	
FB17	54	Eastern (F6 & F7) / Western (F8) Boundary – A 2.25 m tall hedge consisting of blackthorn, bramble, elder, hawthorn and oak. The understory consists of cock's-foot, common nettle, false oat grass, fern, perennial rye-grass and spear thistle.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB17	55	Several pittings, snuffle holes and a latrine, indicative of badger activity within F6. No hairs were observed on the adjacent barbed wire fence.	
F6	56	A single hole badger sett, located in close proximity to the eastern boundary hedgerow (TN54). There were fresh latrines in close proximity and signs that bedding had been dragged in recently.	

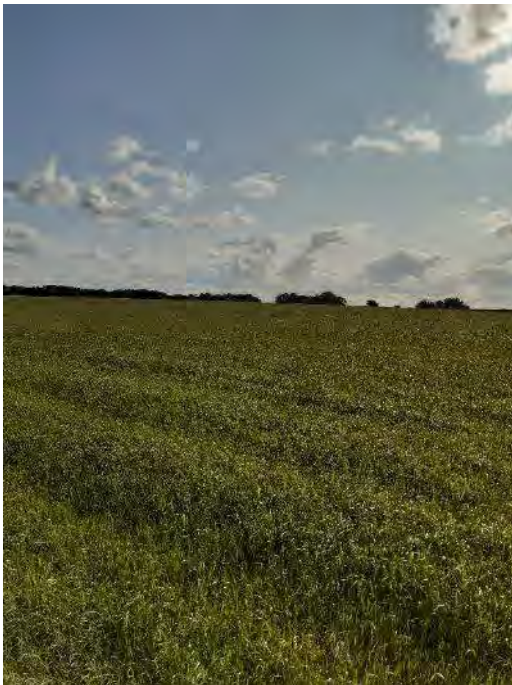
Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F7	57	An improved grassland field dominated by perennial rye-grass, with occasional Yorkshire fog. Herbaceous species included broad-leaved dock, broad-leaved plantain, meadow buttercup and white clover.	
FB18	58	Southern Boundary – A hedge of 1.5-2 m tall, part of which is made of mature trees. Species composition included blackthorn, bramble, elder, holly, ivy, oak and sycamore. The understory included common nettle, red campion, rosebay willowherb and spear thistle.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F7	59	A pond surrounded by willow scrub and mature ash and oak trees. Trees could not be safely accessed alone to check for bat roost potential. The pond could not be safely accessed and therefore the HSI assessment is based upon observations that could be made and aerial imagery. HSI Data 1. Geographic Location: A 2. Pond Area m²: 400 3. Permanence: Never Dries 4. Water Quality: Poor 5. Shade: 100 % 6. Water Fowl: Absent 7. Fish: Absent 8. Pond Count: 9. Terrestrial Habitat: Good 10. Macrophytes: 40 % HSI Score: 0.71 (Good)	
F7	60	Anecdotal evidence via the landowner indicated the potential presence of a pond within a small block of semi-natural woodland. Tree species included ash, oak, sycamore and willow. With a field layer including bramble, broad-leaved dock, common nettle and hedge bindweed. A check for the pond could not be completed safely due to scrub coverage obscuring view of ground conditions.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
7	61	A small strip of ruderal herbs in close proximity to the small woodland block (TN60). Species included, broad-leaved dock, common knotgrass, common nettle, hedge bindweed, nipplewort, perennial rye-grass, red campion, sow thistle and wild carrot.	Photo unavailable.
7	62	A stretch of hedge 1.5-2 m tall consisting of ash, blackthorn, bramble, field maple and grey willow. The field layer included perennial rye-grass and spear thistle.	
7	63	A small, dense area of bramble and grey willow scrub. Small passerines were observed utilising this habitat, possibly for nesting.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F8	64	An improved grassland field dominated by perennial rye-grass, with occasional Yorkshire fog. Herbaceous species were similar to that of F7, however horsetail was present within the field margins.	
FB19	65	Southern Boundary – A 1.75-2m tall hedge consisting of ash, bindweed, bramble, elder, hawthorn, hazel, holly and ivy. The understory contains bitter nightshade, broad-leaved dock, common nettle, hogweed, rosebay willowherb, spear thistle and wild carrot.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB20	66	Eastern (F8) / Western (F9) Boundary – hedgerow 2.25 m tall containing blackthorn, bramble, dog rose, elder, hawthorn and Hazel. The understory consists of cleavers, common nettle, hogweed, nipplewort, potato <i>Solanum tuberosum</i>, spear thistle and willowherb.	
FB21	67	Northern Boundary – a 2.25m tall hedgerow, with mature trees up to a height of 12 m. The hedge consisted of ash, bramble, elder, field maple, hawthorn, hazel, holly, oak and willow. It had an understory of broad-leaved dock, cleavers, common nettle, fern, spear thistle and willowherb. Several of the trees within the hedge line contained suitable roosting features for bats. However, higher levels could not be viewed from ground due to dense foliage.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB21	68	A single hole badger sett within the northern boundary hedge (TN67). There were signs of fresh digging and two latrines in close proximity. Due to the density of the hedgerow it was not possible to observe whether there were further holes.	
F9	69	An improved grassland field dominated by perennial rye-grass, with occasional Yorkshire fog. Herbaceous species included broad-leaved dock, broad-leaved plantain, meadow buttercup and white clover.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB22	70	East (F9) / West (F11) Boundary – A 1.5-2 m tall hedge, with numerous small gaps. Species include ash, bramble, blackthorn, elder, grey willow, hawthorn and oak. Understory species, which also form the gaps include bitter nightshade, broad-leaved dock, cleavers, common nettle, false oat grass, hogweed, nipplewort, perennial rye-grass, ragwort, rosebay willowherb, sow thistle and spear thistle.	
FB23	71	Northern Boundary – A 2m tall hedge consisting of ash, blackthorn, bramble, hawthorn, hazel, hedge bindweed and Oak. Understory species include bitter nightshade, broad-leaved dock, common nettle, hogweed, nipplewort, redshank <i>Persicaria maculosa</i> and willowherb.	
FB24	72	South (F9) / North (F10) Boundary – A 2 m tall hedger consisting of blackthorn, bramble, dog rose, elder, hawthorn and Hazel. In F9 the hedge is immediately adjacent to a dry ditch (Target Note 73). Understory species are listed within Target Note 73.	Photo unavailable (see below).

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB24	73	South (F9) / North (F10) Boundary – A dry ditch running adjacent to a hedgerow (Target Note 72). The ditch has become choked with species found in the understory of the hedgerow. This includes broad-leaved dock, cleavers, common nettle, perennial rye-grass, scentless mayweed, sow thistle, spear thistle and willowherb.	
F10	74	An improved grassland field dominated by perennial rye-grass, with occasional Yorkshire fog. Herbaceous species included broad-leaved dock, broad-leaved plantain, meadow buttercup and white clover.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB25	75	Western Boundary – a 2-2.25 m tall hedgerow containing ash, blackthorn, bramble, elder, hawthorn and oak. Understory species included broad-leaved dock, cleavers, common nettle, potato and wild carrot.	
FB26	76	A dead tree is located southern boundary hedge (TN77). The species was not identified. The tree had numerous features that are suitable for roosting bats.	Photo unavailable.
FB26	77	Southern Boundary – A 2-2.25 m tall hedge consisting of blackthorn, bramble, elder, hawthorn and holly. The understory contains bitter nightshade, common nettle, creeping thistle, hogweed, rosebay willowherb and wild carrot.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB27	78	Eastern (F10) / Western (F11) Boundary – A 2 m tall hedgerow containing ash, blackthorn, bramble, dog rose, elder, hawthorn and oak. The understory containing broad-leaved dock, common nettle, rosebay willowherb and spear thistle.	
FB27	79	Two clear mammal paths in the eastern boundary hedge (TN78). The shape and size of the paths indicates that it may be used by a variety of mammals, including badgers.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F11	80	A wheat. field that had been harvested recently.	
F11	81	A small patch of improved grassland, forming an unusually wide field boundary. It was dominated by perennial rye-grass, with lesser quantities of cock's-foot and false oat grass. Herbaceous species were similar to those found at TN74, with the addition of broad-leaved dock.	
FB23	82	A semi-mature oak located within the northern boundary hedge (TN71). No obvious features for roosting bats were observed from ground level. However, the tree is of an appropriate age and size to contain suitable features. Higher levels could not be adequately viewed due to dense foliage.	Photo unavailable, although can be seen above.

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F11	83	A patch of willow scrub associated with a pond. Within the scrub at a ground layer were dense ruderal herbs including bramble, broad-leaved dock, common burdock, common nettle, hogweed, ragwort, rosebay willowherb, sow thistle, spear thistle and teasel <i>Dipsacus fullonum</i>. Small passerines were observed utilising this habitat, possibly for nesting.	
F11	84	A small pond that was largely choked by ruderal herbs and grasses that likely colonised during drier periods. A main pool of water still persisted, with mallards flushed out upon approach to the pond. HSI Data - Geographic Location: A - Pond Area m²: 100 - Permanence: Sometimes dry - Water Quality: Moderate - Shade: 100 % - Water Fowl: Minor - Fish: Absent - Pond Count: 13 - Terrestrial Habitat: Moderate - Macrophytes: 40 % HSI Score: 0.58 (Below Average).	 

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
F11	85	A three hole badger sett located in the field margins and within the eastern boundary hedge (TN86). Three holes were easily observed within the field itself, with clear signs of activity. These included fresh latrines and fresh bedding in hole entrances. A large spoil heap is present adjacent to the hedgerow, indicative of further holes obscured from view. It is likely that this is a subsidiary sett.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
			 

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
			
FB28	86	North-East (F11) / South-West (F12) – A 2 m tall hedge comprised of blackthorn, bramble, elder, hawthorn and oak. Understory species include broad-leaved dock, cleavers, common nettle, hedge bindweed, nipplewort, spear thistle and wild carrot.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB29	87	Eastern Boundary – A 2 m tall hedge comprised of ash, blackthorn, bramble, dog rose, elder, field maple, hawthorn, hazel, and oak. The understory consisted of common nettle, false oat grass, hedge bindweed, hogweed, nipplewort, perennial rye-grass, rosebay willowherb and spear thistle.	
F12	88	A wheat field, that in the north-eastern corner contains a significant area of improved grassland. It was dominated by perennial rye grass with lesser quantities of false oat grass. Small stands of wheat have encroached into this area. Herbaceous species included cat's ear, dandelion, nipplewort, spear thistle and willowherb.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB30	89	Northern Boundary – A 2 m tall hedge consisting of ash, blackthorn, bramble, hawthorn, hazel and oak. Understory contained broad-leaved dock, common nettle, hogweed, nipplewort, rosebay willowherb, scentless mayweed and spear thistle.	
FB30	90	A reasonably large latrine located within the northern boundary hedgerow (TN89). The dung was relatively fresh.	

Field (F) / Boundary (FB) No.	Target Note	Description	Photograph
FB30	91	A large mammal path within the northern boundary hedge (TN89). The shape and size of the path indicates that it may be used by a variety of mammals, including badgers.	
-	92	Road verges consisting of poor semi-improved grassland which appears large unmanaged. Grass species included cock's-foot, false oat grass, perennial rye grass and Yorkshire fog. Herbaceous species largely consisted of species found in FB understories, with the addition of herbs such as bird's foot trefoil, common daisy, dandelion, red clover and white clover.	Photo unavailable.

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**Appendix 6: Initial Landscape and Visual Impact Assessment and covering note prepared by
Liz Lake Associates**

25th November 2020

Lanpro Services Ltd
Brettingham House
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2232 LVIA Baseline Cover Note 20 11 25.docx

For the attention of: Sarah Clinch

Proposed Solar Farm at Lullington

Liz Lake Associates were appointed by Island Green Power (IGP) in early 2019 and have since been involved in landscape and visual feasibility work relating to the proposed new solar farm, located between the villages of Lullington and Coton in the Elms, near Swadlincote.

The baseline landscape and visual report (which accompanies this cover note) was produced and submitted to the Council for review, ahead of a pre-application meeting held with Council Officers (and representative from the National Forest) on 25th June 2019 at South Derbyshire District Council's base, the Civic Offices, Swadlincote.

Since that meeting, further technical and feasibility work has been undertaken and the site area has evolved, being reduced predominantly to reduce the scale of the proposed development and to address landscape and visual issues in the south-west of the site. Accordingly, this cover note acknowledges that the baseline landscape and visual information gathered is for a larger area of search.

It is considered that the opportunity to provide sufficient and appropriate landscape and visual mitigation remains and that overall as a result of these changes it is likely that the potential effects associated with the landscape and visual resources will be reduced once the Landscape and Visual Impact Assessment (LVIA) is undertaken for the planning application.

Yours sincerely



Mark Flatman: Liz Lake Associates
Director and Chartered Landscape Architect

Landscape and Visual Baseline (part of LVIA, Sections 1-3)

Land north of Lullington, South Derbyshire

Island Green Power UK

Prepared by:	Mark Flatman
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APPENDICES:

APPENDIX A	FIGURES	1 – 7
APPENDIX B	PUBLISHED LANDSCAPE CHARACTER ASSESSMENTS (EXTRACTS)	

1**INTRODUCTION**

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- 1.1.1 This Landscape and Visual Impact Assessment (LVIA) has been prepared by Liz Lake Associates on behalf of Island Green Power UK (IGP) to address the landscape and visual issues relevant to the land north of Lullington, South Derbyshire (the Site). The Site is located approximately 0.5km north of Lullington village.
- 1.1.2 The principal objective of the assessment is to identify the landscape and visual issues of the potential development site and to identify the likely landscape and visual effects of the proposed development and to assess the significance of those effects.
- 1.1.3 The report considers the existing baseline conditions and seeks to identify the relevant landscape and visual issues applicable to the Site. A Landscape and Visual Impact Assessment (LVIA) has been undertaken to assess the likely effects upon the landscape resource, specific views and visual amenity.
- 1.1.4 Site visits have been undertaken in February and March 2019 to appraise the character and condition of the Site and the landscape context, and to identify key visual receptors. Once the design was developed sufficiently, the assessment was undertaken by an experienced Chartered Landscape Architect. The weather was clear and bright with good visibility.
- 1.1.5 All photographs were taken with a digital camera, a Canon EOS 1100D with a 30mm fixed lens. The 30mm lens is the digital equivalent to a standard 50mm focal length lens with a single lens reflex camera.
- 1.1.6 Liz Lake Associates is a multi-disciplinary environmental and design consultancy with over 30 years' experience of master planning, landscape, ecology, urban design, heritage and environmental impact assessment. The company is a registered practice of the Landscape Institute.
-

2

METHODOLOGY

-
- 2.1.1 An LVIA of the Site and the development proposals has been prepared, encompassing the 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA) 3rd edition (published by the Landscape Institute and the Institute of Environmental Management and Assessment 2013), and 'Landscape Character Assessment: Guidance for England and Scotland' (published by the Countryside Agency and Scottish National Heritage 2002). In summary, the approach combines information and desktop reviews with on-site surveys and appraisal.
- 2.1.2 The Site based assessment involves the recording of both objective description and subjective impressions of the landscape, as well as details of the existing landscape condition. It includes an assessment of the extent and nature of views to and from the Site and the type of receptors that experience these views.
- 2.1.3 The following relevant studies and documents have been considered as part of the desk-based review and subsequent assessment:
- Natural England – National Character Areas 2014
 - Derbyshire County Council – The Landscape Character of Derbyshire (March 2014)
 - Staffordshire County Council – Planning for Landscape Change and Landscape Character Assessment (2001)
 - National Forest Strategy 2014-2029
- 2.1.4 The landscape and visual assessment of the proposed development has been based upon the proposals illustrated on drawings prepared by IGP and Liz Lake Associates.
-

3

EXISTING SITUATION

3.1

Context

3.1.1

The Site is located to the north of Lullington village, a small rural village with a parish church (All Saint's) to the southern edge of the district of South Derbyshire and approximately 7 miles south of Burton upon Trent. Its western edge sits adjacent to the County border with Staffordshire (and Lichfield District).

3.1.2

The Site comprises a series of agricultural field parcels, forming an elongated shape running east to west following the generally regular field pattern and well-maintained hedgerows that have few trees, extending to an area of approximately 230 acres. Two rural roads and a public footpath cross north-south across the Site, as well as two lines of overhead pylons.

3.1.3

The Site forms part of the gently undulating Mease/ Sence Lowlands, primarily village estate farmlands lying at between approximately 85 and 80m AOD. In a wider context, the village estate farmlands landform falls generally west and south towards the lowland village farmlands as well as a narrow river valley (riverside meadows character type) associated with the River Mease to the south. The landscape has a backcloth of woodland, copses and woodland belts that serve to provide containment in the landscape, particularly to the north.

3.1.4

The Site falls within The National Forest, where a Strategy (2014-2029) exists. The National Forest website page confirms that:

"The National Forest is right in the heart of the country, embracing 200 square miles of the Midlands. It spans across parts of Derbyshire, Leicestershire and Staffordshire and aims to link the two ancient Forests of Charnwood and Needwood. With a history of coal mining and heavy industry, the landscape is now that of rolling farmland, ancient forests and new planted woodlands. Its main towns and villages include Burton upon Trent

(famous for its brewing), Coalville and Swadlincote (formerly associated with the clay and coal mining industries) and the historic town of Ashby-de-la-Zouch.”¹

3.2 Published Landscape Character Assessments

3.2.1 A brief summary of the published landscape character assessments in the context of the Site is detailed below.

National Character Area:

3.2.2 The Site lies in National Character Area 72 (NCA), Mease/Sence Lowlands, as defined by Natural England. The NCA extends across Derbyshire in the north, Warwickshire in the south, Leicestershire in the east and Staffordshire in the west.

3.2.3 Key characteristics of the area relevant to this site include:

- *“This is a gently rolling landscape with rounded clay ridges and shallow valleys, with a more undulating landform in the north-west. This is a well-ordered agricultural landscape of open views, with a relatively tranquil character.*
- *Triassic Mercia Mudstones underlie this area and give rise to productive clay soils; outcrops of sandstone extend across the area southwards and westwards from the edge of the adjacent coalfield.*
- *Woodland cover is generally limited to scattered hedgerow trees, coverts and spinneys, and occasional groups of trees along rivers and streams. Larger-scale planting associated with The National Forest in the north of the NCA has significantly increased woodland cover and strengthened the wooded character of the landscape.*
- *The majority of the farmland has a strongly rectilinear pattern of low hedgerows and scattered hedgerow trees. On steeper ground and heavier clays, hedgerows are more substantial and hedgerow trees more frequent.*

¹ The National Forest (2019), The National Forest Company. Available at: <https://www.nationalforest.org/about/what-is-the-national-forest>

- *Extensive, open areas of arable cultivation predominate. On steeper ground and heavier clays the land is less intensively farmed, and arable and pasture are mixed. Beef and dairy farming are also common.*
- *The main river courses of the Mease and Sence are generally very open; they are nationally important for nature conservation and support internationally rare species, including the white-clawed crayfish, spined loach and bullhead fish. Willow and alder riparian vegetation is a feature along minor streams.*
- *Important habitats include neutral grasslands, wet meadows, parkland, wet woodlands, rivers and streams, all of which support characteristic and rare species.*
- *The Ashby Canal and Coventry Canal are landscape features that are important for nature conservation and recreation. They act as reminders of our cultural heritage.*
- *Landscaped parklands and fine country house estates, spired churches and historic farmsteads, areas of remnant ridge and furrow and deserted settlements contribute to the time depth and sense of history of the area.*
- *With wide verges and straight enclosure roads. Red brick buildings and spired churches are often prominent landscape features. Isolated large 19th-century red brick farmsteads are also notable.*
- *Larger modern urban development is present on the fringes of the NCA in Nuneaton, Hinckley and Burton-Upon-Trent. Straight motorways and main roads cut through the area north-south and east-west.”²*

County Character Assessment

3.2.4

The Landscape Character of Derbyshire was first published by Derbyshire County Council in 2003 and last updated in 2014. The Staffordshire Planning for Landscape Change and Character Assessment was published by Staffordshire County Council and adopted in 2001.

² NCA 72. Natural England. P6.

- 3.2.5 The Site lies within Derbyshire's Landscape Character Type: Village Estate Farmlands³ and directly adjacent to Staffordshire's Landscape Character Type: Lowland Village Farmlands to the west.⁴ Derbyshire's Landscape Character Type: Riverside Meadows covers a narrow strip of land associated with the River Mease to the south of the Site.
- 3.2.6 Key characteristics of Derbyshire's Landscape Type: Village Estate Farmlands relevant to the Site include:
- *"Broad scale, gently rolling lowland landscape.*
 - *Seasonally waterlogged fine loamy soils over Permo-Triassic Mudstone.*
 - *Mixed farming with intensive cropping and improved permanent pasture.*
 - *Broadleaf plantations and game coverts.*
 - *Tree lined, pastoral stream corridors.*
 - *Medium to large regular and sub-regular fields with mainly hawthorn hedgerows.*
 - *Winding country lanes with wide grass verges.*
 - *Small nucleated hilltop villages often with prominent church spire."*⁵
- 3.2.7 Planting and Management Guidelines for Derbyshire's Landscape Type: Village Estate Farmlands relevant to the Site include:
- *"Promote linked extensions to ancient woodland by natural regeneration and planting.*
 - *Re-establish and enhance physical links between existing isolated woodland and hedgerows.*

³ The Landscape Character of Derbyshire; Figure One: The Landscape Character of Derbyshire Map (p.265), Derbyshire County Council (December 2013)

⁴ Planning for Landscape Change: Supplementary Planning Guidance, Appendix 1 Maps and Plans, Staffordshire County Council (May 2001)

⁵ The Landscape Character of Derbyshire; Part One: Landscape Character Descriptions, Mease/Sence Lowlands (p.217-223), Derbyshire County Council (December 2013)

- *Enhance the visual and ecological continuity of river corridors by management, natural regeneration and planting of riparian trees.*
- *Conserve and renew ornamental plantations and individual parkland trees.*
- *Refer to the National Forest Strategy and Guidance.”⁵*

3.2.8 Characteristic landscape features of Staffordshire’s Landscape Type: Lowland Village Farmlands relevant to the Site include:

- *“Waterside tree species along river and ditches; canal; flat landform; hedgerows and hedgerow trees; small ancient lanes; intensive arable and vegetable farming; small woodlands.”⁶*

3.2.9 Specific Guidelines for Tree and Woodland Planting in Staffordshire’s Landscape Type: Lowland Village Farmlands relevant to the Site include:

- *“There are various opportunities for tree and woodland planting, but generally this should be at medium to large scale to reflect the open landscape character. Large commercial plantations, estate forestry and farm woodlands of field size would be particularly valuable. Hedgerow and field corner sized planting are only appropriate where existing vegetation locally reduces the scale of the landscape.*
- *It is important to the character of these farmlands to retain views across the landscape. This can best be achieved by avoiding solid wooded edges adjacent to roads and public rights of way and being careful over producing extensive wooded skylines.*
- *These landscapes have, as a whole, an intact field pattern that, although tending to deteriorate in places, remains quite strong. Fitting new woodlands into these existing field boundaries, as discrete blocks, will retain character.*
- *In these flat landscapes, the woodland edges become the most important feature responsible for the character of the woodland and hence the landscape as a whole. A*

⁶ Planning for Landscape Change: Supplementary Planning Guidance, Landscape Descriptions, Lowland Village Farmlands (p.157-159), Staffordshire County Council (May 2001)

broadleaved character to the margins should, therefore, be aimed for, although conifers are acceptable within this predominantly broadleaved woodland planting.”⁶

- 3.2.10 The documents outlined above, together with the Site appraisal, have been utilised to establish the baseline conditions for the Site and its surroundings in order to complete this assessment.

3.3 Statutory Designations

- 3.3.1 **Sites of Special Scientific Interest (SSSI):** The Site is not covered by any SSSIs. The closest SSSI to the Site is River Mease, which lies approximately 1.9km south of the Site. (Refer to **Figure 2 Statutory Designations**).
- 3.3.2 **Listed Buildings:** There are no Listed Buildings on the Site. In closest proximity to the Site is Lady Leys Farmhouse (List Entry Number 1311228), Grade II listed, approximately 255m south of the Site. Raddle Farmhouse (List Entry Number 1188340), Grade II listed, lies approximately 550m west of the Site. Woodfields Farmhouse (List Entry Number 1334575), Grade II listed, lies approximately 635m east of the Site. Church of All Saints (List Entry Number 1159003), Grade II* listed, lies approximately 610m south of the Site. (**Refer to Figure 2: Heritage Designations and Public Rights of Way**).
- 3.3.3 **Registered Parks and Gardens:** There are no Registered Parks and Gardens on the Site, or within 2km of the Site.
- 3.3.4 **Conservation Area:** The Site does not lie within a Conservation Area. Lullington Conservation Area lies approximately 360m south of the Site. (**Refer to Figure 2: Heritage Designations and Public Rights of Way**).
- 3.3.5 **Public Rights of Way (PRoW):** PRoW (Footpath) Lullington FP1 runs north-south within the Site area meeting PRoW (Footpath) Lullington FP2 in the south and PRoW (Footpath) Coton in the Elms FP7 to the north. PRoW (Recreational Route) The National Forest Way runs approximately 1.5km north east of the Site. (**Refer to Figure 2: Heritage Designations and Public Rights of Way**).
- 3.3.6 **Sustrans:** There are no Sustrans routes on or within a 2km radius of the Site.

- 3.3.7 **Environmental Designations:** The Site is not covered by any non-statutory environmental designations. The closest designation is a narrow strip of Priority Habitat Inventory- Deciduous Woodland that runs directly adjacent to the western Site boundary. There is an area of ancient woodland within 2km of the Site. This woodland, known as Grange Wood and Potter's Wood lies approximately 1.5km east of the Site and covers approximately 50Ha. **(Refer to Figure 3: Environmental Designations).**
-

3.4 **Local Landscape Policy Background**

- 3.4.1 South Derbyshire District's Local Plan includes a number of policies relevant to the Site.

- 3.4.2 Policy SD6: Sustainable Energy and Power Generation states:

The council will support renewable and other energy developments and ancillary buildings or infrastructure subject to the following considerations:

- *"That the environmental effects of the proposal have been appropriately considered and schemes will not give rise to unacceptable impacts on landscape or townscape character, ecology, the historic environmental or cultural heritage assets.*
- *That the proposals will not give rise to unacceptable impacts on local amenity, or give rise to safety concerns, as a result of noise, shadow flicker, electromagnetic interference, emissions to the air or ground, odour or traffic generation and congestion".⁷*

- 3.4.3 Policy BNE4: Landscape Character and Local Distinctiveness states:

⁷ South Derbyshire Local Plan Part 1, Chapter 7- Sustainable Development; Policy SD6 (p.117) Available at: [file:///C:/Users/amytaylor/Downloads/Local%20Plan%20Part%201_Chapters%206%20-%20Appendices%20\(2\).pdf](file:///C:/Users/amytaylor/Downloads/Local%20Plan%20Part%201_Chapters%206%20-%20Appendices%20(2).pdf), last accessed 07/03/19

- *“The character, local distinctiveness, and quality of South Derbyshire’s landscape and soilscape will be protected and enhanced through the careful design and sensitive implementations of new development.*
- *Developers will be expected to retain key valued landscape components such as mature trees, established hedgerows and topographical features within development sites unless it can be demonstrated that the loss of features will not give rise to unacceptable effects on local landscape character. Development that will have an unacceptable impact on landscape character (including historic character), visual amenity and sensitivity and cannot be satisfactorily mitigated will not be permitted.*
- *In bringing forward proposals developers will be expected to demonstrate that close regard has been paid to the landscape types and landscape character areas identified in The Landscape Character of Derbyshire. Proposals should have regard to the woodland and tree planting, landscape management and habitat guidance set out in this document and demonstrate that the mitigation proposals are appropriate to the character of the landscape.*
- *Within The National Forest Area developers will be expected to demonstrate that close regard has been paid to the landscape types and landscape character areas identified in the National Forest Landscape Character Assessment both within the design of the scheme and in the incorporation of woodland planting and landscaping.”⁸*

3.5

Landscape Resource and Contribution to Local Landscape Character

3.5.1

The Site forms part of the coherent and undulating village estate farmland landscape extending to approximately 230 acres, which has a backdrop of woodland belts and copses set within a gently undulating landform. The medium sized arable fields forming

⁸ South Derbyshire Local Plan Part 1, Chapter 8 – Built and Natural Environment; Policy BNE4 (p.132) Available at: [file:///C:/Users/amytaylor/Downloads/Local%20Plan%20Part%201_Chapters%206%20-%20Appendices%20\(2\).pdf](file:///C:/Users/amytaylor/Downloads/Local%20Plan%20Part%201_Chapters%206%20-%20Appendices%20(2).pdf) (last accessed 07/03/19)

the Site are divided into three segments by two roads crossing the site from north to south. In the western part of the Site two rows of pylons also cross the land.

3.5.2 Fields are bounded by well-maintained (but often low cut) hedgerows with occasional field trees and small copses with occasional ponds and individual trees. Meanwhile, a belt of woodland wraps around the western edge of the site and woodland cover extends around part of the northern boundary. To the north of the Site the landscape is well wooded, which forms a backcloth in the wider landscape.

3.5.3 The Site is assessed as making a **positive contribution** to the local landscape character. This is where the existing character of the Site contains many attributes that are strongly representative of the local landscape character and a few incongruous elements that only detract from the local landscape character to a limited degree.

3.6 Visual Resource

3.6.1 The visual amenity experienced by people (visual receptors) in the locality of the Site differs according to many factors. Visual receptors of higher sensitivity with limited susceptibility to change include residents at home (private viewpoints), people engaged in outdoor recreation (including use of PROWs), visitors to heritage assets and other attractions, travellers on recognised scenic routes (public viewpoints) and people at their work place where views are an important contributor to the setting and quality of their working life.

3.6.2 Travellers on road, rail or other transport routes and people engaged in outdoor sport or recreation are considered less sensitive to changes in visual amenity.

3.6.3 Consideration of the study area, via desk research and field survey, has identified locations from which the Site (proposed development) will potentially be visible. However, despite the elevated location of the Site and with the extensive woodland cover around the Site, views are limited and localised to the immediate context, North Trade road and residential properties.

3.6.4 A Zone of Theoretical Visibility (ZTV) study will also be developed in due course to guide and inform further site work for the visual assessment work. Current field work has established an area of search of approximately 2km, based on the following factors:

- Extensive belts of woodland to the north of the Site limit visibility to a series of relatively short distance views in the local area
- To the east and south east of the Site, the landform rises to a height of approximately 90m and 100m AOD, before falling back towards the lowland village farmlands, and with the combination of wooded blocks, copses and field hedgerows this limits views to with approximately 2km of the Site boundary.
- To the west the site is bounded by woodland which serves to contain the site in wider views.
- To the south and south west the landform falls across the narrow Mease River Valley into the lowland village farmland and it is considered that the undulating lowland with wooded belts and hedgerow boundaries serve to quickly limit views over distance.

3.6.5

The visual work will be developed further in due course with the assistance of the ZTV to help inform the visual envelope and specific, representative and illustrative views will be selected for inclusion in the report to illustrate the visual effects of the proposed development:

Private viewpoints

1. Residential properties including farmhouses.
2. Properties at the edge of Lullington village.
3. All Saint's Church, Lullington.

Public Rights of Way

4. Route passing through the site.
5. Paths in the surrounding landscape.

Transport routes

6. Local roads and lanes passing through the area.

Summary

3.6.6

The existing visual amenity of the Site within the context of Landscape Character Area has been assessed to offer **good visual amenity**, where the quality of the existing views is such that there are a few incongruous elements, however (these primarily influence tranquillity and) overall these do not detract from the visual amenity of the area and local people are still likely to appreciate the views (despite the proximity to road and rail infrastructure).

End of Baseline Section

SOLAR FARM, LULLINGTON, SOUTH DERBYSHIRE

LANDSCAPE AND VISUAL BASELINE (PART OF LVIA SECTIONS 1-3)

FIGURES 1 - 6

March 2019

FIGURE 1: SITE LOCATION

FIGURE 2: STATUTORY DESIGNATIONS

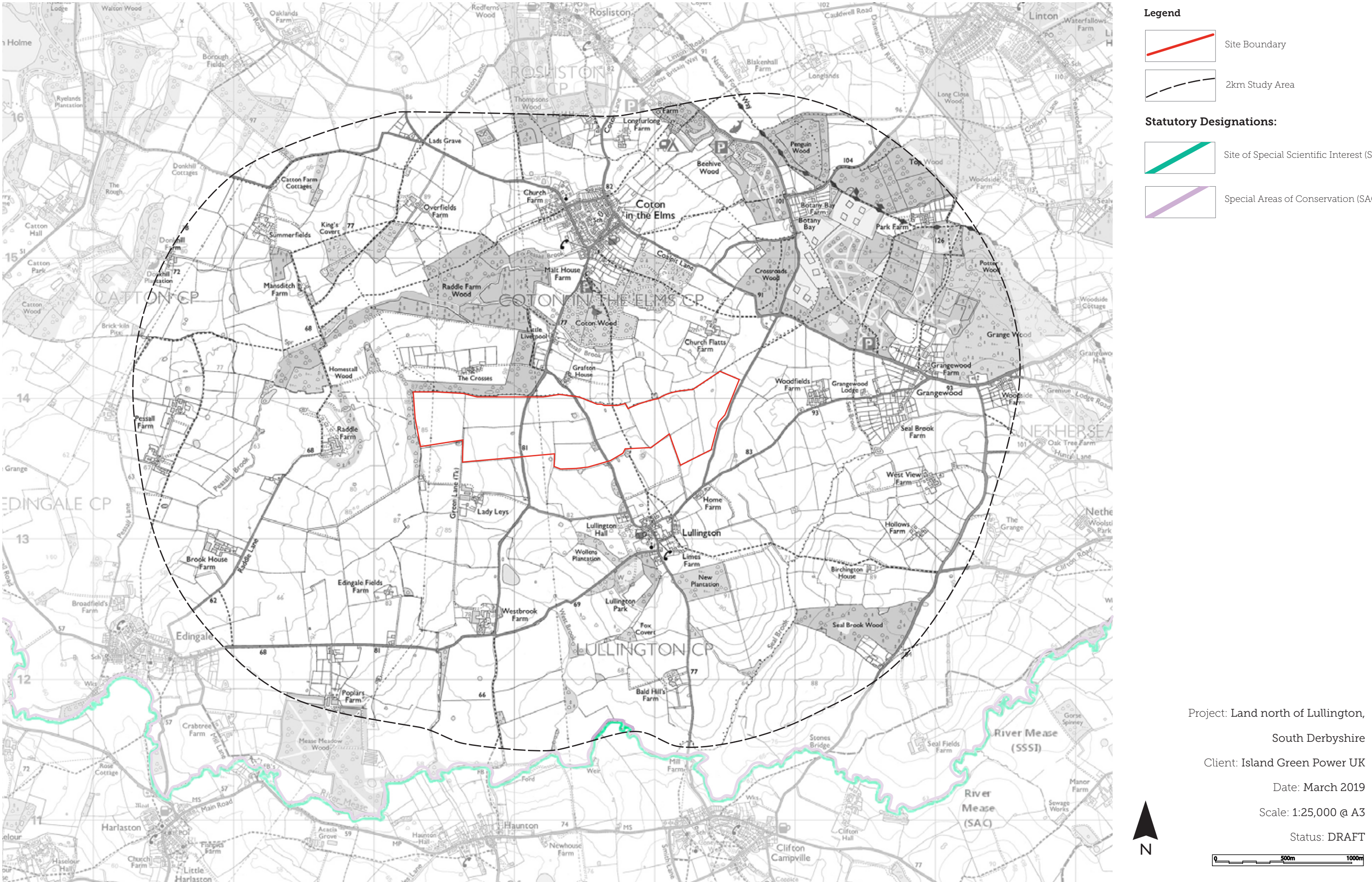
FIGURE 3: LANDSCAPE HERITAGE DESIGNATIONS WITH PUBLIC RIGHTS OF WAY

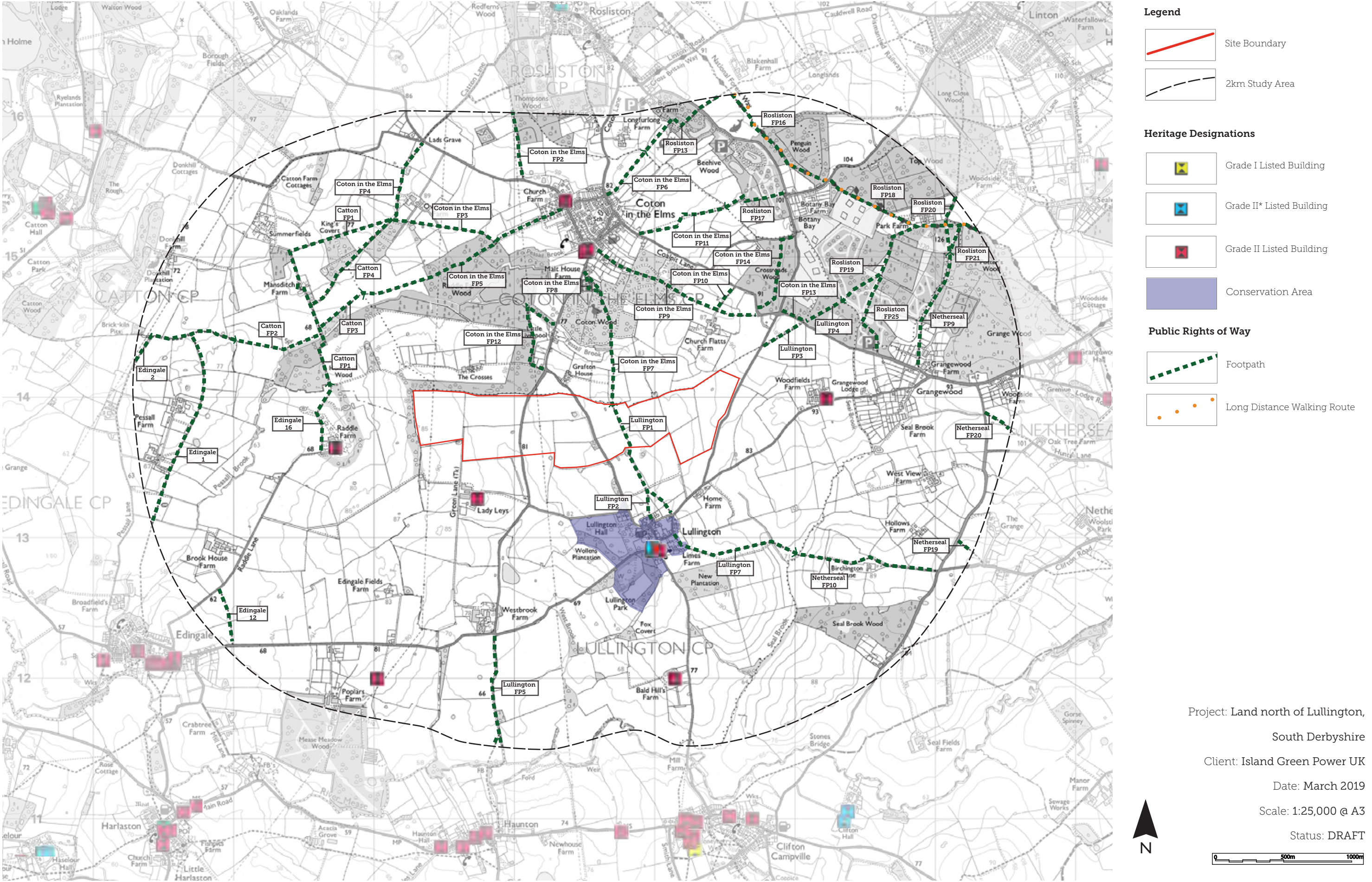
FIGURE 4: ENVIRONMENTAL DESIGNATIONS

FIGURE 5: LANDSCAPE CHARACTER ASSESSMENT

FIGURE 6: HISTORIC MAPPING









Legend

Site Boundary

2km Study Area

Environmental Designations:

Ancient and Semi-Natural Woodland

Ancient Replanted Woodland

Priority Habitat Inventory - Deciduous Woodland

Priority Habitat Inventory - Traditional Orchards

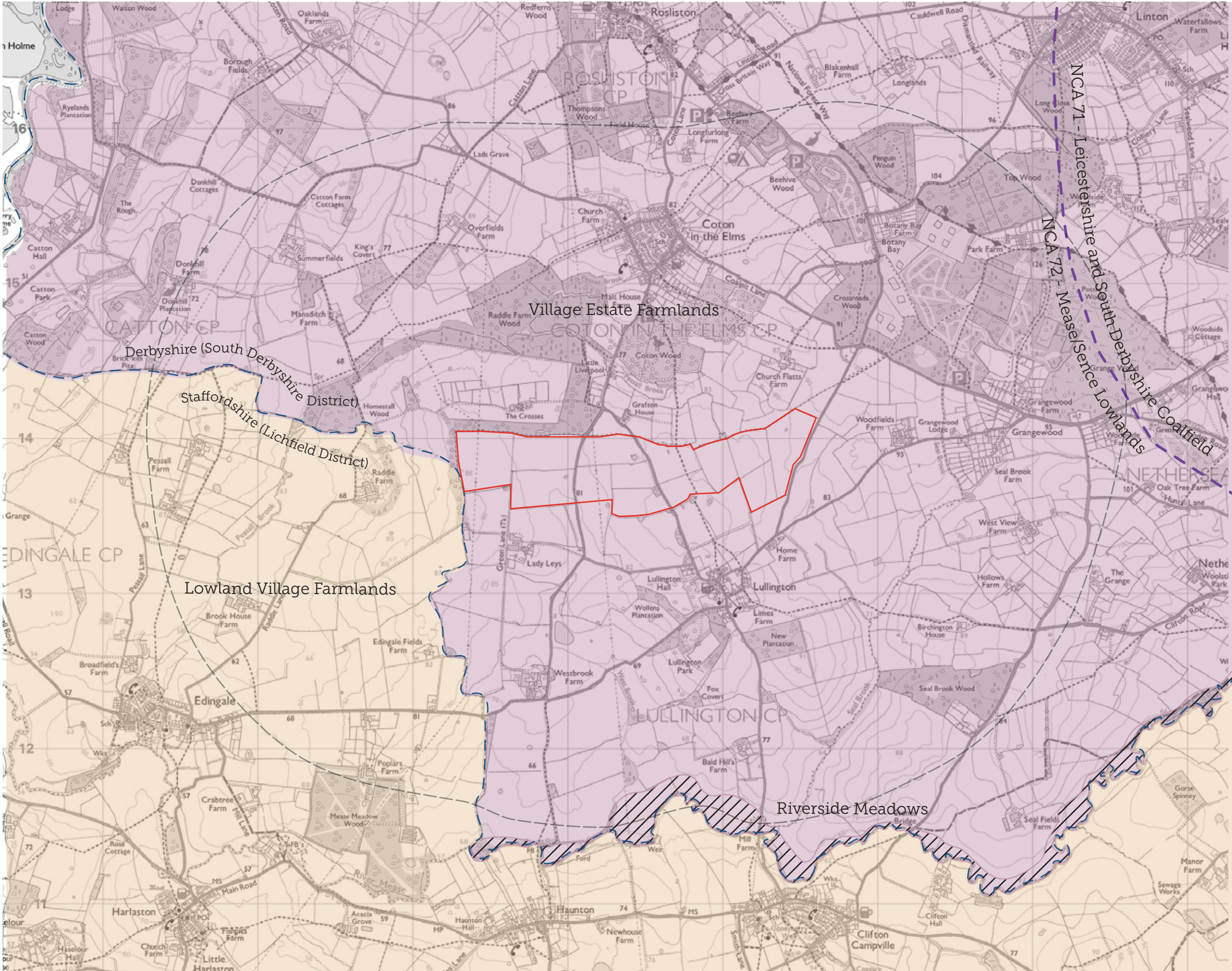
Woodpasture and Parkland BAP Priority Habitat (England)

Priority Habitat Inventory - Lowland Meadows (England)

Forestry Commission Legal Boundary (England)

Project: Land north of Lullington,
South Derbyshire
Client: Island Green Power UK
Date: March 2019
Scale: 1:25,000 @ A3
Status: DRAFT





Legend

Site Boundary

2km Study Area

County Boundary line

National Character Area Profiles

Border between area profiles

Derbyshire County Council: The Landscape Character of Derbyshire (2014)

Mease/Sence Lowlands-
Landscape Type: Village Estate Farmlands

Mease/Sence Lowlands-
Landscape Type: Riverside Meadows

Staffordshire County Council: Planning for Landscape Change and Landscape Character Assessment (2001)

Landscape Character Type-
Lowland Village Farmlands

Project: Land north of Lullington,
South Derbyshire

Client: Island Green Power UK

Date: March 2019

Scale: 1:25,000 @ A3

Status: DRAFT

N

0

500m

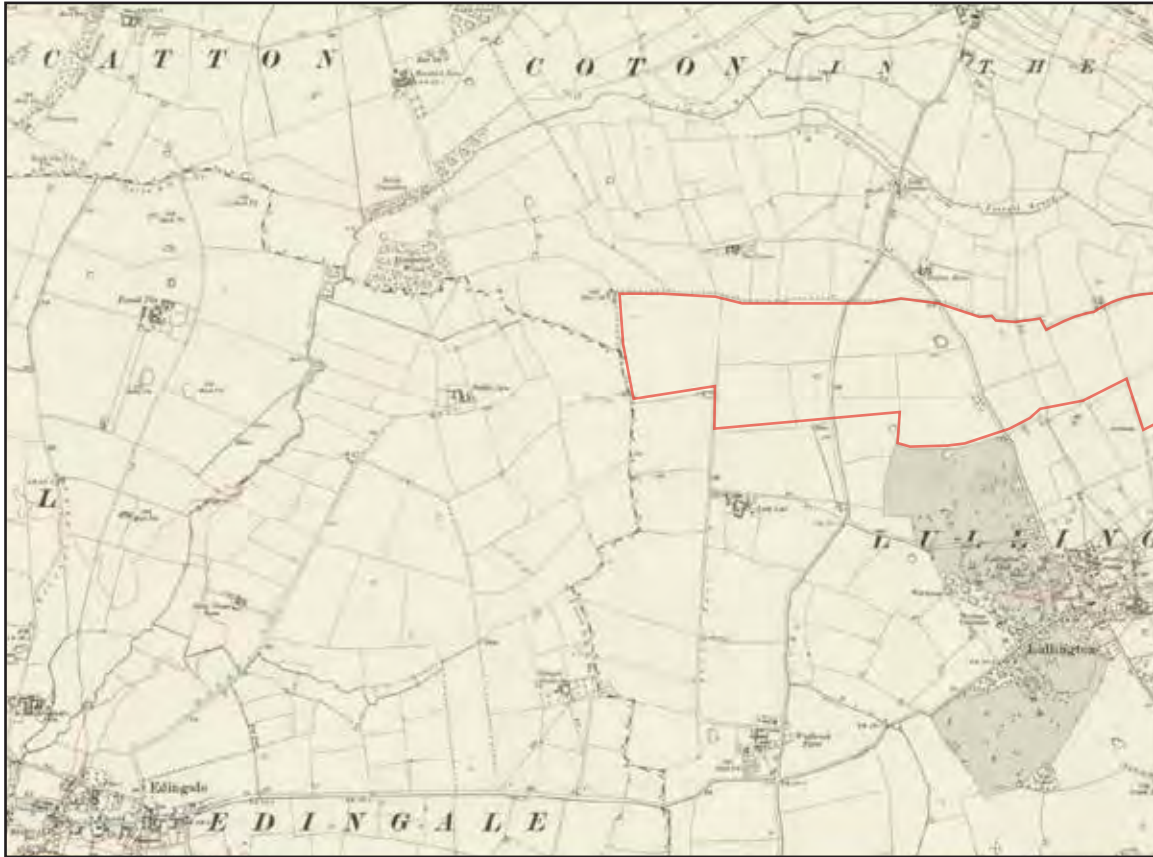
1000m



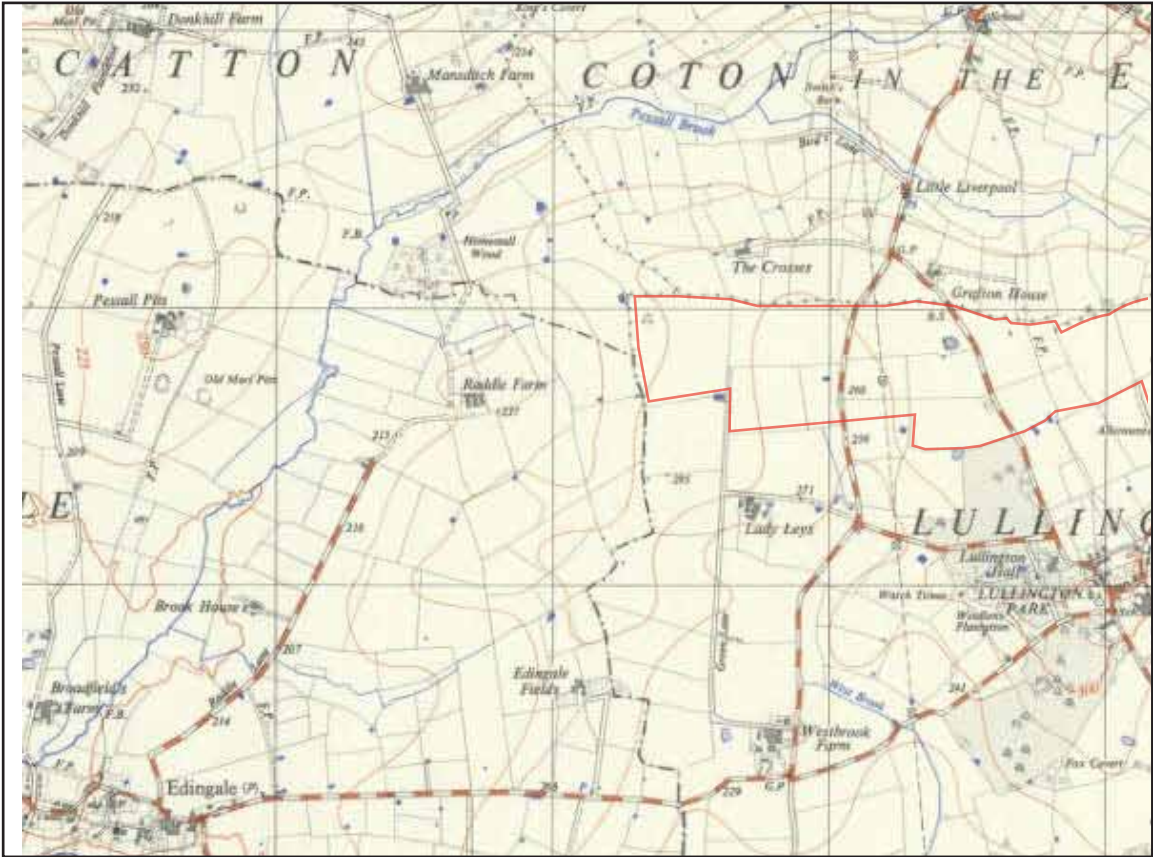
1884



1902



1925



1952

Legend

Approximate overlay of Site Boundary

Project: Land north of Lullington,
South Derbyshire
Client: Island Green Power UK
Date: March 2019
Scale: NTS @ A3
Status: DRAFT



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SOLAR FARM, LULLINGTON, SOUTH DERBYSHIRE

LANDSCAPE AND VISUAL BASELINE (PART OF LVIA SECTIONS 1-3)

FIGURES 7 - 8

March 2019

FIGURE 7: PHOTO LOCATION PLAN

FIGURE 8: PHOTOGRAPHIC SHEETS (1 - 10)

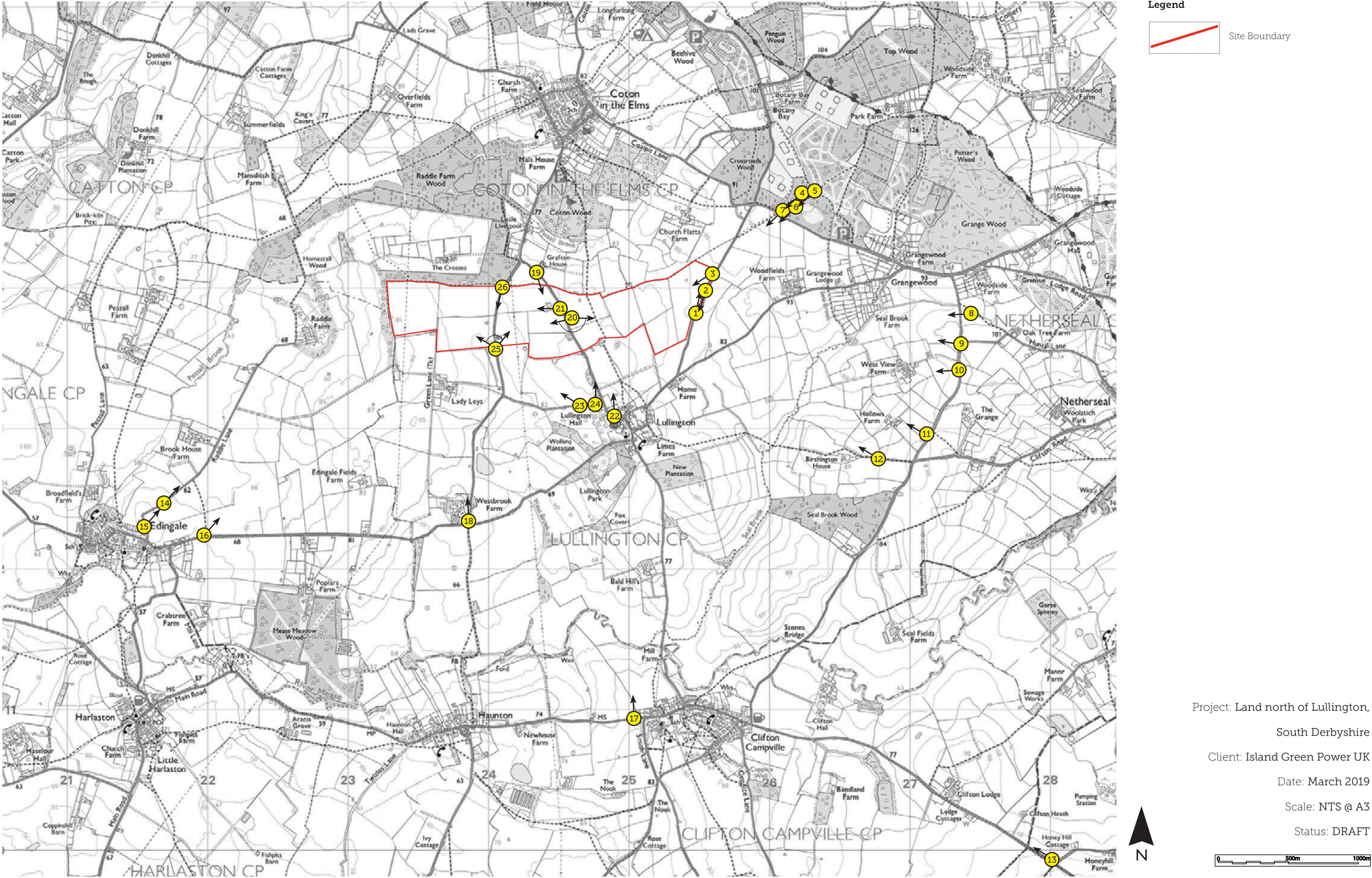




Photo Location 1: View looking north towards the site from the Unnamed Road that runs adjacent to the Site's eastern boundary.



Photo Location 2: View looking south from the Unnamed Road that runs adjacent to the Site's eastern boundary.



Photo Location 3: View looking southwest towards the Site from the Unnamed Road that runs adjacent to the Site's eastern boundary.



Photo Location 4: View looking southwest towards the Site from PRoW footpath Lullington FP4.



Photo Location 5a: View looking southwest towards the Site from the track by PRoW footpath Lullington FP4.



Photo Location 5b: View looking southwest towards the Site from the track by PRoW footpath Lullington FP4.



Photo Location 6: View looking southwest towards the Site from Unnamed Road.



Photo Location 7: View looking southwest towards the Site from PRow footpath Lullington FP3.

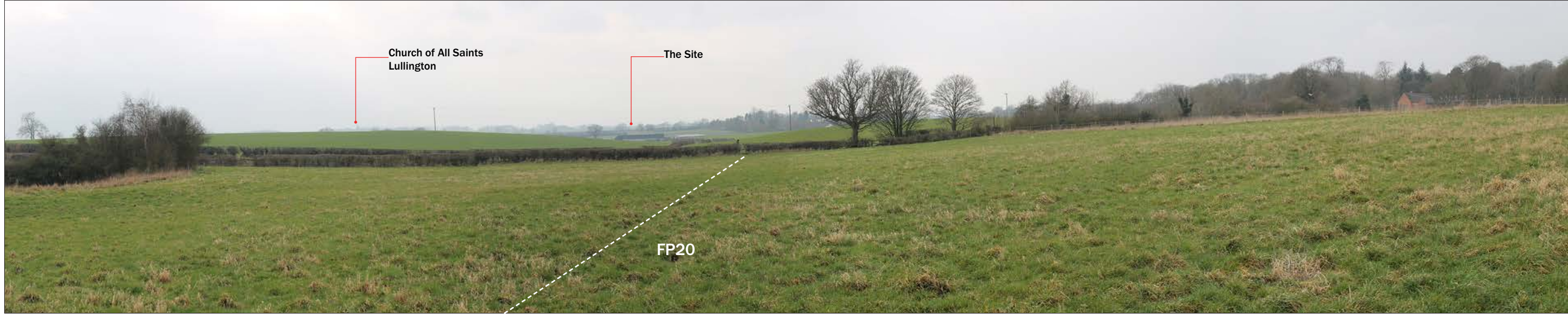


Photo Location 8: View looking west towards the Site from PRow footpath Neatherseal FP20.



Photo Location 9: View looking west towards the Site from Unnamed Road.



Photo Location 10: View looking west towards the Site from a track of West View Farm.



Photo Location 11: View looking northwest towards the Site.



Photo Location 12: View looking northwest towards the Site from Unnamed road.



Photo Location 13: View looking northwest towards the Site from Clifton Road.



Photo Location 14: View looking northeast towards the Site from Raddle Lane.



Photo Location 15: View looking northeast towards the Site from Raddle Lane.



Photo Location 16: View looking northeast towards the Site from Lullington Road.



Photo Location 17: View looking north towards the Site from Main Road.



Photo Location 18: View looking north towards the Site from Unnamed Road.



Photo Location 19: View looking south towards the Site from Lullington Road.



Photo Location 20a: View looking south along Lullington Road that crosses the Site.



Photo Location 20b: View looking south along Lullington Road that crosses the Site.



Photo Location 21: View looking west towards the Site from Lullington Road.



Photo Location 22: View looking north towards the Site from the edge of Lullington village.



Photo Location 23: View looking northwest towards the Site from Unnamed Road.



Photo Location 24: View looking north towards the site from Lullington Rd.



Photo Location 25a: View looking north towards the Site from Unnamed Road that crosses the Site.



Photo Location 25b: View looking north towards the Site that crosses the Site.



Photo Location 26a: View looking south towards the Site from Unnamed Road that crosses the Site.



Photo Location 26b: View looking south towards the Site from Unnamed Road that crosses the Site.

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- Hospitality
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- Community
- Ecology
- Arboriculture
- 3D / Graphic Design



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Appendix 7: Initial Heritage Report and covering note prepared by Lanpro



Brettingham House, 98 Pottergate, Norwich NR2 1EQ
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Date: 25th November 2020

Our ref: 1357H

Sarah Clinch – Associate Planner
Lanpro

Sent via email to: sarahc@lanproservices.co.uk

Dear Sarah,

Heritage update for EIA Screening Opinion Request for a new solar farm at land north of Lullington, Swadlincote, on behalf of Lullington Solar Farm Ltd (the Applicant).

This letter provides an update on the heritage considerations relevant to the request for an EIA Screening Opinion for a new solar farm at land north of Lullington, Swadlincote as shown on the proposed site location plan contained at Appendix 1 of the Request for Screening Opinion.

The Heritage Statement included within this submission was prepared to support initial pre-application discussions with South Derbyshire District Council in February 2019. Since then, the application site has been reduced in size in response to technical reports and feedback. The change constitutes removal of the section of the site lying to the west of the road which runs south from Coton in the Elms, through Little Liverpool, and continues south to the River Mease. This represents the removal of approximately one third of the site area discussed at the initial pre-application stage. The Heritage Statement will be updated to reflect these changes in due course.

The revised site area is positive in terms of the potential for the proposals to impact heritage assets. Notably, the proposed site is significantly more separated from the two Grade II listed farmhouses to the west of the site: Lady Leys Farmhouse and Raddle Farmhouse.

The revised area omits the most visually prominent section of the pre-application site, which reduces the possibility for impacts on heritage assets in the surrounding area. This is particularly applicable in views to the south-west of the site along the Trent Valley.

The removal of the western section of the site leaves sufficient potential for the remaining site area to be screened with landscape planting.

As such the same conclusion from my report can be drawn that no significant environmental effects will not arise in respect of archaeology and heritage.

Yours sincerely,

Paul Gajos
Director (Archaeology & Heritage) | BA(Hons) MA MCifA

Island Green Power UK Ltd

LULLINGTON SOLAR FARM

Heritage Statement

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 1508
OUR REF. NO. 1508 HS

DATE: FEBRUARY 2019

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EXECUTIVE SUMMARY

Lanpro has been commissioned by Island Green Power UK Ltd to produce a Heritage Statement to support proposals for a solar farm on land to the north of Lullington, Derbyshire (National Grid Reference NGR SK2413 9671 and SK2413 4758; Figure 1). The proposed scheme will comprise the construction of a ground mounted solar farm with associated infrastructure. This Heritage Statement has been produced to inform and support the required planning application documents. The proposed development site (study site) is located to the north of Lullington village conservation area and its associated listed buildings. For full details of the proposed scheme the supporting planning application documents should be viewed.

This heritage statement considers the impact on 'above ground' heritage assets (buildings, structures and areas of heritage interest) within the study site, as well as the setting of designated assets. This HS does not consider buried heritage assets (archaeological remains) and the potential for unknown buried heritage assets within the study site. Heritage assets potentially sensitive to the proposals comprise:

- The Church of All Saints, a Grade II* Listed Building
- Churchyard walls and gates to All Saints Church, a Grade II Listed Building
- Village Hall, Lullington, a Grade II Listed Building
- Lady Leys Farmhouse, a Grade II Listed Building
- Woodfields Farmhouse, a Grade II Listed Building
- Raddle Farmhouse, a Grade II Listed Building
- Lullington Conservation Area
- Grafton House, an unlisted building of local heritage interest

It has been concluded that the proposed scheme will result no meaningful harm to the significance of any designated heritage assets. Only two designated heritage assets will experience a perceptible change to their wider contextual setting, these are Lady Leys Farmhouse and Lullington village conservation area. These will see a partial change to their landscape context which will result in slight to negligible harm to their significance through changes within their wider setting. One non-designated building, Grafton House, is likely to experience a more recognisable level of change to its wider landscape setting, but not its immediate setting. Proposed mitigation will reduce this effect resulting in no appreciable harm to its significance.

As a result, it is concluded that the proposed development will result in minimal to no harm to the significance of both non-designated as well as designated heritage assets. It is therefore concluded that the proposal is in accordance with relevant national and local heritage policy and legislation.

1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. Lanpro has been commissioned by Island Green Power UK Ltd to produce a Heritage Statement (hereafter HS) in support of proposals for a solar farm on land to the north of Lullington, Derbyshire (National Grid Reference NGR SK2413 9671 and SK2413 4758; Figure 1).
- 1.1.2. The proposed scheme will comprise the development of a ground mounted solar farm including associated infrastructure: inverters, transformer, DNO cabinet, control room and CCTV cameras.'

1.2 SCOPE

- 1.2.1. This HS provides a baseline assessment of known designated above ground heritage assets (buildings, structures and areas of heritage interest) within or immediately adjacent to the area of proposed development (hereafter the study site). A 1km search area beyond the boundary of the study site has been used to inform the production of this HS. The size of the search area has been determined based on the prevailing site circumstances, the nature of the proposed development and professional judgment, as suitable for determining the potential impact of the proposed development on the heritage resource within the study site and surrounding area. It is therefore consistent with paragraph 189 of the NPPF, in providing a level of detail proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.
- 1.2.2. Professional expert opinion has been used to assess heritage significance, based on historic, archaeological, architectural or artistic interest. The HS provides a heritage impact assessment of the proposed development. Where relevant, it also considers the contribution of setting to asset significance and the impact of the proposals upon this, for designated assets within and beyond the study site. Buried heritage assets (archaeological remains) are not addressed.

1.3 AIMS AND OBJECTIVES

- 1.3.1. The aim of this heritage statement is to assess the impact of the proposed development and to provide a suitable strategy to mitigate any adverse effects, if required, as part of a future planning application. The aim is achieved through six objectives:
- identify the presence of any known or potential heritage assets that may be affected by the proposals;
 - describe the significance of such assets, in accordance with the National Planning Policy Framework (NPPF), taking into account factors which may have compromised asset survival;
 - determine the contribution to which setting makes to the significance of any sensitive (i.e. designated) heritage assets;
 - assess the likely impacts upon the significance of the assets arising from the proposals,

- assess the impact of the proposed development on how designated heritage assets are understood and experienced through changes to their setting; and
- provide recommendations for further investigation and/or mitigation where required, aimed at reducing or removing any adverse effects.

2 PLANNING FRAMEWORK

2.1 STATUTORY PROTECTION

- 2.1.1. In determining any planning application for development, the local planning authority will be guided by current legislation, government planning policy, and the policy and guidance set by the relevant Local Planning Authority.
- 2.1.2. The following section sets out the legislative and planning policy context for the Proposed Scheme, including national and local planning guidance.
- 2.1.3. The applicable legislative framework to this assessment includes the following:
- The Town and Country Planning Act 1990;
 - The Planning and Compulsory Purchase Act 2004;
 - The Planning (Listed Buildings and Conservation Areas) Act 1990, and
 - Planning Act 2008.

LISTED BUILDINGS AND CONSERVATION AREAS

- 2.1.4. *The Planning (Listed Buildings and Conservation Areas) Act 1990 (P(LBCA) Act)* sets out the legal requirements for the control of development and alterations which affect listed buildings and conservation areas.
- 2.1.5. Section 1 of the P(LBCA) Act defines a 'listed building' as a 'building which is for the time being included in a list compiled or approved by the Secretary of State under that section. For the purpose of the Act any object or structure fixed to the building, which, since on or before 1 July 1948, has formed part of the land and is comprised within the curtilage of the building is treated as part of the building. 'Building' is defined as including any structure or erection and any part of a building'.
- 2.1.6. Any decisions relating to Listed Buildings and their settings and conservation areas must address the statutory considerations of the P(LBCA) Act 1990. The key elements of this Act relevant to this heritage statement are outlined below:
- 2.1.7. Section 66 places a responsibility upon the decision maker in determining applications for planning permission for a Scheme that affects a listed building or its setting to have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses; and Section 72 of the Act places a duty upon the decision maker in determining applications for planning permission within conservation areas to pay special attention to the desirability of preserving or enhancing the character or appearance of that area.
- 2.1.8. As far as Section 72 is concerned, it has been established by the Courts that development which does not detract from the character or appearance of a conservation area is deemed to be in accordance with the legislation. In other words, there is no statutory requirement to actively 'enhance'.

- 2.1.9. Section 1 of the 1990 Act also imposes a duty on the Secretary of State to compile or approve a list or lists of buildings of special architectural or historic interest as a guide to the planning authorities when carrying out their planning functions. Alongside the 1990 Act the Government has also produced guidance on the Principles of Selection for Listing Buildings (DCMS 2010). The statutory criteria for listing are the special architectural or historic interest of a building. Many buildings are interesting architecturally or historically, but in order to be listed, a building must have “special” interest.
- 2.1.10. Buildings on the list are graded to reflect their relative architectural and historic interest, based on the below:
- Grade I buildings are of exceptional interest;
 - Grade II* buildings are particularly important buildings of more than special interest;
 - Grade II buildings are of special interest, warranting every effort to preserve them.
- 2.1.11. In addition to the statutory criteria for listing – architectural and historic interest, and group value, the following general principles are also considered by the Secretary of State when determining if a building is suitable for addition to the list of building of special architectural and historic interest.
- 2.1.12. **Age and rarity.** The older a building is, and the fewer the surviving examples of its kind, the more likely it is to have special interest. The following chronology is meant as a guide to assessment; the dates are indications of likely periods of interest and are not absolute. The relevance of age and rarity will vary according to the particular type of building because for some types, dates other than those outlined below are of significance. However, the general principles used are that:
- before 1700, all buildings that contain a significant proportion of their original fabric are listed;
 - from 1700 to 1840, most buildings are listed;
 - after 1840, because of the greatly increased number of buildings erected and the much larger numbers that have survived, progressively greater selection is necessary;
 - particularly careful selection is required for buildings from the period after 1945;
 - buildings of less than 30 years old are normally listed only if they are of outstanding quality and under threat.
- 2.1.13. **Aesthetic merits.** The appearance of a building – both its intrinsic architectural merit and any group value – is a key consideration in judging listing proposals, but the special interest of a building will not always be reflected in obvious external visual quality. Buildings that are important for reasons of technological innovation, or as illustrating particular aspects of social or economic history, may have little external visual quality.
- 2.1.14. **Selectivity.** Where a building qualifies for listing primarily on the strength of its special architectural interest, the fact that there are other buildings of similar quality elsewhere is not likely to be a major consideration. However, a building may be listed primarily because it represents a particular historical type in order to ensure that examples of such a type are preserved. Listing in these circumstances is largely a comparative exercise and needs to be selective where a substantial number of buildings of a similar type and quality survive. In such cases, the Secretary of State’s policy is to list only the most representative or most significant examples of the type.

- 2.1.15. **National interest.** The emphasis in these criteria is to establish consistency of selection to ensure that not only are all buildings of strong intrinsic architectural interest included on the list, but also the most significant or distinctive regional buildings that together make a major contribution to the national historic stock. For instance, the best examples of local vernacular buildings will normally be listed because together they illustrate the importance of distinctive local and regional traditions. Similarly, for example, some buildings will be listed because they represent a nationally important but localised industry, such as shoemaking in Northamptonshire or cotton production in Lancashire.
- 2.1.16. **State of repair.** The state of repair of a building is not a relevant consideration when deciding whether a building meets the test of special interest. The Secretary of State will list a building which has been assessed as meeting the statutory criteria, irrespective of its state of repair.

2.2 NATIONAL PLANNING POLICY FRAMEWORK

- 2.2.1. The Government issued the revised National Planning Policy Framework (NPPF) in July 2018 (DCLG 2018). The supporting Planning Practice Guidance (DCLG 2014) will, where necessary, be updated in due course to reflect changes to the National Planning Policy Framework. The NPPF recognises that heritage assets are an irreplaceable resource (para 184) and requires the significance of heritage assets to be considered in the planning process, whether designated or not.
- 2.2.2. In determining applications paragraph 189 places a duty on local planning authorities to require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.
- 2.2.3. Section 16 Conserving and enhancing the historic environment, paragraphs 184 to 202 address the impact of a proposed development on the significance of designated and non-designated heritage assets:

Para 193. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.

Para 194. Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of: a) Grade II listed buildings, or Grade II registered parks or gardens, should be exceptional; b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, Grade I and II* listed buildings, Grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.

Para 195. Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply: a) the nature of the heritage asset prevents all reasonable uses of the site; and b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that

will enable its conservation; and c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and d) the harm or loss is outweighed by the benefit of bringing the site back into use.

Para 196. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.

Para 197. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

Para 198. Local planning authorities should not permit the loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred.

Para 200. Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably.

Para 201. Not all elements of a Conservation Area or World Heritage Site will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 195 or less than substantial harm under paragraph 196, as appropriate, taking into account the relative significance of the element affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole.

2.2.4. Section 12 Achieving well-designed places, paragraphs 124 to 132, outlines the Government's policy regarding design. It emphasises that "Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities".

2.2.5. Paragraph 127 states that planning policies and decisions should ensure that developments:

- a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development; b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
- c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
- d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;
- e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

2.2.6. The web-based National Planning Policy Guidance (<http://planningguidance.communities.gov.uk/>) provides supporting information in respect of planning at the historic environment but no additional policy for archaeology to that set out in the NPPF.

2.3 LOCAL POLICY

2.3.1. Following the Planning and Compulsory Purchase Act 2004, local Planning Authorities were required to replace county level structure plans and district level local plans, and unitary development plans (UDPs), with a new system of Local Development Frameworks (LDFs). These are a portfolio of local development documents, now more commonly referred to as the 'Local Plan' or 'Local Development Plan'. In some cases, UDP policies may be either 'saved' or 'deleted'. In most cases archaeology policies are likely to be 'saved' because there have been no significant changes in legislation or advice at a national level.

2.3.2. The Adopted Local Plan for South Derbyshire comprises the following documents:

- The Adopted Local Plan Part 1 (June 13, 2016). This document sets the long-term vision, objectives and strategy for the spatial development of South Derbyshire.
- The Local Plan Part 2 (November 2, 2017). This document proposes non-strategic housing allocations and detailed development management policies.

2.3.3. The following local plan policies are considered to be of particular relevance to this heritage statement:

Cultural Heritage

Policy BNE2: Heritage Assets

A. Development that affects South Derbyshire's heritage assets will be expected to protect, conserve and enhance the assets and their settings in accordance with national guidance and supplementary planning documents which the authority may produce from time to time.

These assets include:

- i) Conservation Areas
- ii) Scheduled Monuments
- iii) Listed buildings
- iv) Registered historic parks and gardens
- v) Undesignated heritage assets on the local list

B. Particular attention will be paid to:

- i) the heritage of the Trent Valley, including its prehistoric remains, ancient crossing points and the transport heritage of the Trent Navigation, Trent and Mersey Canal, and the railways;

ii) the complementary relationship that exists in many cases between estate parklands and villages. Often they are integral parts of a conservation area, or form part of a conservation area setting. The management and care of these landscaped grounds is material to the character of the adjacent villages.

iii) the industrial heritage of Melbourne, Shardlow, Swadlincote and Ticknall. Most of this historic industry has now gone, but the surviving structures and landscape evidence continue to exert a huge influence on the character of these places.

C The Council will promote the respect for, and protection and care of, the historic environment by:

i) developing a local list of undesignated heritage assets, covering the same categories as the designated assets in the national list, in accordance with the best practice guidance issued by English Heritage.

ii) considering the further use of Article 4 directions, reinforced through grant schemes where possible and enforcement action where necessary.

iii) periodic production and updating of conservation area appraisals and management plans.

iv) measures to tackle heritage “at risk”, including service of urgent works and repairs notices where necessary.

D. The District Council will work with private owners and developers to bring forward opportunities to secure the long-term future, sensitive use or re-use of under-utilised buildings, and the development of gap sites in conservation areas where development is beneficial to the character and appearance of the area. The District Council will also seek opportunities to improve public access to existing heritage features associated with new development schemes.

Landscape

Policy BNE4: Landscape Character and Local Distinctiveness

A. The character, local distinctiveness, and quality of South Derbyshire's landscape and soilscape will be protected and enhanced through the careful design and sensitive implementation of new development.

B. Developers will be expected to retain key valued landscape components such as mature trees, established hedgerows and topographical features within development sites unless it can be demonstrated that the loss of features will not give rise to unacceptable effects on local landscape character. Development that will have an unacceptable impact on landscape character (including historic character), visual amenity and sensitivity and cannot be satisfactorily mitigated will not be permitted.

C. In bringing forward proposals developers will be expected to demonstrate that close regard has been paid to the landscape types and landscape character areas identified in The Landscape Character of Derbyshire. Proposals should have regard to the woodland and tree planting, landscape management and habitat guidance set out in this document and demonstrate that mitigation proposals are appropriate to the character of the landscape.

D. Within the National Forest Area developers will be expected to demonstrate that close regard has been paid to the landscape types and landscape character areas identified in the National Forest Landscape Character Assessment both within the design of the scheme and in the incorporation of woodland planting and landscaping.

E. The Council will seek to protect soils that are ‘Best and Most Versatile’, (Grades 1, 2 and 3a in the Agricultural Land Classification) and wherever possible direct development to areas with lower quality soils.

3 METHODOLOGY AND SOURCES

3.1 DESK-BASED ASSESSMENT

- 3.1.1. This heritage statement has been carried out in accordance with the requirements of the National Planning Policy Framework (NPPF) (MHCLG 2018) and to standards specified by the Chartered Institute for Archaeologists (CifA Dec 2014a, 2014b) and Historic England (HE 2017a, HE 2017b). The British Standard: Guide to the Conservation of Historic Buildings 7913:2013 (BS 2013).
- 3.1.2. The table below provides a summary of the key data sources that contribute in the production of this heritage statement. Occasionally there may be reference to assets beyond the study site or surrounding search area, where appropriate, e.g., where such assets are particularly significant and/or where they contribute to current understanding of the historic environment.

Table 1 – Summary of data sources

Source	Data	Comment
Historic England	National Heritage List (NHL) with information on statutorily designated heritage assets.	Statutory designations (scheduled monuments; statutorily listed buildings; registered parks & gardens; historic battlefields) can provide a significant constraint to development.
Local Planning Authority	Planning policy, supporting supplementary planning guidance (SPGs) & policy data.	For example, conservation area charter appraisals, & local plan documents.
Local Record Office / Archives	Historic maps, plans, & documentary sources.	The local record office or archives are the repository for historic maps & plans, as well as written materials from a great variety of independent local organisations, including churches & schools, prominent families & their estates, businesses, solicitors' offices & private individuals.
Ordnance Survey mapping	Ordnance Survey maps from the 1st edition (1860–70s) to present day.	Provides an indication of the development of settlements/ landscape through time as well as the possible date of any buildings on the site. Provides a good indication of past land use, the potential for archaeology & impacts which may have compromised archaeological survival.
Internet	Web-published local history; Archaeological Data Service.	Many key documentary sources, such as the Victoria County History, the Survey of London, & local & specialist studies are now published on the web & can be used to inform the archaeological & historical background. The Archaeological Data Service includes an archive of digital fieldwork reports.

Source	Data	Comment
The client	Planning data	Drawings of the existing and proposed.

- 3.1.3. Figure 1 shows the location of known historic environment features within the study site and search area, as identified by the sources above, the site visit, or during the course of research for this heritage statement. These can be identified by their associated reference number (**A1**, **A2**, etc.), which maybe cross referenced to relevant sections in the text. Where there are a considerable number of listed buildings in the search area, only those within the vicinity of the study site (i.e. within 100m) are included, unless their inclusion is considered relevant to the study.

3.2 SITE VISIT

- 3.2.1. A site visit was carried out on the 06/03/2019. The site visit was undertaken in order to ascertain the baseline conditions relevant to the production of this heritage statement. This included, for example: topography, existing buildings/ landscape features/ planting, and sources of disturbance. It also included a walkover inspection of the area around the study site in order to assess the contribution of the wider character and setting to the significance of the study sites heritage interest and whether the proposed development will affect the heritage significance of assets beyond the study site. Access to certain sections of the study site/ buildings was not possible due to restricted / private access. The condition for the site visit were overcast and rainy, interspersed with bright breaks in the cloud cover.

3.3 ASSESSING HERITAGE SIGNIFICANCE

- 3.3.1. The NPPF defines significance as ‘The value of a heritage asset to this and future generations because of its heritage interest. That interest may be historic, archaeological, architectural or artistic.’
- 3.3.2. Historic England’s *Conservation Principles* (previously English Heritage, 2008) identified four high level values: evidential, historic, aesthetic and communal. A revised consultation draft of *Conservation Principles* published by Historic England in November 2017 adopts the values terminology of the NPPF.
- *Historic Interest*: the way in which an asset can illustrate the story of past events, people and aspects of life (illustrative value, or interest). It can be said to hold communal value when associated with the identity of a community.
 - *Archaeological Interest*: the potential of an asset to yield evidence of past human activity that could be revealed through future investigation. Archaeological interest includes above-ground structures, as well as earthworks and buried or submerged remains.
 - *Architectural and Artistic Interest*: derives from a contemporary appreciation of an asset’s aesthetics. Architectural interest is an interest in design, construction, craftsmanship and decoration of buildings and structures. Artistic interest can include the use, representation or influence of historic places or buildings in artwork. It can also include the skill and emotional impact of works of art that are part of heritage assets or assets in their own right.

- 3.3.3. These values encompass the criteria that Historic England are obliged to consider when statutorily designating heritage assets. There is no single defining criteria that dictates the overall asset significance; each asset has to be evaluated against the range of criteria listed above on a case by case basis. These values are not intended to be restrictive but are identified in order to help establish a method for thinking systematically and consistently about the heritage values that can be ascribed to a place and contribute to a heritage assets significance.
- 3.3.4. In relation to a recognised heritage asset, the production of this heritage statement takes into account the contribution which the historic character and setting makes to the overall significance of the asset.

3.4 ASSESSING THE CONTRIBUTION OF SETTING

- 3.4.1. In relation to designated heritage assets, the assessment takes into account the contribution that setting makes to the overall significance of the asset.
- 3.4.2. Setting is the way in which the asset is understood and experienced. It is not an asset in itself. It differs from curtilage (historic/present property boundary); context (association with other assets irrespective of distance) and historic character (sum of all historic attributes, including setting, associations, and visual aspects).
- 3.4.3. Guidance produced by Historic England (HE 2016) and the Landscape Institute and Institute of Environmental Management and Assessment (2013) has been used to adopt a stepped approach for settings assessment. The former sets out five steps, of which the first four are relevant:
- *Step 1: asset identification.* The NPPF requires an approach that is proportionate to the significance of the asset, and for this reason only the settings of the most sensitive (i.e. designated) heritage assets are considered in this assessment. A scoping exercise filters out those assets which would be unaffected, typically where there are no historic links and/or views to/from the site.
 - *Step 2: assess the contribution of setting.* This stage assesses how setting contributes to the overall significance of a designated asset.
 - *Step 3: assess change.* This considers the effect of the proposals on asset significance. It is noted however that it can be difficult to quantify such change to the overall significance of a designated heritage asset (for example, designation would rarely be downgraded (e.g. from II* to 'II due to changes in setting). For this reason, the impact is reported in this assessment in terms of the extent to which the proposals would change how the asset is understood and experienced (i.e. substantial harm, less than substantial harm or no harm).
 - *Step 4: mitigation.* This explores the way to maximise enhancement and avoid or minimise harm. This is typically considered at the design stage (i.e. embedded design mitigation).
 - *Step 5: reporting.* Making and documenting decisions and outcomes. This reports the assessment of effects.
- 3.4.4. The production of this heritage statement has taken into account the physical, historic and sensory surroundings of the asset, in order to understand the contribution 'setting' makes to the heritage significance of

the asset(s). This has included topography and intervening development and vegetation. It also considers how the asset is currently experienced and understood through its setting, in particular views to and from the asset and the site, along with key views, and the extent to which setting may have already been compromised.

3.5 DEFINITION OF HARM

3.5.1. Current guidance by Historic England is that ‘change’ does not equate to ‘harm’. The NPPF and its accompanying PPG effectively distinguish between two degrees of harm to heritage assets – substantial and less than substantial. Paragraph 195 of the NPPF states that:

‘Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss...’

3.5.2. Paragraph 196 of the NPPF states that:

‘Where a development proposal would lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposals...’

3.5.3. In determining the effects of the Proposed Scheme this heritage statement is cognisant of case law. Including the below:

- Flag Station, Mansel Lacy, Herefordshire [22/09/2015] Case Number EWHC 2688

3.5.4. This ruling has emphasised the primacy of the 1990 Planning Act – and the fact that it is up to the decision makers in the planning system to ‘have special regard to the desirability of preserving the [listed] building or its setting’. As stated by HH Judge David Cooke in a judgment of 22 September 2015 regarding the impact on the setting of a listed building:

‘It is still plainly the case that it is for the decision taker to assess the nature and degree of harm caused, and in the case of harm to setting rather than directly to a listed building itself, the degree to which the impact on the setting affects the reasons why it is listed.’

- PALMER Appellant and Herefordshire Council and ANR [04/11/16] Case No: C1/2015/3383

3.5.5. The judgment was agreed by Lord Justice Lewison at the Court of Appeal, who stated that:

‘It is also clear as a matter both of law and planning policy that harm (if it exists) is to be measured against both the scale of the harm and the significance of the heritage asset. Although the statutory duty requires special regard to be paid to the desirability of not harming the setting of a listed building, that cannot mean that any harm, however minor, would necessarily require planning permission to be refused.

4 BACKGROUND

4.1 SITE LOCATION AND CONTEXT

- 4.1.1. The study site is located within the District of South Derbyshire, to the north of the village of Lullington. The current site area is 93 hectares in size and is located approximately between NGR SK2413 9671 and SK2413 4758 (see Figure 1). The nearest settlement is the village of Lullington c425m to the south of the study site's southernmost boundary; Coton in the Elms, a small settlement c994m to the north of the study site's northern boundary; Edingale c2,270m to the south-west of the study site's southwestern most boundary, and the village of Netherseal c3,152m to the east of the study site's south-eastern most boundary.
- 4.1.2. The study site extends west-east across three distinct land parcels, divided by intervening roads.
- 4.1.3. The western most land parcel lies to the west of the Edingale to Coton-in-the-Elms road. This road extends north – south along the eastern side of this land parcel at an elevation of between 81/82 m at its northern end and as low as 76m at its southern end. The road has hedging to both sides that channel views in the direction of travel. The land parcel to the west consists of undulating land divided by hedged field boundaries that rises to an elevation of between 85m to 90m along its western most edge, where the parcel meets a north-south liner tree belt that extends along its length. To the west of this the land drops to an elevation of between 69 and 75m in the area of Raddle Farm. This parcel northern boundary is defined by a block of liner tree planting that varies in elevation from approximately 86m in the north-west to 82m at its north-eastern end where it meets the road. At its southern end the study site is bounded by west-east aligned hedging to the north of Lady Leys Farm, which is located at an elevation of approximately 85m.
- 4.1.4. The central parcel of land is roughly rectilinear in shape and located within a triangular block of land formed between the Edingale to Coton-in-the-Elms road along its western boundary and the Lullington Road along its eastern boundary, both of which meet at a junction to the north of the study site. A small road extending west-east that connects these two roads together just north of Lullington forms the southern end of this triangular block of land. The study site land parcel itself is formed of a number of fields with boundary hedging, and gently undulates as it rises from west to east from between 82 to 85m at its northern end to between 80m to 90m at its southern end. Its northern boundary runs along a line of hedging which also forms the parish boundary line. The southern boundary is again formed by a largely west-east field boundary with hedging. A number of small stands of woodland and ponds (extraction pits) are also located within the study site. The Lullington Road is hedged to either side, with established trees dotting its course and small blocks of woodland plantation edging its western side towards the village of Lullington. The village itself is largely hidden from view by planting, topography and the direction of the road until the boundary hedging to the study site's southern boundary is reached and views of the eastern side of the village and farm shedding immerge, the road alignment shifts slightly east as it progressed south opening up views that include the church tower and spire amidst planting/ trees at the very western edge of the settlement.

- 4.1.5. The easternmost parcel of land is bounded by the Lullington Road on its west and the north-east to south-west aligned road to Botany Bay to the east. To the north the study site is bounded by hedging extending along the parish boundary, and to the south by field boundaries, associated hedging and groups of trees located around historic extraction pits. The land parcel again consists of undulating land divided by hedged rectilinear field boundaries. The western central section of the study site is slightly elevated at between 87m to 90m, as is the north-eastern corner of the land parcel at c90m. The land then drops in height towards the central southern section of the study site as it drops to the Botany Bay road, at c86m to 81m in its south-eastern corner.

4.2 CONDITION AND USE

- 4.2.1. The study site is currently undeveloped and forms part of a large intensively farmed arable field complex, incorporating rectilinear field boundary hedgerows, small pockets of woodland and a number of probable marl pits, now wooded and containing standing water.
- 4.2.2. The dominant land use surrounding the study site is agricultural – largely arable with some pasture towards the village of Lullington.
- 4.2.3. Photographs of the current site conditions can be found in Figures 6-17.

4.3 HISTORICAL CONTEXT

- 4.3.1. This section provides an overview of the study site and the historical background relevant to an understanding of its historic context and interest. This is based on accessible records. It is not the purpose of this document to create a detailed historical narrative of the area, but to provide an assessment of the study site's historical development and heritage potential in accordance with the NPPF.
- 4.3.2. The origins of the name Lullington come from Lullitune (first mentioned in Domesday in 1086), which is derived from “Lulla’s farm”. During the 18th century there had been some consolidation of local farms to create a reduced number of farms with larger acreages in compact blocks. In the early 19th century one of the largest farms in Derbyshire, at 603 acres, was held by Mr Thomas Moore of Lullington (Farey Vol. 2 1813).
- 4.3.3. From the early 12th century until 1837 the Gresley family owned the manor of Lullington. Several younger sons of the Gresley family occupied the manor house during the 16th and 17th centuries but after about 1700 the family no longer resided in the village and the manor house was let out as a tenanted farm like the rest.
- 4.3.4. Sir Roger Gresley (lord of the Manor of Lullington and 8th Baronet of Drakelow) inherited the estate in 1808, at the age of nine. He sold off many of his estates to finance his extravagant lifestyle and, when he died in October 1837, he had a number of outstanding debts. The 1,822-acre Lullington estate was sold to pay off some of his debts. It was bought by Charles Robert Colvile, a local gentleman of only 22 years of age, the son of a Derbyshire family who lived at Duffield Hall.
- 4.3.5. There was a moated site in Lullington, although there has been much confusion over this and there are several accounts stating that it was located near Lullington Hall. A plan of 1824 clearly shows the moat as a T-shaped feature pertaining to the rectory or parsonage (now Lullington House). It was partially filled in when Lullington Court was built in 1964.

- 4.3.6. When Charles Robert Colville bought the estate from the Gresley family the old manor house had long since been no more than a superior farmhouse. It is generally accepted that it was the Colville family who began to build a new and imposing hall on the south side of the village near the present cricket ground. However, there appears to be no documentary evidence whatever to establish the date of this ambitious building project, which was abandoned at an early stage following the levelling of garden terraces and retaining walls.
- 4.3.7. It is equally plausible that the Gresley family had planned the new house prior to Sir Roger Gresley's sale of the estate in the late 1830s, which would explain its abandonment. The clearest clue to this possibility is the diversion of the road from Lullington to Edingale in 1832. The old route passed directly in front of the new house site and would have severely compromised its privacy and amenity. A new stretch of road, the present route, was laid out past the church and the old route was closed. This may have been done simply to rationalise the road layout and make it more convenient, but it could also have been done in preparation for building the new house. Whatever the reason, the new house was abandoned and the Colville family adapted the old hall on the north side of the village as their home instead.
- 4.3.8. Comparison of an 1824 Gresley estate survey with the 1880 Ordnance Survey confirms that the appearance of the village changed drastically during the 19th century when there was a systematic process of reconstruction and reinvestment in the village, most of it carried out by the Colville family. This was rather perfunctorily summarised in Bagshaw's Trade Directory of 1846, as: "The village has been considerably improved within the last few years".
- 4.3.9. The road layout remained largely the same as it had been in the medieval period, but the village and buildings seen today are largely a 19th century creation. There are one or two exceptions, dating possibly from the mid-late 18th century. The oldest and most prominent survivor of a previous era, which was demolished in 1964, was a row of eight timber framed and thatched cottages adjacent to the Colville Arms. These were probably typical of the 17th century cottages that would have once dominated the village. This row was replaced with the group of Council-owned cottages known as 1-4 Colville Close.
- 4.3.10. New cottages were built between 1824 and 1880, such as the semi-detached pair on the north side of Dag Lane (Creamery Cottage and South View). Another example, Aubretia Cottage, Rose Cottage and Victoria Cottage, is a row of three dwellings built in 1831 by the Gresley Estate. They are built in a typical "cottage orné" style, where the identity of the three was disguised to look like one large cottage.
- 4.3.11. Bagshaw's Directory of 1846 states that "Lullington parish contains the townships of Lullington and Coton-in-the-Elms, which together have 2,919 acres of land, and 653 inhabitants". The population of the parish in 1801 was 245 and had more than doubled by 1831 to 548. The land was described in 1846 as "light but rich, particularly celebrated for the excellent quality of its cheese".
- 4.3.12. The mid to late 19th century saw considerable demolition within the village and replacement. Further demolition during the 20th century occurred as well as the construction of new housing in the north-eastern side of the village, along Main Street, at Colville Close, and further north-west along Lullington Road.

- 4.3.13. The study site itself is located to the north of the village of Lullington. The tithe apportionment map of 1846 records that the land formed part of plot 1, with the landowner recorded as Charles Robert Colville Esquire M P, and the occupier as Charles Robert Colville Esquire and His Tenants. The tithe map records the layout of roads, with the village located to the south. The study site itself is recorded extending across three large fields divided by the Lullington Road to Coton in the Elms, and to the west of this the road from Coton in the Elms to Edingale, with the two roads meeting to the north of the study site, before splitting as they run south with one large field recorded between. To the west the study site extends into a further large field which meets the boundary with the parish of Edingale. To the east of the Lullington Road to Coton in the Elms the study site extends east across a further large open field until it meets a road the folks of the road to Netherseal in the south, and heads north-east to Botany Bay. No field divisions are recorded.
- 4.3.14. During the early 19th century began on the creation of Lullington Park with the removal of hedgerows from former agricultural land. The earliest part of the park, on the south side of the road to Edingale, was laid out to form a setting for a proposed new hall in the 1830s, but the building project was abandoned in its early stages.
- 4.3.15. The Colville family, who bought Lullington in 1837, made their home at the Old Hall further north in the village, but the farmland west of their house was not converted into parkland until the late 19th century. The early phase of the park did not revert to agriculture. Instead, it became an adjunct of the late 19th century parkland adjoining it to the north side. The result was a somewhat disjointed parkland straddling both sides of the road to Edingale, and also extending northwards to straddle both sides of Coton Lane. The 1884 OS map (Figure 2) does not record the park, which does not appear to have become more formally recognised as a parkland until later. The map does however record the village layout to the south of the study site and associated roads. The study site itself is made up of a number of largely rectilinear / sub-square fields and associated partially treed field boundaries. A number of small sub-circular/ rectilinear ponds are also recorded as well as a small rectilinear plantation on the western side of the Lullington Road. The first map to record the extent of Lullington Park is the 1902 OS map (Figure 3). This records the park extending along the western side of the village from the north of the lane leading to the Edingale and Coton in the Elms road of Lullington Road, and to the south of the village beyond the Edingale Road and Fox Covert.
- 4.3.16. The maximum extent of the park is shown on the 1923 Ordnance Survey. It took within its boundary several large fields previously known as the Great Woollen, Middle Woollen and Lower Woollen, whose names live on in the name of Woollens Plantation.
- 4.3.17. Today the southern part of the park is dominated by the cricket pitch that was first founded as Lullington Park Cricket Club and established on this site in 1881. A series of terraces exist to the west of the cricket pavilion, with a coursed stone wall separating them from the open countryside and parkland beyond. The structure of these terraces indicates an ambitious scheme for a terraced garden, designed to sit beyond the building platform for a new house, which would overlook the panoramic views to the south-west.
- 4.3.18. The northern part of the park lies to the immediate south of the study site to the north of the lane leading to the Edingale and Coton in the Elms road from Lullington Road and has today been reverted back to arable production. It does however still retain to small blocks of woodland associated with the earlier park.

5 STATEMENT OF SIGNIFICANCE

5.1 SUMMARY OF HERITAGE ASSETS

- 5.1.1. This Heritage Statement has been informed by a 1.0 km search area beyond the study site boundary. The size of the search area has been determined based on the prevailing site circumstances, the nature of the proposed scheme and professional judgment, as suitable for determining the potential impact of the proposed scheme on designated heritage assets. It is therefore consistent with paragraph 189 of the NPPF, in providing a level of detail proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.
- 5.1.2. The study site contains no designated heritage assets.
- 5.1.3. The following seven designated heritage assets have been identified within a 1 km radius of the study site:
- Lullington village conservation area
 - The Church of All Saints, a Grade II* Listed Building
 - Churchyard walls and gates to All Saints Church, a Grade II Listed Building
 - Village Hall, Lullington, a Grade II Listed Building
 - Lady Leys Farmhouse, a Grade II Listed Building
 - Woodfields Farmhouse, a Grade II Listed Building
 - Raddle Farmhouse, a Grade II Listed Building
- 5.1.4. The following non-designated heritage asset of local interest has been identified within a 1km radius of the study site boundary:
- Grafton House, a non-designated building considered to be of local heritage value.
- 5.1.5. There are no other designated heritage assets (i.e. Scheduled Monuments, Registered Parks and Gardens, Registered Battlefields or World Heritage Sites) within the study site or search area.
- 5.1.6. The following principal factors have been considered when determining the potential of the proposed scheme to have a material effect on the heritage significance of designated assets or the contribution of setting to that significance:
- The nature and scale of the proposed scheme;
 - The topographical position of the site relative to its surroundings, its degree of enclosure/ separateness, and the location of other heritage assets relative to the proposed scheme;
 - The fact that the greater the distance a heritage asset is from the site of the proposed scheme, the more diminished the visual effects are likely to be;

- The location, position and nature of intervening development, infrastructure, vegetation and landscape features;
- The contribution of an assets heritage values to its significance relative to their position, the orientation of their principal elevations/ aspects, and the location of the proposed scheme, and the sensitivities of these values to change resulting from the proposed scheme;
- The location and direction of key views likely to contribute meaningfully to a particular asset's significance or contribute to its appreciation, and
- The contribution of aspects of setting that contribute to the significance of heritage assets relative to the proposed scheme.

5.1.7. The significance of heritage assets beyond the 1.0 km search area, are not deemed to be sensitive to the proposed development as the study site is not deemed to form part of their setting based on the above criteria. Based on the above, only those designated heritage assets identified as having the potential to be materially affected by the proposed scheme will be considered in detail to determine if, and if so, to what degree the proposed development will have an effect on their heritage significance.

5.2 ASSET DESCRIPTION

5.2.1. Lullington Village Conservation Area (Figures 6-12)

5.2.2. Lullington is largely a 19th century estate village, developed by the Colvile family from the late 1830s until the early 20th century.

5.2.3. The village lies to the south-west of the South Derbyshire Coalfield in a rolling agricultural landscape. The ridge that Lullington sits upon is made up of sand and gravel glacial deposits lying upon a bedrock of Mercia Mudstone. The River Mease runs between the two villages of Lullington and Clifton Campville. To the east of the village runs Seal Brook, which feeds into the River Mease at Mill Farm, Clifton Campville.

5.2.4. Although Lullington village is predominantly 19th century in character, the buildings lie upon a medieval settlement pattern that continued to exert an influence over the layout of the village throughout the 19th century. The nucleated and compact structure, with a series of short vistas, enhances its picturesque qualities. This ancient plan form was deliberately manipulated in the mid-19th century by retaining some of the older buildings on the street frontage and removing others, resulting in a picturesque informality typical of estate villages.

5.2.5. The distinctive characteristics of Lullington can be summarised as follows:

- a small rural settlement with a compact nucleated settlement pattern
- verdant character within the village and semi-wooded setting to outlying areas and fringes, derived from a combination of large evergreen shrubs and large trees within private gardens, mature parkland trees and outlying copses developed for game. The planting is lush with a mixture of deciduous and evergreen trees,

dominated by 19th century planting; limes, yew and Scots pine, enhanced by 20th century planting of Redwoods and Norwegian spruce

- an estate character, which results from a high proportion of buildings dating from the mid-19th century, predominantly of red brick with tiled roofs and boundaries mainly of hedges and estate railings Lullington Conservation Area
- sharp bends and flat contours along the ridge provide a series of short vistas
- long views from the neighbouring villages where the tree-lined ridge and church spire are the main landmarks
- spacious setting to properties where detached and semi-detached houses are set within generous gardens

- 5.2.6. The character and appearance of the conservation area is also closely associated within its nucleated layout, which creates a streetscape on to which buildings primary elevations largely face onto their adjacent road, with Main Street being of particular note, especially around the junction with the church. Views here are largely inward looking and the layout of built form with associated planting a smaller more contained open spaces creates an intimate feel to much of the village.
- 5.2.7. Four principal roads converge on the ridgeline and the heart of the village approaching roughly from the north, south, east and west through a landscape of arable fields. With the exception of the church spire, there are no views of the buildings and the presence of the village is only hinted at by large blocks of trees planted within the gardens and parkland that follow the ridge.
- 5.2.8. On the approach from Coton-in-the-Elms, to the north of Lullington, the spire of Lullington church, locally known as “Lullington Spud”, can be seen for almost half a mile rising above a densely planted, dark understorey of mature deciduous and coniferous trees that follow the ridge within the village. The road is wide with a broad grassy verge and native hedgerows lining the road. Mature copses, planted as game cover, are interspersed with fields along the northern edge of the road.
- 5.2.9. The approach from Edingale to the west is the most dramatic and best illustrates the topography. The spire of the church can be seen from a mile away and is a distinct feature of the landscape, rising above the horizontal line of trees that crown and crowd along the ridge. The open expanse of large unfenced fields in the foreground (part of the formal parkland) provide a strong contrast with the dense planting above, which distinguishes the village from the surrounding countryside.
- 5.2.10. In approaching the village along the Edingale road, dark trees and evergreen shrubs, rhododendron and laurel, within the gardens of Lullington House and Lullington Court, crowd over the road and form a tunnel-like vista, the focal point of which is the former village school (now the Village Hall), built by C. R. Colville in 1843. Its siting was quite deliberate, placed for maximum impact and dramatic effect.
- 5.2.11. The eastern approach from Netherseal follows narrow, winding lanes with occasional glimpses of the church spire from afar, vying for attention with the spire of St. Andrew’s Church at Clifton Campville to its south.

- 5.2.12. The southern approach from Clifton Campville is gently undulating with the River Mease forming a natural divide between the two settlements in the valley bottom. To the north of the river the approach is heavily wooded to the east side of the road, with occasional glimpses of the church spire. Closer to the village the red brick houses within the walled garden are visible with the church tower and spire behind and a backdrop of mature trees.
- 5.2.13. The study site is located wholly to the north of this asset and is separated from it by intervening fields and associated planting – including hedges and small pockets of woodland. The nature of intervening topography, the topography within the Site and the approach to the village by the Lullington Road also masks and filters views towards the village for much of its length, while views along the road are partially channelled by roadside hedging, tree plantation and deflected east. The most notable view from the north towards the village is obtained as the road shifts direction slightly west opening up views towards the church tower and spire, which sits amidst a band of tree planting, below which large format farm shedding associated with the northern edge of the village, and adjacent fields become visible within its wider landscape setting. Views become clearer as the intervening distance decreases picking up other buildings, but correspondingly views towards the church spire become more filtered/ masked by intervening planting. The western and central sections of the study site are almost entirely visually separated from the village due to distance and intervening planting. The most expansive views towards the village are obtained from the eastern most portion of the study site. This sees a patchwork of fields, interspersed with hedging and trees extending over and towards the more elevated position of the village. The village itself largely sits below an extensive belt of tree planting that dominates the ridgeline. As a result, built form is largely indistinguishable with the Spire of the Church the principle landscape feature visible that indicates the position of the village. The village itself only starts to become more apparent as you approach the junction between the road to Botany Bay and Overseal, at which point outlying development at Holm Farm and the very north-eastern side of the village start to sit forward of the wider landscape setting. The village itself has experienced notable change during the course of its history including the demolition of earlier properties for the redevelopment of the village in the mid-19th century and more recent modern development on infill sites and to the village periphery.
- 5.2.14. In conclusion, it is considered that the heritage significance of the conservation area is principally derived from the historical, architectural and aesthetic value of built form and spaces extending primarily along Main Street, Dag Lane and Edingale Lane. The nucleated layout of historic roads, and the consistency of its character and appearance resulting from its mid-19th century development and the use of a traditional palette of materials also adds notably to the character and appearance of the conservation area. The nucleated layout has also resulted in a relatively intermate, inward looking character. The contribution of planting and hedging also contributes notably to its character and appearance. As a result, the defining character elements of the conservation area are based on the arrangement of roads and lanes, the consistency of materials used and interrelationships between the arrangement of built form, spaces and planting. Peripheral views from the edge of settlement across the landscape are also of note, with the conservation statement for Lullington identifying one principal view – the view south-west from the cricket ground.

- 5.2.15. The contribution of setting to the significance of this asset is principally derived from its interface with the surrounding agricultural landscape, and the interrelationship between topographical position, lines of communication (roads and lanes leading into and out of it), built form and planting. Of particular note are the fields adjacent to the immediate approach to the village where they contain point views of the church spire.

5.2.16. The Church of All Saints

Designation: Grade II* Listed Building. List Entry Number: 1159003

- 5.2.17. This asset is located 610m to the south of the southernmost boundary of the proposed scheme. It was first listed on 19th January 1967.
- 5.2.18. This asset is a parish church dating from the late 14th century. It has a three-stage tower with a spire rebuilt in 1776. The nave and chancel were heavily restored in 1861-2 and the south aisle added. The building is of coursed squared stone with stone dressings, chamfered plinth and continuous moulded sill stringcourse. Steeply pitched plain tile roofs with diaper work and crested ridge tiles, also stone coped gables with ridge crosses to nave and chancel east gables, plus chamfered eaves band. The church is located within the south-western corner of the village of Lullington, set back from the junction between Main Street (Lullington Road), which runs along its eastern boundary, and the road to Edingale, which runs along its southern boundary. To its north is Lullington House and its extensive grounds. The western, and northern periphery to the churchyard is well planted, with light woodland, trees and hedging. The main approach to the church is of the Edingale Road and to the church's principal south facing elevation.
- 5.2.19. The setting of the church is largely formed by its historical, functional and visual relationship with its associated churchyard, churchyard walling, and the gravestones and monuments located within the churchyard itself. The church is located within a rectilinear plot of land which encompasses its historic graveyard (now grassed). Gravestones have been relocated largely to the western end of the churchyard. The graveyard is predominately grassed with some trees and planting both to its perimeter and within. It is however largely open to the village and adjacent properties, to its south, and east along the road side. The wider village is located immediate beyond the churchyard to the north and north-west. As a result, the main body of the church and its churchyard are largely screened from views from Main Street and to the north by intervening built form and planting. To the south, garden walling, planting and built form again largely restrict views of the main body of the church until the junction with the Edingale Road, where views open out to encompass the church in its architectural whole. This provides the most notable views of the church and encompasses its principal architectural elements as well as its setting within the churchyard. Views from the west are largely screened by roadside planting until the western end of the churchyard is reached. More extensive views of the main church are however possible from the east as it curves around the southern part of the village to the village green. These views are partially filtered by planting and evolve in the approach.
- 5.2.20. The majority of views to and from the church within the village and immediate surroundings are limited by built form, planting, and the nucleated plan form of the village itself. As a result, views of the main church, where available, are glimpsed, filtered or partial until you are almost opposite it. The principal aspects of setting that contribute to the significance of the church are therefore derived from its immediate graveyard setting and the

road junction on which it is located. The associated churchyard walling, and planting create a sense of enclosure, seclusion and intimacy and the church retains a strong sense of self and historic continuity. The wider setting of the church has changed over time through the development of the adjacent, largely 19th century, estate village. Significantly the 19th century development largely adds to the quality and character of the churches setting, although they have shifted that setting from rural agricultural to village. The principal distant views are those from the cricket pitch overlooking the lowland landscape of the Trent valley to the south-west. This area is currently outside the conservation area. Views from afar are also important, particularly the sight of “Lullington Spud”, the church spire and principal village landmark, protruding above the tree cover, which is visible in long views from the east and west, and north. Long distance views of the church are however largely derived at a landscape scale and based on the upper body of the churches spire being visible above and between planting/ trees within the village core and around its periphery.

- 5.2.21. The principal heritage significance of the church itself is largely derived from its historic, architectural and aesthetic interest as a 14th century church, much rebuilt. The significance of the church is also derived fundamentally from its historic and continuing role and function within the community, and its historical associative value with preeminent local families. Visually the setting of the church has changed notably over time as a result of 19th century development. This has changed the understanding and appreciation of it being a more isolated rural church, but the association with its graveyard retains a sense of seclusion and intimacy that supports a general aesthetic quality in keeping with its current village setting.
- 5.2.22. The contribution of setting to the significance of this asset is therefore principally derived from its immediate relationship with its graveyard, its associated monuments, planting and church wall, and the adjacent villagescape to Main Road and the junction with the road to Edingale.
- 5.2.23. Churchyard Walls and Gates to All Saints Church**
- 5.2.24. Designation: Grade II Listed Building. List Entry Number: 1096413
- 5.2.25. This asset is located c604m to the south of the southernmost boundary of the proposed scheme. It was first listed on 2nd December 1986.
- 5.2.26. The asset is composed of the walls and gate dated to the church dated to c1860. The walling is of Ashlar and forms a retaining wall enclosing two sides of the churchyard (to south and east) with a pair of gate piers to centre of southern wall. These have plain chamfered bases and gabled tops with recessed quatrefoils to road side. Surmounting the piers is an ironwork lantern arch with original lamp to centre, and between the piers there are pair of wooden gates with iron finials. Walls to either side have chamfered stone copings. This asset is included on the list for group value only.
- 5.2.27. The contribution of setting to the significance of this asset is directly derived from its immediate association and visual relationship to the church, its road side setting and the adjacent village. This asset has no direct relationship to the study site, and is wholly separated from it visually by distance, intervening development, planting and relative topographic position.

5.2.28. Village Hall, Lullington

5.2.29. Designation: Grade II Listed Building. List Entry Number: 1334596

5.2.30. This asset is located 620m to the south of the southernmost boundary of the proposed scheme. It was first listed on 12th December 1986.

5.2.31. This asset was the village school, now village hall. It is dated to 1843 and was built by Charles Colville with minor later alterations. The building is single storey and of three bays plus porch to north. The building is built of ashlar with stone dressings, and a steeply pitched fishscale tile roof.

5.2.32. The contribution of setting to the significance of this asset is largely derived from its immediate road side setting and its relationship with the church and neighbouring historic properties. This asset has no direct relationship to the study site, and is wholly separated from it visually by distance, intervening development, planting and relative topographic position.

5.2.33. Lady Leys Farmhouse

5.2.34. Designation: Grade II Listed Building. List Entry Number: 1311228.

5.2.35. This asset is located approximately 266m to the south of the southernmost boundary of the proposed scheme. It was first listed on 12th December 1986. This asset is a late 18th century farmhouse with 19th additions and minor 20th century alterations. The building is two storeys in height and of three bays with L-shaped plan. It is constructed of red brick with gauged brick and stone dressings, and a plain tile roof with brick gable stacks plus stepped eaves band. Its principle elevation faces south-east. Please note: this asset has no right of public access and could not therefore be closely viewed.

5.2.36. This asset is set in a relatively isolated location at an elevated position on a north-south aligned ridgeline amidst large square and sub-recliner fields. It is approached by a trackway of the Edingale to Coton in the Elms road and looks towards the direction of Lullington to its south-east. The setting of the farm is largely formed by its functional and visual relationship with its associated farm buildings, most notable the range of buildings immediately to its rear arranged around a small yard, and a garden plot to its front and side. Due to its elevated position the approach to the farm via a trackway to its east, and the fields through which this track passes to its immediate east, also add to the general understanding and appreciation of the farmhouse.

5.2.37. The principal heritage significance of the farmhouse is largely derived from its historic, architectural and aesthetic interest as a late 18th century farmhouse, with the buildings east facing principal elevation being of most note. Later alterations have partially reduced its original coherence, but it still retains a functional link to a range of farm buildings to its rear arranged around a small yard. Beyond this modern, large format sheds have been built to its rear (west) which now dominate its earlier farmyard setting. These have altered the functional and visual relationship the farmhouse has to its farmyard and wider setting. Visually these structures are of a scale and form that contribute little to the significance of the farmhouse itself. Their contribution largely being derived from their associative value as 'agricultural', and therefore demarking the farmhouses function. The wider agricultural field systems and the nature and practice of agricultural production has also changed over time although this has altered their historic contribution to the farmhouse they still add to its general character.

5.2.38. The contribution of setting to the significance of this asset is therefore principally derived from its immediate relationship with its associated 'historic' farm buildings and farmyard. The farmhouses garden plot to its east and north, and the field and trackway to its immediate east that form its approach also contribute to its setting. The wider agricultural landscape does not form part of the asset's principle setting but it does add to the visual and perceptual understanding of the historic development and function of the farmhouse.

5.2.39. The study site is located approximately 266m to the north and north-east of the farmhouse. A large field and associated field boundaries / planting separate this asset from the southernmost boundary of the study site. View toward the asset from the road to the north-east present an expanse of built form associated with the farmstead (modern shedding) running along the ridgeline, with the modern shedding dominating views. The foreground is intercepted by roadside hedging which partially channel/ direct views along the course of the road, while the midground to the east is dominated by arable fields that gently shelf upwards and undulate towards the ridgeline. As you move south views are partially intercepted by isolated groups of trees, and hedging. Distance and the mass of modern shedding limit the visual presence of the farmhouse within this wider landscape setting.

5.2.40. Raddle Farmhouse

5.2.41. Designation: Grade II Listed Building. List Entry Number: 1188340.

5.2.42. This asset is located c567m to west of the westernmost boundary of the proposed scheme. It was first listed on 29th October 1987.

5.2.43. The asset is a mid-18th century farmhouse of two storeys with an attic and three bays. It is aligned north-south with its principle elevation facing west. The building is built in red brick, with a plain tile roof and brick ridge stacks. The building is set below and to the west of a north-south aligned ridgeline and is surrounded by planting to its north, west and east. This asset has no direct relationship to the study site, and is wholly separated from it visually by distance, intervening development, planting and relative topographic position.

5.2.44. Woodfields Farmhouse

5.2.45. Designation: Grade II Listed Building. List Entry Number: 1334575.

5.2.46. This asset is located 674m to the east of the easternmost boundary of the proposed scheme. It was first listed on 12th December 1986. The asset is a late 18th century farmhouse with mid-19th and 20th century alterations. The farmhouse is three storeys in height and of three bays. It is constructed of red brick with gauged brick and stone dressings and brick plinth, with a mid-19th century plain tile roof with overhanging eaves. It has large brick gable stacks and an 18th century dentilled eaves band.

5.2.47. The building is set back from the road with its principal facade facing south over a front garden. This elevation forms a prominent focal point from the adjacent road, with expansive views south. Historic out buildings are located to its immediate west. These are arranged around a farmyard which is partially open to the road side and included single and two storey range largely facing onto the yard area. Later modern shedding extending beyond to the west and north.

- 5.2.48. This asset is located on the northern side of the road to Netherseal at an elevated position, with the valley of the Seal Brook located to its east and south. The farm sits amidst large square and sub-recliner fields. It is approached directly of the Netherseael road and the main elevation looks south. The setting of the farm is largely formed by its functional and visual relationship with its associated farm buildings, most notably the range of buildings immediately to its west arranged around a small yard, its front garden plot, and its roadside position. Due to its elevated position the views towards it from the south and south-east also add to the general understanding and appreciation of the farmhouse.
- 5.2.49. The principal heritage significance of the farmhouse is largely derived from its historic, architectural and aesthetic interest as a late 18th century farmhouse, with the buildings south facing principal elevation being of most note. Later alterations have partially reduced its original coherence, but it still retains a strong functional link to a range of farm buildings to its west arranged around a small yard. Beyond this modern, large format sheds have been built to its west and north. These now dominate views towards it from the north and west. These buildings have also altered the functional and visual relationship with the farmhouse and its wider setting. Visually these structures are of a scale and form that contribute little to the significance of the farmhouse itself. Their contribution is largely derived from their associative value as 'agricultural', and therefore demarking the farmhouses functioning. The wider agricultural field systems and the nature and practice of agricultural production has also changed over time although this has altered their historic contribution to the farmhouse they still add to its general character.
- 5.2.50. The contribution of setting to the significance of this asset is therefore principally derived from its immediate relationship with its associated 'historic' farm buildings and farmyard. The farmhouses garden plot to its south, the adjacent road and the fields to its immediate south and east. The wider agricultural landscape also adds to the visual and perceptual understanding of the historic development and function of the farmhouse.
- 5.2.51. The study site is located over half a km to the west in fields on the opposite side of the road to Botany Bay. Although views towards the farmstead are possible views are intercepted by road side hedging, planting to field boundaries and the modern farm shedding to the north and west of the farmhouse. Given the distance between the study site and Woodfields Farmhouse, the study site is not considered to contribute to the significance of the building through forming part of its setting.

5.2.52. Grafton House

- 5.2.53. Designation: unlisted building
- 5.2.54. This asset is located 110m to the north of the northernmost boundary of the study site. It is an unlisted building of local heritage interest. The asset is a mid to late-19th century farmhouse three storeys in height and of three bays. It is constructed of red brick with stone dressings and a hipped plain tile roof with overhanging eaves. It has large brick gable stacks one to side and one to the rear. What appear to be later 20th century extensions are located on its northern and eastern sides.
- 5.2.55. The building is set well back from the road with its principal facade facing south-west over a front garden. The front garden has a lawn with boundary panting along its southern side composed of mature trees planting and

hedging, which screen the house from the road side beyond as approached from the west and east. A small break in the planting immediately to the front of the house provides views south-west between the planting. Historic out buildings are located to its immediate north-east.

- 5.2.56. The principal heritage significance of the house is largely derived from its historic, architectural and aesthetic interest as a mid to late-19th century house, with the buildings south-west facing principal elevation being of most note. Later alterations have partially reduced its original coherence, but it still retains a strong physical presence within its plot.

- 5.2.57. The setting of this asset is principally derived from its immediate relationship with its garden plot, its associated outbuildings and the historic functional relationship it had with the fields to the west, north and east - which historically appear to have been in the same ownership (Edward Warren). The lane to the south also contributes to its setting, which with its garden planting create a sense of separation and largely mask the buildings presence from approaches along the lane. The fields to its immediate south provide views out over the neighbouring parish and adjacent fields but contribute less to the understanding and appreciation of the house itself due to the intervening lane and planting.

- 5.2.58. The proposed Site is located c 110m to the south, at its closest point, in fields on the opposite side of the lane. Intervening boundary planting and a large field in between, alongside the principal views being angled partially away from the closest part of the study site to the south-west mean that key views to and from the asset will retain much of their existing outlook.

6 IMPACT ASSESSMENT

6.1 INTRODUCTION

- 6.1.1. This section assesses the likely impact on the significance of heritage assets identified above as either being directly affected by the proposals or having the potential for their significance to be appreciably affected.

6.2 OUTLINE OF THE PROPOSAL RELEVANT TO THE ASSESSMENT

- 6.2.1. For full details please refer to the accompanying planning documents. But in summary the Proposed Development will comprise the 'Development of a ground mounted solar farm including associated infrastructure: inverters, transformer, DNO cabinet, control room and CCTV cameras.'
- 6.2.2. The current site area is 93 hectares and would produce 49MW of power. The key features of the development are:
- Maximum height of the solar panel to be approx. 2.5m;
 - Mounting posts to be pile driven into the ground by approx. 1.5m;
 - Solar panels to be at angle of around 15 degrees – 25 degrees;
 - Inverter and transformer structures to be included within the site;
 - 2m high wire mesh security fence with CCTV cameras located strategically around the fence line; and
 - The land underneath the panels would likely be laid with a wildflower mix.

6.3 IMPLICATIONS

- 6.3.1. The proposed scheme will alter the baseline conditions within the study site. This will be changed from agricultural fields in arable cultivation to fields containing solar panel units and supporting infrastructure. The units will be located within the existing field structure and rise to an approximate height of 2.5m. Although the change will alter the current landcover conditions from arable cropping to an arrangement of solar panels, and their associated finishes, the proposals will maintain the existing field pattern, and associated boundary treatments and planting. The general arrangement of fields, planting and openness associated with an agricultural landscape will be maintained.
- 6.3.2. The most significant potential effects for designated heritage assets will be discussed below.
- 6.3.3. Due to distance, relative location, the nature of the proposed scheme, intervening built form or planting, or the lack of effect of the proposals on the key aspects of setting that contribute to their significance, the following assets, assessed above, have been identified as requiring no further impact assessment as they will not be subject to any appreciable effect or harm to the contribution of setting to their significance.
- Churchyard walls and gates to All Saints Church
 - Village Hall, Lullington

- Lady Leys Farmhouse
- Woodfields Farmhouse
- Raddle Farmhouse

ASSETS WITHIN THE SITE

- 6.3.4. No designated heritage assets are located within the study site. As a result, the proposed development will not have a direct physical effect on any statutory designated heritage assets within its boundaries.

ASSETS BEYOND THE SITE AND SETTING

- 6.3.5. Only three statutory designated heritage assets and one unlisted building have been identified within 1km of the study site that may have the contribution of setting to their significance effected by the proposals. These are:

- Lullington Village Conservation Area
- The Church of All Saints, a Grade II* Listed Building
- Lady Leys Farmhouse, a Grade II Listed Building, and
- Grafton House, an unlisted building

- 6.3.6. The effect on each asset will be discussed below.

6.3.7. Lullington Village Conservation Area

6.3.8. Assessment of Effect

- 6.3.9. The heritage significance of this asset is principally derived from the historical, architectural and aesthetic value of built form and spaces extending along Main Street, Dag Lane and Edingale Lane, with its focus falling on the church and associated green. The nucleated layout of historic roads, and the consistency of its character and appearance resulting from its mid-19th century development and the use of a traditional palette of materials also adds notably to the character and appearance of the conservation area.
- 6.3.10. The conservation area itself has a relatively intermate, enclosed, inward looking character, as a result of its nucleated layout and the relative position of buildings and planting. Planting and hedging to the village periphery, as well as outlying modern agricultural buildings and later development, help to establish this more discrete, inward looking character to the historic core of the conservation area, but also create a more jagged working edge to the village between which views bleed out into the immediate countryside. As a result, the defining character elements of the conservation area are based on the arrangement of roads and lanes, the consistency of materials used and the interrelationships between the arrangement of built form, spaces and planting. Peripheral views from the edge of settlement across the landscape are of note but are limited, with the conservation statement for Lullington identifying one principal view – the view south-west from the cricket ground.

- 6.3.11. The contribution of setting to the significance of this asset is principally derived from its interface with the surrounding agricultural landscape, and the interrelationship between topographical position, lines of communication (roads and lanes leading into and out of it), built form and planting. Of particular note are the fields adjacent to the immediate approach to the village where they contain point views of the church spire.
- 6.3.12. The study site is located between 305m and 478m to the north of the conservation areas northern most edge. This is physically and visually separated from the village periphery by intervening fields, associated hedging and pockets of tree planting. The edge of development along the conservation areas northern side is mixed, but largely defined by modern agricultural units and their associated functioning uses, interspersed with a few 19th century buildings and more modern housing development. The proposed scheme will introduce a new landcover to the proposed fields, the height of which will be limited to an approximate height of 2.5m. The relative topography of the study site to the village, distance and intervening planting, which will be reinforced will limit the intervisibility of the scheme to the conservation area. Notably, the retention of intervening fields, field boundaries, hedging and associated planting will ensure that the underlying field pattern is retained while giving breathing room for the immediate approach, and associated views into the village to be retained. This will ensure that the conservation areas general character and appearance, and setting, is retained. The only recognisable change will result at a landscape level beyond the core setting of the village conservation area. This will change long views across the intervening landscape towards parts of the village, notably the north-east, by virtue of a change in ground cover from grass/ cropping to solar panels interspersed with grasses. These changes will alter the visual perception of baseline conditions in terms of ground cover but importantly will largely leave unaffected the principle aspects that contribute to the character and appearance of the conservation area. As a result, the proposed scheme will not appreciably reduce the ability to appreciate and understand the historic context and setting of the asset.
- 6.3.13. In conclusion, the positive contribution of setting to the significance of the conservation area is derived from its topographical position, its immediate interface with adjacent fields, planting and associated boundary treatments. Fields beyond the immediate approach to the conservation area add to a general ability to understand and experience its historic landscape context and function but do not define the core values that contribute to the character and appearance of the conservation area – its architectural and historical interest as a predominantly mid-19th century village. The proposed development will, however, change the current baseline conditions on the study site located to the north of the village conservation area. This will partially alter a small number of views to and from the periphery of the conservation areas northern boundary. These views will however be partially screened by intervening planting and proposed additional planting to the boundary of the study site. As a result, the level of effect resulting from the proposed scheme on the contribution of setting to the significance of this asset – its understanding and experience, is considered to be no more than a negligible level of harm to its significance.

6.3.14. The Church of All Saints

6.3.15. Assessment of Effect

- 6.3.16. The principal heritage significance of the church is largely derived from its historic, architectural and aesthetic interest as a 14th century church, much rebuilt. The significance of the church is also derived fundamentally from its historic and continuing role and function within the community, and its historical associative value with preeminent local families. Visually the setting of the church has changed over time as a result of 19th and 20th century development. This has changed the understanding and appreciation of it being a more isolated rural church, but the association with its graveyard retains a sense of seclusion and intimacy that supports a general aesthetic quality in keeping with its current village setting.
- 6.3.17. The contribution of setting to the significance of this asset is principally derived from its immediate relationship with its graveyard, its associated monuments, planting and church wall, and the adjacent villagescape to Main Road and the junction with the road to Edingale. The proposed study site is located to the north of the village with distance, intervening built form and planting ensuring that the immediate setting of the church will be wholly maintained and unaffected by the proposed scheme. As a result, there will be no effect on its immediate character or setting ensuring that its significance as a church is unharmed. Only one aspect of heritage interest has a potential to be affected by the proposed scheme. This relates to medium and long distant views towards the church tower/ spire from the north and north-east. These views will see the underlying field pattern maintained by the proposed scheme. Some views are however likely to encompass elements of the proposed change in ground cover resulting from the introduction of the solar panels. Due to the study site relative topographical position and distance, where views are possible that capture the proposed change in ground cover they will be softened or filtered by intervening planting and sit below the level of the village which will retain its hierarchical position within the landscape with the church spire clearly still visible.
- 6.3.18. In conclusion, the core heritage values that contribute to this asset's significance – its architectural, historical and aesthetic interest as a 14th century church, or the contribution of its immediate setting will not be affected by the proposed development. Some medium to long distance views towards the church tower/ spire from the north and north-east are likely to encompass changes to land cover resulting from the proposed scheme. These will largely be in fore and midground views that will not meaningfully alter the ability to understand and appreciate the church at a landscape level. As a result, the proposed scheme will not appreciably reduce the ability to understand the historic context and setting of this asset or the ability to appreciate it in any meaningful way. It will also only have a very limited influence over its wider landscape setting which will not affect the contribution of setting to the significance of this asset. As a result, the level of effect resulting from the proposed scheme on the contribution of setting to the significance of this asset – its understanding and experience, is considered to be no change, resulting in no harm to its significance.

6.3.19. Lady Leys Farmhouse (Grade II Listed Building)

Assessment of Effect

- 6.3.20. The principal heritage significance of the farmhouse is largely derived from its historic, architectural and aesthetic interest as a late 18th century farmhouse, with the buildings east facing principal elevation being of most note. This assets functional and historic relationship to a range of farm buildings to its rear arranged around a small yard also adds to its interest. Beyond this, modern large format sheds have been built to its rear (west) which now dominate its earlier farmyard setting. These have altered the functional and visual relationship the farmhouse has to its farmyard and wider setting. Visually these structures are of a scale and form that contribute little to the significance of the farmhouse itself.
- 6.3.21. The contribution of setting to the significance of this asset is principally derived from its immediate relationship with its associated 'historic' farm buildings and farmyard, the garden plot to its east and north, and the field and trackway to its immediate east that form its approach. The wider agricultural landscape adds to the visual and perceptual understanding of the farmhouses isolated rural situation at a landscape level.
- 6.3.22. The principle aspects of this assets heritage significance will be retained as the proposed development will not result in a direct physical effect on the fabric of the farmhouse or the associated farm buildings. The lay out of the farmyard will be retained as is, alongside the fields, and their function, to the farm's immediate north, west, east and south. The proposed development will, however, change the baseline conditions of fields further to the north-west of the farmhouse. This will see a change to the ground cover condition within the study site from agricultural fields under arable production to fields containing solar panels and associated infrastructure. This will alter the general character of landcover to the north and north-east of the farmhouse but not the contribution of its more immediate setting to its significance. The key approach and setting to the farmhouse itself is also derived from views towards and away from its principle south-east facing elevation. The views away from this elevation towards Lullington will not be interrupted or experience any change resulting from the proposed scheme. Views back towards it from the road below or further afield from the edge of Lullington conservation area will also not be affected by the proposed scheme.
- 6.3.23. The study site is located approximately 266m to the north-east of this asset, with a large field and associated boundary treatments and planting intervening. The proposed scheme will result in a change to the land cover within these fields, notably in views of the study site as it is approached from the north along the Coton in the Elms to Edingale road. This approach provides medium to long distance views towards the farmstead, which stretches across the ridgeline. The bulk of built form visible is dominated by the modern shedding which swamps the farmhouse itself. The proposed fields are also located at distance from the farmhouse and are set lower down the ridgeline, with boundary hedging and planting intercepting views from the roadside. As a result, views to and from the asset will not be reduced. Importantly, as you progress south along this road, and the farmstead becomes clearer with increased proximity, the study site is bypassed where views open up more clearly to the farmhouse. As a result, there will be no appreciable reduction in the ability to appreciate and understand the historic context and setting of the asset.

- 6.3.24. It is also proposed to strengthen the planting to intervening hedge lines. This will strengthen the rural aesthetics of the approach from the north and soften the presence of the changed ground cover. The proposals will also retain the existing field boundaries and therefore the established historic field pattern associated with the adjacent fields.
- 6.3.25. In conclusion, the core heritage values that contribute to the significance of this asset – its historic, architectural and aesthetic interest as a late 18th century farmhouse, will not be affected by the proposed development. The contribution of setting to the significance of the farmhouse is derived principally from its immediate association with the wider farmstead, its associated historic farm buildings and farmyard, and its front garden - which provides an immediate and discreet setting to the farmhouse. The topographical position of the farmhouse and the approach up to it from the field to the east along its associated trackway also adds to this asset's understanding and appreciation. All these aspects will be retained as is and will therefore be unaffected by the proposed scheme. As a result, the level of effect resulting from the proposed scheme on the contribution of setting to the significance of this asset – its understanding and experience, is considered to be negligible, resulting in no appreciable harm to its significance.
- 6.3.26. **Grafton House (unlisted building)**
- 6.3.27. The principal heritage significance of the house is largely derived from its historic, architectural and aesthetic interest as a mid-19th century house, with the buildings south-west facing principal elevation being of most note. Later alterations have partially reduced its original coherence, but it still retains a strong physical presence within its plot.
- 6.3.28. The contribution of setting to the significance of this asset is principally derived from its immediate relationship with its garden plot, its associated outbuildings and the historic functional relationship it had with the fields to the west, north and east. The lane to the south also contributes to its setting, which, with its garden planting, creates a sense of separation and largely masks the buildings presence from approaches along the lane. The fields to its immediate south provide views out over the neighbouring parish and adjacent fields but contribute less to the understanding and appreciation of the house itself due to the intervening lane and planting.
- 6.3.29. The study site is located c110m to the south, at its closest point. The asset is separated from this by its own garden plot and associated mature tree planting and hedging, alongside the lane to its south and its hedging and a large field immediately opposite. The principal views away and towards the house are angled partially away from the closest part of the study site to the south-west and focused between tree planting that partially screens the asset in views from approaches along the lane and the south. This will ensure that the key views to and from the asset will retain much of their existing outlook, while the immediate setting that provides the core contribution to understanding and appreciating the asset and which contributes to its unlisted significance is retained without change. In more oblique views and views from the first floor it is likely that more distant views of the proposed solar panels will be visible. These will still however be located within the existing field pattern and retain associated field boundary hedging and tree planting. The underlying field pattern will not, therefore, be altered, only the ground cover in between. The prevailing topography will also help ensure that these views

where seen will sit into the landscape and be softened by it. It is also proposed to improve boundary hedging to the study site which will mask further much of the proposed scheme.

- 6.3.30. In conclusion, the significance of the house is largely derived from its historic, architectural and aesthetic interest as a mid-19th century house, which as a non-designated heritage asset, is considered to be low. The contribution of setting to the significance of the house is derived from its immediate garden plot, associated outbuildings and the planting adjacent to the lane on its southern side. These core heritage values – its architectural and historical interest as a mid-19th century house, and the contribution of its immediate setting will not be affected by the proposed development. The only contextual aspect that will be affected will be views/ high-level views away from the building to its south. As a result, the level of effect resulting from the proposed scheme on the contribution of setting to the significance of this asset – its understanding and experience, is considered to be low, resulting in negligible to slight harm to its significance as a non-designated heritage asset.

7 CONCLUSION AND RECOMMENDATIONS

- 7.1.1. The NPPF states that in determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made to their significance by their setting. This HS has identified those heritage assets that have a potential to be materially affected by the proposed development. The HS has also assessed the contribution of setting to the heritage assets identified, and the sensitivity of these assets to development on the application site.
- 7.1.2. Based on this assessment it is concluded that no heritage assets will be directly affected physically by the proposed development, and that only three designated assets have any potential for the contribution of setting to their significance to be affected. These are Lullington village conservation area, the Church of All Saints, and Lady Leys Farmhouse. It has been concluded that there will be no harm to the contribution of setting to the significance of the Church of All Saints, and negligible to no appreciable harm to the contribution of setting to the significance of Lady Leys Farmhouse and Lullington village conservation area.
- 7.1.3. One building of local interest has been identified that will experience a change to the construction of setting to its significance. This is Grafton House an unlisted building located on the norther side of the study site. This is likely to experience a low (to medium) level of effect on the contribution of setting to its significance resulting in a negligible to slight level of harm to the contribution of setting to its significance.
- 7.1.4. It is recommended that the level of effect on the contribution of setting to the significance of this asset can be reduced by consideration of the following:
- Enhancing the character to the existing boundary hedging to the northern most boundary of the study site and introducing some additional tree planting in strategic locations that push views further south and west.
- 7.1.5. Should enhanced boundary hedging and planting be introduced to the scheme boundary this will reduce the level of effect too low to negligible, resulting in no appreciable harm to the contribution of setting to its significance.
- 7.1.6. In summary, the proposed development is believed to achieve a balance between delivering strategic green energy production whilst also ensuring that heritage assets, and the key heritage values that contribute to their significance are retained largely unharmed. Where a level of harm is unavoidable, as in the case of Grafton House, the level of harm has been limited to a change in setting to a non-designated building. Although this will result in a low to negligible level of effect on the contribution of setting to the significance of this asset (gained from the landscape to its south), the principal aspects of setting that contribute to its significance – its immediate interrelationship with its garden plot, associated out buildings, panting and the adjacent lane, as well as the quantum of agricultural land to its north, west and east will be retained. The proposed development will also not affect the principal architectural, historical and aesthetic values embedded in the physical form and structure of the house and its related out buildings. As a result, it is concluded that the proposed development will result in minimal harm to the significance of a non-designated house as well as identified

designated heritage assets. It is therefore concluded that the proposal is in accordance with relevant national and local heritage policy and legislation.

8 REFERENCES

PUBLISHED AND DOCUMENTARY SOURCES

British Standard, 2013 Guide to the Conservation of Historic Buildings 7913:2013.

Bate, S; Savage, R; Williamson, T. 2018. Humphry Repton in Norfolk. The Norfolk Garden Trust.

Brunskill, R.W. 2007. Traditional Farm Buildings of Britain and their Conservation. Yale University press.

ClfA [Chartered Institute for Archaeologists] Dec 2014a, *Standards and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment*, Reading.

ClfA [Chartered Institute for Archaeologists] Dec 2014b, *Standards and guidance for historic environment desk-based assessment*, Reading.

ClfA [Chartered Institute for Archaeologists] Dec 2014c, *Standards and guidance for the archaeological investigation and recording of standing buildings or structures*, Reading.

Department for Digital, Culture, Media & Sport, 2010, Principles of selection for listing buildings.

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

Historic England, 2017b, *Conservation principles, policies and guidance. Consultation Draft*. Swindon.

Humphery-Smith C, 1984, *The Phillimore Atlas and Index of Parish Registers*.

Landscape Institute and Institute of Environmental Management and Assessment, 2013, *Guidelines for Landscape and Visual Impact Assessment 3rd Edition* (GLVIA3).

MHCLG [Ministry of Housing, Communities and Local Government], July 2018 National Planning Policy Framework.

MHCLG [Ministry of Housing, Communities and Local Government], November 2016 Conserving and Enhancing the Historic Environment: Planning Practice Guide.

OTHER SOURCES

Historic England designation data

Internet – web-published sources

British Library and National Archives

Aerial view of the site © Google

CARTOGRAPHIC SOURCES

1797 map by William Faden

1839 Bradwell Tithe Map

1884 (Published) 1882 to 1883 (Surveyed) OS Six-inch map

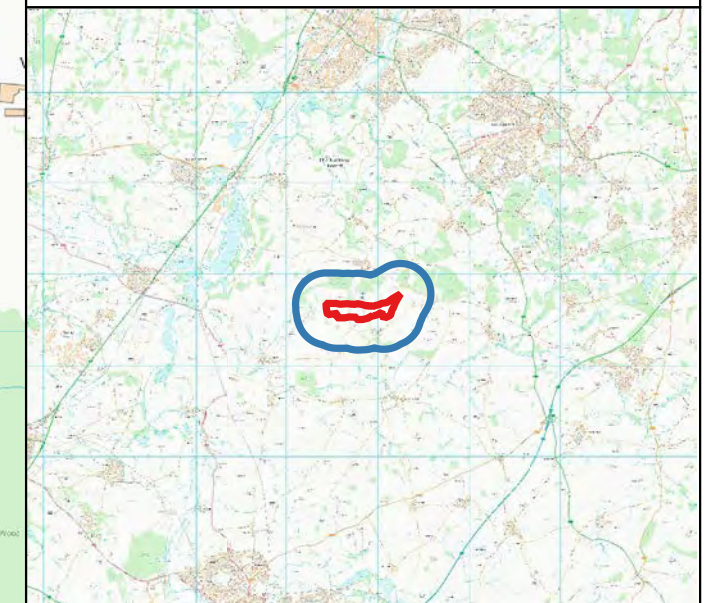
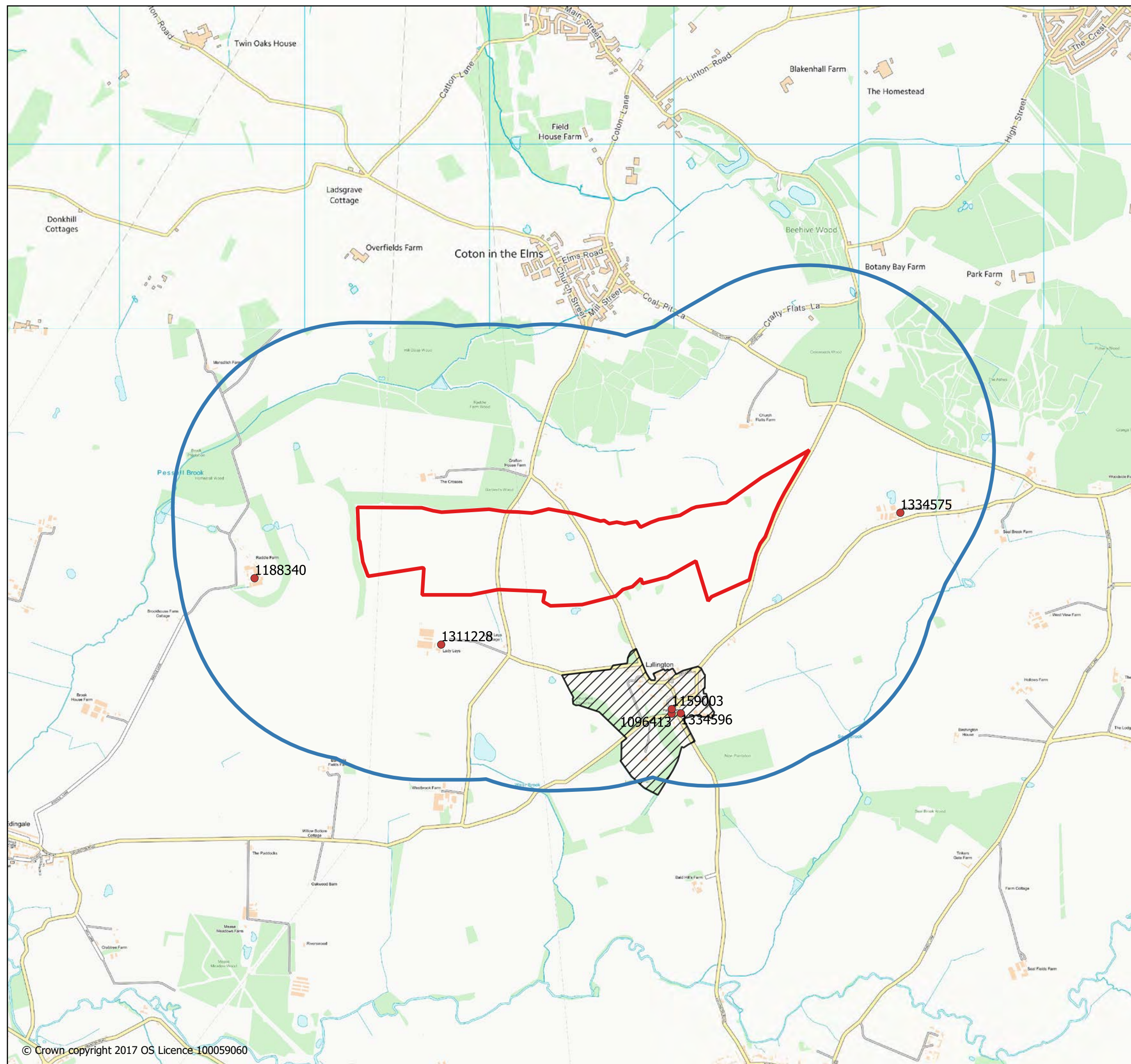
1906 (Published) (Revised 1904) OS Six-inch map

1928 (Published) (Revised 1926) OS Six-inch map

1950 (Published) (Revised 1946)

Aerial photograph of the Site © Google Maps

FIGURES



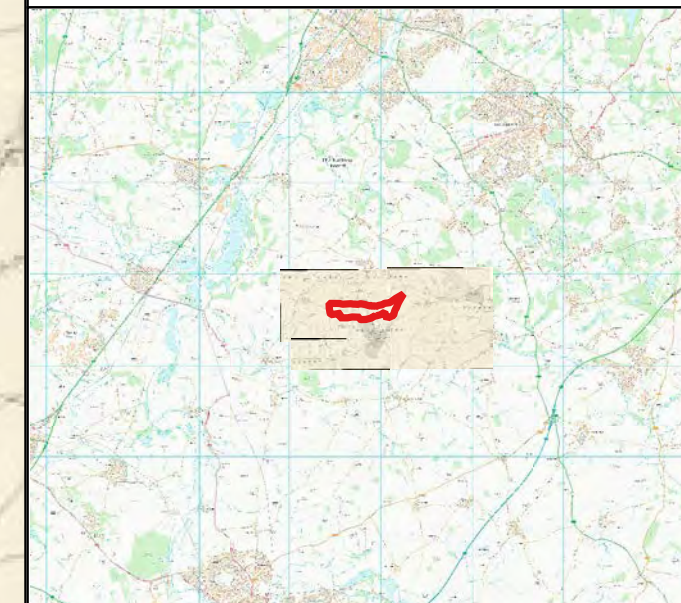
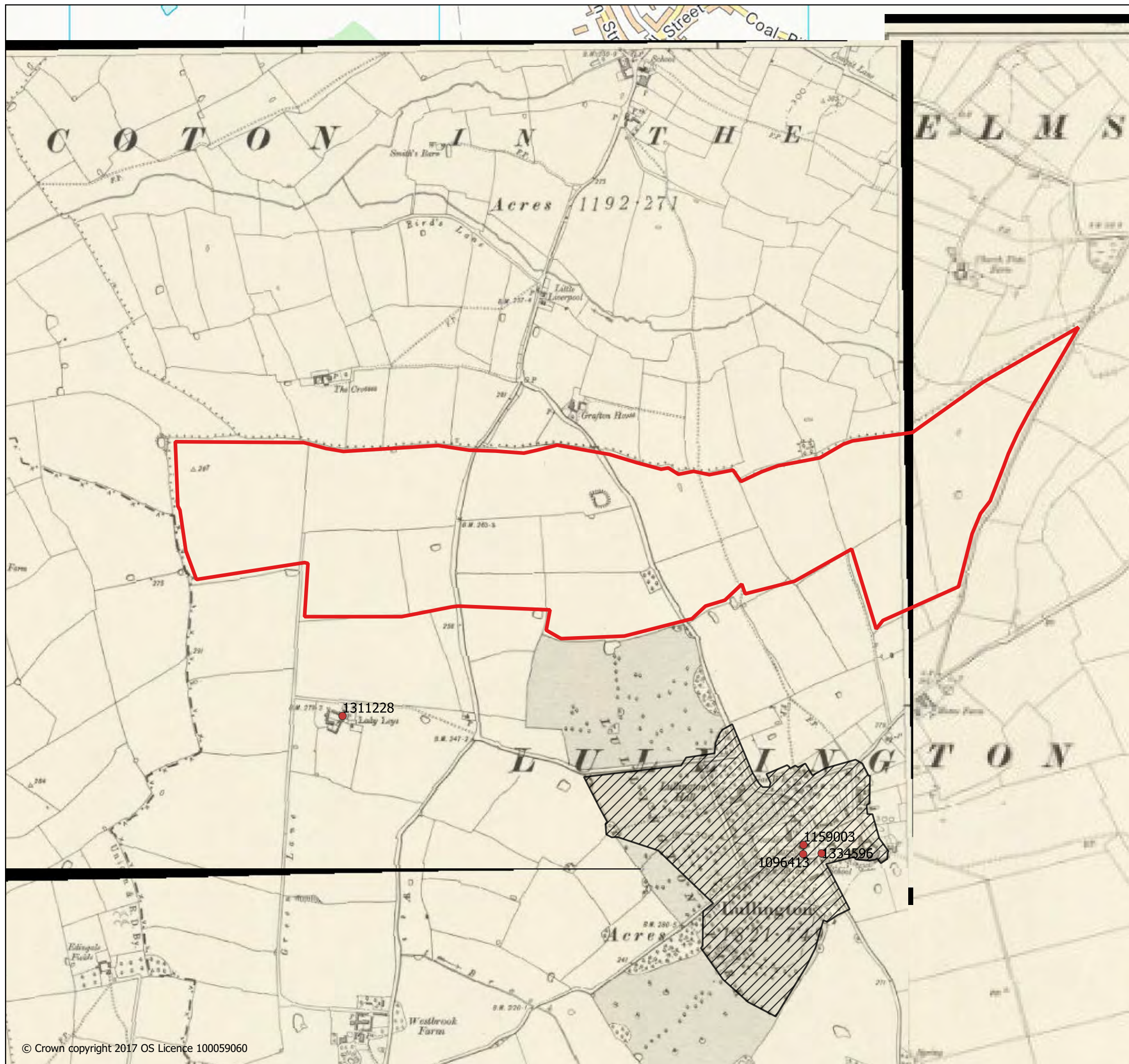
Key

- Listed Buildings
- Lullington Conservation Area
- 1 km Search Area
- Site Boundary



0 0.5 1 1.5 km

Figure 1. The study site and search area with the location of designated heritage assets within the search area..



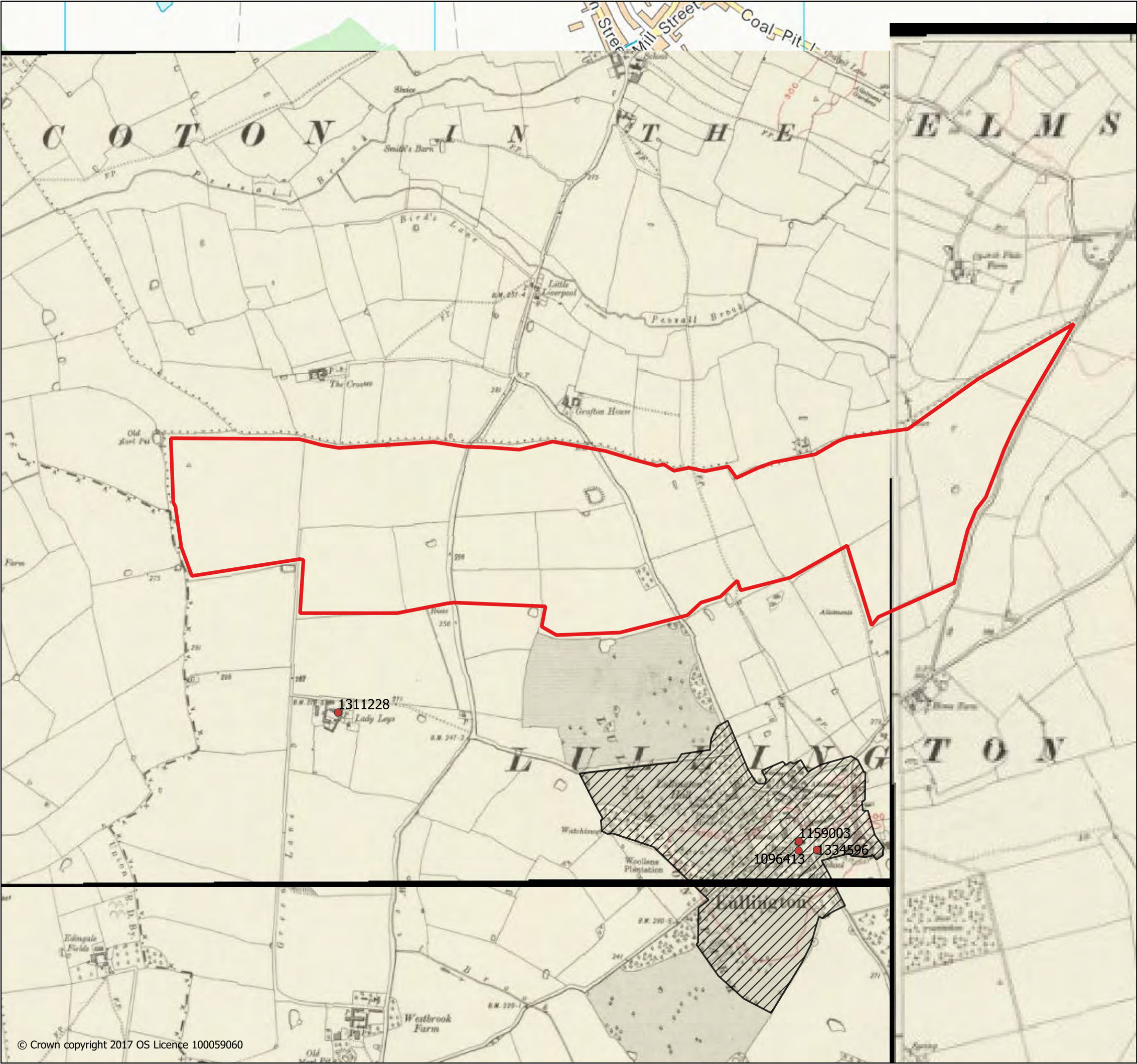
Key

- Listed Buildings
- ▨ Lullington Conservation Area
- Site Boundary



200 0 200 400 600 m

Figure 3. 1902 OS Map and Study Site.





Planning + Development | Design Studio | Archaeology + Heritage



Key

-  Listed Buildings
-  Lullington Conservation Area
-  Site Boundary



N

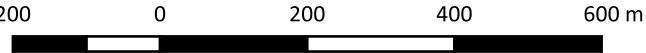


Figure 4. 1902 OS Map and Study Site.



Key

- Listed Buildings
- ▨ Lullington Conservation Area
- Site Boundary



200 0 200 400 600 m

Figure 5. Aerial Photograph of the Study Site
© Google

Figure 6: View north-east of the 'Green' in Lullington



Figure 7: View north along Main Street, Lullington



Figure 8: View south-west along Dag Lane, Lullington



Figure 9: View north towards the study site from the northern side of Lullington



Figure 10: View south-west from the southern study site boundary to Lullington village



Figure 11: View north-west of the Church of All Saints and its boundary walling



Figure 12: View east to the village hall



Figure 13: View west to Lady Leys from the Edingale to Coton in the Elms Road



Figure 14: View north-east to Woodfields Farm



Figure 15: View north-west to Woodfields Farm



Figure 16: View east towards Raddle Farm



Figure 17: View north-east to Grafton House from the lane





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Appendix 2: HRA Screening Response



Lullington Solar Farm

Report to Inform Habitats Regulations Assessment Stage 1 and Stage 2

Lullington Solar Park Limited

November 2020

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Issue 1	November 2020	FINAL
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Glossary

ALSE	Assessment of Likely Significant Effects
CEMP	Construction Environment Management Plan
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
CJEU	Court of Justice of the European Union
DEFRA	Department for the Environment, Food and Rural Affairs
EC	European Commission
GPP	Guidance for Pollution Prevention
Habitats Regulations	Conservation of Habitats and Species Regulations 2017
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Over-riding Public Interest
IRZ	Impact Risk Zone
LSE	Likely Significant Effect
LWS	Local Wildlife Site
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
PPG	Pollution Prevention Guidelines
SAC	Special Area of Conservation
SDDC	South Derbyshire District Council
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest



Executive Summary

Contents	Summary
Application site location and description	The site is located on land north of Lullington, Derbyshire and is centred at Ordnance Survey National Grid Reference SK 24750 13763.
Proposed Development	The development proposal is for the installation of a ground mounted solar farm.
Scope of this Assessment	This report assesses the pathways to LSE (HRA Stage 1: Screening) of the proposed development upon relevant designated Natura 2000 sites and subsequently assesses whether these would result in an adverse effect on the integrity of these sites (HRA Stage 2: Appropriate Assessment). This is a submission to inform the Competent Authority's (SDDC) Habitats Regulations Assessment.
Results of Stage 1: Screening	The results from the Stage 1: Screening Assessment found that there was one potential pathway to LSE requiring Stage 2: Appropriate Assessment. This related to the potential for sediments and pollutants released during construction to affect a tributary of the River Mease, which is designated as a SAC.
Results of Stage 2: Appropriate Assessment	The results from the Stage 2 Appropriate Assessment found that with mitigation, no impact on integrity (alone or in-combination) of the River Mease SAC is predicted. The mitigation proposed could be described in detail within a CEMP for the project, which could be secured by planning condition. The mitigation measures in the CEMP would need to include as a minimum: • Installation of silt fencing; • Damping of haul roads; • Covering of friable materials whenever possible; • Covering of lorries transporting friable materials when moving around the site; • Risk assessments and toolbox talks for contractors doing any refuelling activities; • Bunding of refuelling areas; • Emergency incident strategy; • Spill kits will be available on site at all times; • Signage will be on site in contractors compounds relating to sensitivity of the nearby waterbody which leads to the River Mease SAC; and • A waste disposal plan will be in place for the site, detailing where all waste generated will be stored prior to removal.
Conclusion	The 'Competent Authority' (the Planning Inspector), is considered not to require further assessment under the Habitats Regulations, and the proposed development can proceed without Stage 3 and Stage 4 being completed.

1.0 Introduction

1.1 Background

WYG was commissioned by Lullington Solar Par Limited on 13th October 2020 to prepare a report to inform Stage 1: Screening and Stage 2: Appropriate Assessment of a Habitats Regulations Assessment (HRA).

This report has been prepared by WYG Principal Ecologist Jonathan Jackson. The conditions pertinent to the report are provided in Appendix A.

1.2 Application Site Location

The site is located on land north of Lullington, Derbyshire and is centred at Ordnance Survey National Grid Reference SK 24750 13763 (Figure 1). The site is approximately 90 ha and comprises predominantly of arable fields with some improved grassland fields, associated ponds, hedgerows and field boundaries. A small block of woodland is also present within the site boundary.

The site is bordered partially by Garland Woods to the north and west and further arable and improved grassland fields to the north, south and east. The wider area consists largely of agricultural land, small settlements and several woodlands including Coton Wood 0.4 km to the north, the village of Lullington 0.5 km to the south, agricultural land to the east and Homestall Wood Local Wildlife Site (LWS) 0.4 km to the west.

1.3 Development Proposals

The development proposal is for the installation of a ground mounted solar farm. A draft masterplan for the development proposals is provided in Appendix B.

1.4 Requirements for the HRA

The requirement for an HRA is established through Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, hereby referred to as the 'Habitats Directive', in Articles 6(3) and 6(4). The Habitats Directive is transposed into national legislation by the Conservation of Habitats and Species Regulations 2017. These are hereafter referred to as the 'Habitats Regulations'.

Under Regulation 63, any project which is likely to have a significant effect on a European site (either alone or in-combination with other projects) and is not directly connected with, or necessary for the management of the site, must be subject to an HRA to determine the implications for the site in view of its conservation objectives. This is determined during the Stage 1: Screening Assessment of an HRA (see below).

A Stage 2: Appropriate Assessment then needs to be carried out in respect of any plan or project which:



- either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the European network; and
- is not directly connected with the management of the site for nature conservation.

The term European site is defined fully in Regulation 8 of the Habitats Regulations and includes:

- Special Areas of Conservation (SACs);
- candidate and proposed SACs;
- Special Protection Areas (SPAs);
- potential SPAs;
- proposed Wetlands of International Importance designated or proposed for their wetland features under the auspices of the Convention of Wetlands of International Importance (commonly referred to as 'Ramsar sites'); and
- sites identified for Natura 2000 compensatory measures.

The final two categories are afforded the same level of protection as SACs and SPAs as a matter of Government policy, and the assessment provisions of the Habitats Regulations are applied to them (Natural England, 2017).

2.0 Assessment Methodology

2.1 Assessment Guidance

The Habitats Directive and Regulations do not specify how HRA should be undertaken. In undertaking this HRA, the process we have adopted is that recommended in official European Council (EC) guidance (EC, 2001). In this report, our Stage 1: Screening found that LSE were possible and so a Stage 2: Appropriate Assessment was required. These two stages form the first of four HRA stages, as described below:

- **Stage 1: Screening** – the process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant. This is also known as an 'assessment of likely significant affects (ALSE)';
- **Stage 2: Appropriate assessment** – the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in-combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts (in accordance with guidance following the recent decision by the CJEU; *People Over Wind and Sweetman v Coillte Teoranta (C-323/17)* regarding application of embedded mitigation at Stage 1 or Stage 2 of an HRA (Freeths, 2018);
- **Stage 3: Assessment of alternative solutions** – the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site; and
- **Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain** – an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Over-riding Public Interest (IROPI), it is deemed that



the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of IROPI).

The Stage 1 Screening Assessment comprises four steps, as described below:

- **Step 1.** Determining whether the project or plan is directly connected with or necessary to the management of the Natura 2000 site(s);
- **Step 2.** Describing the project or plan and the description and characterisation of other projects or plans that in-combination have the potential for having significant effects on the Natura 2000 site(s);
- **Step 3.** Identifying the potential effects on the Natura 2000 site(s); and
- **Step 4.** Assessing the significance of any effects on the Natura 2000 site(s).

The Stage 2: Appropriate Assessment should identify the effects of those plans or projects on qualifying features of the European sites in relation to the Conservation Objectives of those sites and determine whether these effects will result in an adverse effect on the integrity of the designated site. Only where the decision maker (the Competent Authority – in this case South Derbyshire District Council (SDDC)), is satisfied that there will be no adverse effect on integrity, or where there are imperative reasons of overriding public interest, can the plan or project be approved.

3.0 Stage 1: Screening

Projects may have spatial implications which can have further reaching effects than those predicted to fall within the development footprint. Specifically, it is recognised that the distance between a proposed development and a designated site is not a definitive determinant as to the likelihood or severity of an impact occurring. Site variables such as prevailing wind conditions, surface and groundwater flow direction will all have an influence on the relative distance at which an impact can occur.

Additionally, the mobile nature of qualifying interest species must also be considered. This is because adverse effect on the qualifying species of a site, can occur even if they are not present within the application site. For instance, fish may migrate through one area to breed at another, but both may not be within a site for which they are designated.

3.1 Step 1 – Determining whether the development proposals are directly connected with or necessary to the management of the internationally designated site(s)

The development proposals are not connected with and are not necessary for the management of any internationally designated sites, although they do have the potential to affect them.

3.2 Step 2 – Identification of internationally designated sites that may be affected and approach taken to identifying other plans or projects that could lead to in-combination effects

The site is located 1.78 km south of the River Mease SAC, as shown on Figure 2. As established during the Ecological Appraisal of the site in 2019 (WYG, 019), a search using MAGIC (DEFRA's interactive, web-based database for statutory designations) showed that the site is within the Impact Risk Zone (IRZ) for the River Mease SSSI. The same area covered by the River Mease SAC also forms the River Mease Site of Special Scientific Interest (SSSI).

Furthermore, the IRZ identifies that all Wind and Solar Energy Projects within it must be assessed for their potential to affect the SSSI. As both the River Mease SAC and River Mease SSSI are both designated for the species and habitats that the river supports, the presence of the River Mease SSSI IRZ has led to the River Mease SAC being screened in to this assessment. The potential pathway to LSE from the development proposals, is formed by waterbodies close the site that are linked to the River Mease possibly being affected by surface water flow impacts.

The qualifying and citation features for the River Mease SAC and River Mease SSSI have been provided in full in Appendix C and Appendix D respectively, but in summary for the SAC they comprise:

- 3260 Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation.
- 1149 Spined loach *Cobitis taenia*.
- 1163 Bullhead *Cottus gobio*.
- 1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*.
- 1355 Otter *Lutra lutra*.

There are no additional European designated sites within 10 km of the site and no potential pathways to LSE with a zone of influence beyond this distance. As a result, the only site screened into this assessment is the River Mease SAC.

3.3 Approach taken to identifying Other Plans or Projects that could lead to In-combination Effects

Establishing whether a project level effect can act in-combination is dependent on whether the effect is still possible following the application of mitigation. For example, a drainage strategy may completely eliminate the potential for surface water run-off from affecting any nearby watercourses, in which case it cannot contribute to any effect in-combination. Or, there are mitigation strategies in place which are designed to eliminate the need to establish in-combination effects as they act cumulatively e.g. payments to recreation mitigation strategies.

For this project, mitigation is considered to remove the potential for any effects on the River Mease SAC and therefore none will act cumulatively with other plans or projects. This conclusion is justified in more detail in Section 4.0 and as such no search for other plans and projects was undertaken.



3.4 Step 3 – Identifying the Potential Effects on Internationally Designated site(s)

The potential pathways to LSE were identified after a review of the following:

- The qualifying features of the River Mease SAC (see Appendix C);
- The River Mease SAC Conservation Objectives (Natural England, 2018);
- The River Mease SAC Conservation Objectives Supplementary Advice on Conserving and Restoring Site Features (Natural England, 2016); and
- The Site Improvement Plan for the River Mease SAC (Natural England, 2014).

This found that there was only one potential pathway to LSE requiring assessment. This related to the potential for sediments and pollutants released *during construction* to affect a tributary of the River Mease. This was not considered possible during the operational phase as there would be a negligible increase in impermeable surfaces that could alter the hydrology of the area.

No other potential pathways were identified and this report does not discuss potential pathways where there is no tangible risk of the effect occurring as a result of the development proposals. For instance, there is a significant distance (1.78 km) between the tributaries of the River Mease that could be affected by the proposals and the River Mease SAC. Therefore, none of the habitats within these tributaries are considered necessary to maintaining the integrity of population of mobile qualifying species from the River Mease SAC e.g. otter *Lutra lutra*. As a result, potential pathways such as disturbance or habitat loss do not require assessment.

3.4.1 Impacts of surface water pollution during construction: Alone and In-combination

Within the boundary of the site and the surrounding 50 m there are numerous small drainage ditches. These are shown on in the Phase 1 habitat survey results provided in Appendix E. These survey data are taken from the Ecological Appraisal report completed of the site in August 2019 (WYG, 2019). The August 2019 survey covered a redline boundary larger than the redline for the development proposals for which this report has been prepared.

These watercourses flow southwards and join with other larger tributaries of the River Mease. It is therefore possible that activities during the construction phase could affect the qualifying features of the River Mease SAC via runoff. This could occur due to contamination of surface water run-off caused by:

- Deposition of fugitive dust into watercourses;
- Run-off from stored friable materials e.g. topsoil;
- Pollution events caused by accidental releases of chemicals or fuel; and
- Improper waste disposal.

Measures to mitigate for these impacts, should be included within a Construction Environment Management Plan (CEMP) secured and approved by planning condition prior to commencement of construction on the application site. This would comprise mitigation. Therefore, in accordance with the HRA methodology (see Section 2.1), any potential pathway to LSE that requires mitigation must be taken forward to Stage 2: Appropriate Assessment.



This is considered to apply both alone and in-combination. However, with the proposed mitigation, no effect on the River Mease SAC is predicted and therefore the pathway to LSE has no potential to act in-combination with other plans or projects. As a result, no search for other plans or projects has been completed.

Pollution events affecting water quality during construction could occur which would result in LSE on qualifying species and habitats; AA is therefore required. This pathway has therefore been taken forward to Stage 2: Appropriate Assessment.

3.5 Step 4 – Assessing the significance of any effects on the Natura 2000 site(s)

The findings of the Stage 1: Screening show that the only potential pathway to LSE that could result in impacts on the River Mease is via surface water pollution, alone and in-combination.

4.0 Stage 2: Appropriate Assessment

The following section discusses the potential pathway to LSE that could result in impacts on the integrity of the River Mease SAC identified at Stage 1: Screening.

4.1 Impacts of surface water pollution during construction: Alone and In-combination

As discussed in Section 3.4.1, the only potential pathways to LSE identified was in the form of surface water pollution, alone and in-combination. It was therefore recommended that mitigation in the form of avoidance for these effects could be secured within a CEMP. The measures that are considered necessary to completely avoid all possible effects on watercourses leading to the River Mease comprise:

- Avoidance of working within 20 m of flowing watercourses where possible;
- Installation of silt fencing between works and flowing watercourses where works are within 20 m of flowing watercourses;
- Damping of haul roads to minimise releases of fugitive dust;
- Covering of friable materials whenever possible;
- Covering of lorries transporting friable materials when moving around the site;
- Risk assessments and toolbox talks for contractors doing any refuelling activities;
- Bunding of refuelling areas;
- Emergency incident strategy;
- Spill kits will be available on site at all times;
- Signage will be on site in contractors compounds relating to sensitivity of the nearby waterbody which leads to the River Mease SAC; and
- A waste disposal plan will be in place for the site, detailing where all waste generated will be stored prior to removal.

These measures have been recommended based on a review of the following Pollution Prevention Guidelines (PPG) and Guidance for Pollution Prevention (GPP) which although superseded, are considered to provide useful advice (available from Negregs, undated):



- PPG 1: Understanding your environmental responsibilities – good environmental practices;
- PPG 6: Working at construction and demolition sites;
- PPG 7: Safe storage – The safe operation of refuelling facilities;
- GPP 5: Works and maintenance in or near water;
- GPP 21: Pollution incident response planning; and
- GPP 22: Dealing with spills.

With the application of this mitigation, and adherence to a detailed CEMP, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination.

5.0 Summary

The Stage 2: Appropriate Assessment found that there is no potential for the pathways identified at Stage 1 to affect the integrity of any European site. As such, it is considered that SDDC as the Competent Authority can permit the proposed development without the requirement to complete Stage 3 or Stage 4 of an HRA.



6.0 References

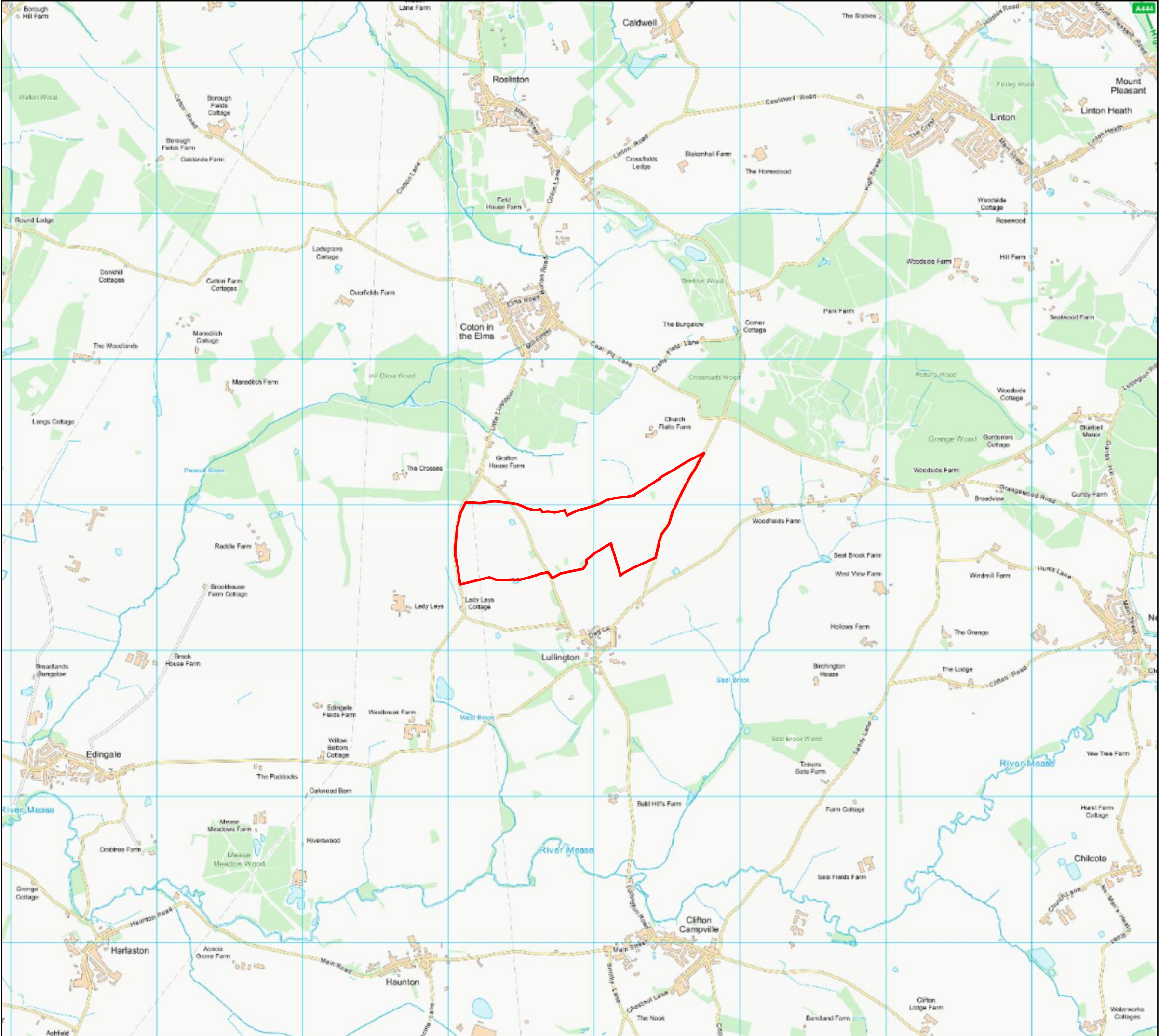
- EC, (2001), *Assessment of Plans and Projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. [online]
http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf. Accessed October 2020.
- Freeths, (2018), *Environmental Bulletin – Spring 2018: HABITAT REGULATIONS ASSESSMENTS: NO MORE SCREENING OUT WITH MITIGATION MEASURES? A SUMMARY OF THE RECENT CASE OF PEOPLE OVER WIND AND SWEETMAN (C-323/17)*, [online] Available at <http://www.freeths.co.uk/2018/04/19/environmental-bulletin-spring-2018/>, Accessed October 2020.
- JNCC, (2015), *River Mease SAC: NATURA 2000 – STANDARD DATA FORM*, [online] Available at <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030258.pdf>, accessed November 2020.
- IAQM, (2014), *Guidance on the assessment of dust from demolition and construction*, [online] Available at http://iaqm.co.uk/wp-content/uploads/guidance/iaqm_guidance_report_draft1.4.pdf, Accessed October 2020.
- Natural England, (2014), *Site Improvement Plan: River Mease*, [online] Available at <http://publications.naturalengland.org.uk/file/6448011194400768>, Accessed November 2020.
- Natural England, (2016), *River Mease SAC Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features*, [online] Available at <http://publications.naturalengland.org.uk/file/5642992359047168>, Accessed October 2020.
- Natural England, (2017), *Natural England Standard: Habitats Regulations Assessment (HRA Standard)*, [online] Available at <http://publications.naturalengland.org.uk/publication/8740045>, Accessed October 2020.
- Natural England, (2018), *River Mease SAC Conservation Objectives*, [online] Available at <http://publications.naturalengland.org.uk/file/6012812623347712>, Accessed October 2020.
- Net Regs, (undated), *Guidance for Pollution Prevention (GPPs) – Full list*, [online] Available at <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>, Accessed October 2020.
- WYG, (2019), *Ecological Appraisal: Lullington Solar Farm*, Report on behalf of Island Green Power UK Limited, Project Number A114441.



Figures

Figure 1: Site location plan

Figure 2: Location of European Designated Sites screened in to this assessment



Rev	Date	Notes
A	29/10/20	Initial map production

Legend

Site boundary

0 250 500 1,000 Metres



Site Location Plan

Lullington Solar Farm
Lullington Solar Park Limited

Scale at A3: 1:25,000	Project No: B023978	Drawing No: Figure 1	Revision: A
Drawn by: Ben Blowers		Drawn date: 29/10/2020	Approved by: Jonathan Jackson

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Appendix A: Report Conditions



REPORT CONDITIONS

This Report has been prepared using reasonable skill and care for the sole benefit of Lullington Solar Park Limited ("the Client") for the proposed uses stated in the report by WYG Environment Planning Transport Limited ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

No liability is accepted or warranty given for; unconfirmed data, third party documents and information supplied to WYG or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. WYG does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.



Appendix B: Indicative Masterplan



Appendix C: Qualifying Features of the River Mease SAC



Qualifying Features of the River Mease SAC (JNCC, 2015)

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

3260 Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation

Annex II species that are a primary reason for selection of this site

1149 Spined loach *Cobitis taenia*

The River Mease is a good example of a riverine population of spined loach *Cobitis taenia*. It is a small tributary of the River Trent and has retained a reasonable degree of channel diversity compared to other similar rivers containing spined loach populations. It has extensive beds of submerged plants along much of its length which, together with its relatively sandy sediments (as opposed to cohesive mud) provides good habitat opportunities for the species.

1163 Bullhead *Cottus gobio*

The Mease is an example of bullhead *Cottus gobio* populations in the rivers of central England. Bed sediments are generally not as coarse as other sites selected for the species, reflecting the nature of many rivers in this geographical area, but are suitable in patches due to the river's retained sinuosity. The patchy cover from submerged macrophytes is also important for the species.

Annex II species present as a qualifying feature, but not a primary reason for site selection

1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*

1355 Otter *Lutra lutra*



Appendix D: Citation Features of the River Mease SSSI

COUNTY: Leicestershire
Staffordshire
Derbyshire

SITE NAME: River Mease

DISTRICTS: North-west Leicestershire
Lichfield
South Derbyshire

STATUS: **Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)**

Local Planning Authorities: North-west Leicestershire District Council
Lichfield District Council
South Derbyshire District Council

National Grid Reference: SK360144 - SK195148 **Area:** 21.86 (ha) 54.02 (ac)

Ordnance Survey Sheet: 1:50,000: 128 **1:10,000:** SK21SE SK31SW
SK31SE SK11SE

Date Notified (under 1981 Act): 16 August 2000

Reasons for notification

The River Mease represents a lowland clay river supporting nationally significant populations of spined loach *Cobitis taenia* and bullhead *Cottus gobio*, two internationally notable species of native freshwater fish with a restricted distribution in England.

Description

Rising at 130 metres above sea level in the Coal Measures of north-west Leicestershire, the River Mease flows approximately 25 kilometres westwards across a largely rural and agricultural landscape to its confluence with the River Trent at Croxall. The river forms an eastern tributary of the Trent and flows throughout its course across alluvial soils overlying bands of Sherwood Sandstone and Mercia Mudstone. Of special interest are the resident populations of two of the UK's smallest freshwater fish species, spined loach *Cobitis taenia* and bullhead *Cottus gobio*, which occur in association with a diverse freshwater fish community. As a relatively un-modified lowland river, the River Mease contains a diverse range of physical in-channel features, including riffles, pools, slacks, vegetated channel margins and bankside tree cover, which provide the conditions necessary to sustain populations of both spined loach and bullhead.

The head of the site includes the lower reaches of the Gilwiskaw Brook which flows along a steep gradient across bands of interbedded mudstones and sandstones. Due to the fast-flowing nature of the river, aquatic vegetation is sparse and marginal vegetation restricted to stands of floating sweet-grass *Glyceria fluitans* but these sections provide valuable habitat for bullhead *Cottus gobio*, a bottom-dwelling native fish which favours clean coarse gravels for spawning and is often found where flows are consistently strong and sediment deposition minimal. Populations of bullhead also occur in the lower reaches of the Mease where river substrates are finer but woody debris lying within the river channel becomes more important in providing suitable breeding habitat.

contd/

Below Snarestone the descent becomes more gradual and the river enters a broad lowland floodplain. The slow-moving river meanders tightly across floodplain deposits, occasionally exposing underlying sandstones and fluvial sands and gravels. These middle reaches of the River Mease provide excellent habitat for a nationally significant population of spined loach *Cobitis taenia*. Confined in its UK range to a limited number of catchments in central and eastern England, this largely sedentary fish is closely associated with the open sandy substrates of the river bed which act as important feeding and spawning grounds. As a small fish, refuges from predators and strong river flows are very important and this is provided by aquatic and marginal vegetation within the river channel. Stands of marginal vegetation are typically dominated by common club-rush *Schoenoplectus lacustris*, *Glyceria fluitans*, reed canary-grass *Phalaris arundinacea*, branched bur-reed *Sparganium erectum*, greater pond sedge *Carex riparia* and bulrush *Typha latifolia*. Submerged aquatic vegetation becomes more varied on the lower reaches of the river with river water-crowfoot *Ranunculus fluitans*, common water-crowfoot *R. aquatilis*, blunt-leaved pondweed *Potamogeton obtusifolius*, fennel pondweed *P. pectinatus*, arrowhead *Sagittaria sagittifolia* and yellow water-lily *Nuphar lutea* becoming increasingly frequent.

Bankside tree cover is very variable but an important feature of the river channel as submerged root systems of larger trees provide important in-channel cover for fish and provide woody debris to the watercourse in the form of fallen branches. In many places the river is largely open, flanked by semi-improved pasture and arable land adjacent to the bank edge. Where tree cover is present, banks are frequently lined with alder *Alnus glutinosa*, ash *Fraxinus excelsior* and various species of willow *Salix* spp. including good numbers of large pollarded crack willow *Salix fragilis*. Some sections of bank are flanked by dense scrub dominated by hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

Additional interest is provided by populations of freshwater white-clawed crayfish *Austropotamobius pallipes* and otter *Lutra lutra*, both animals with a restricted distribution within the East Midlands and which receive special legal protection.

Other Information

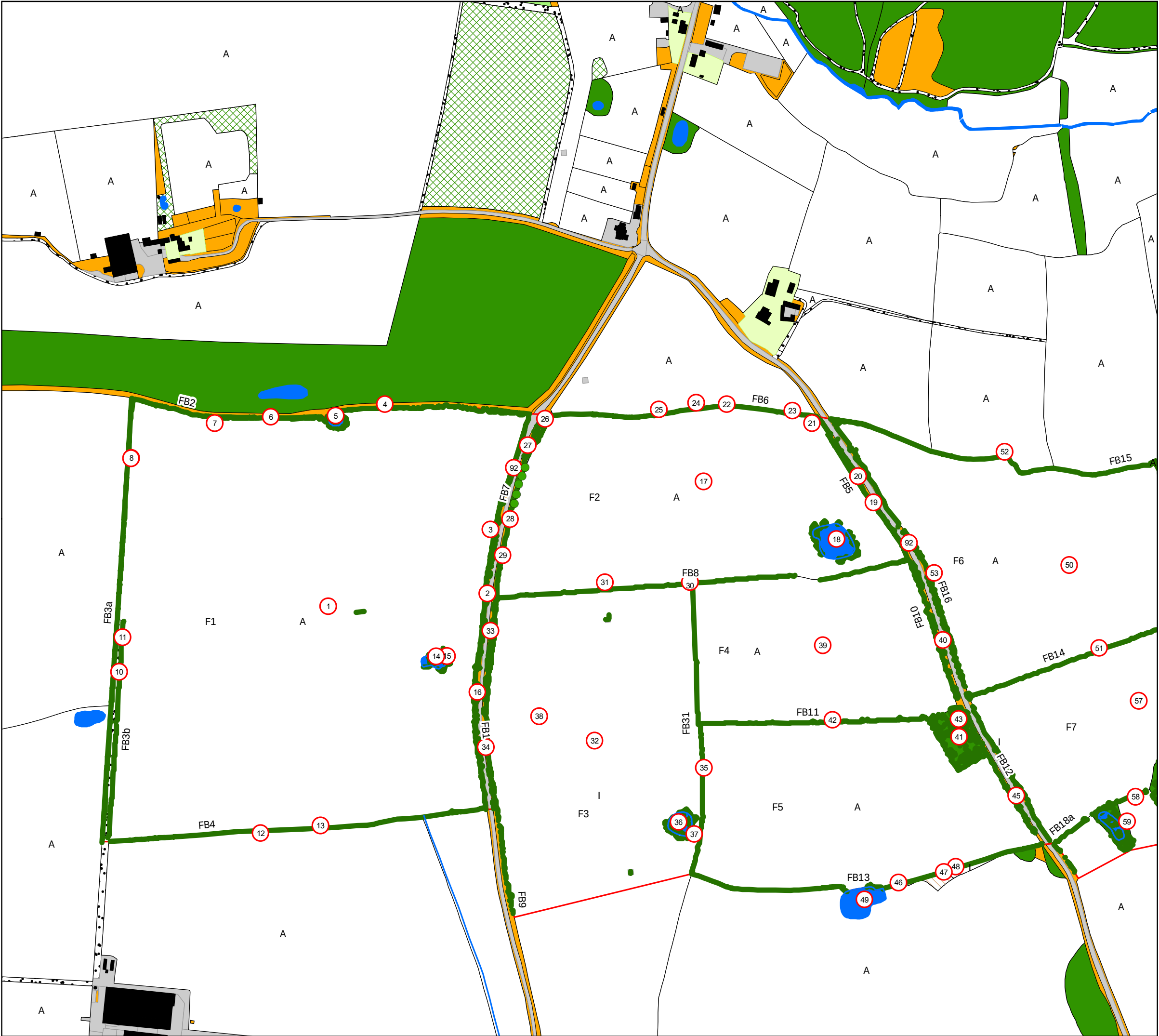
This is a new site.

Spined loach *Cobitis taenia* and bullhead *Cottus gobio* are both listed on Annex II of the Council Directive (92/43/EEC) on the Conservation of Natural Habitats and of Wild Flora and Fauna.

Date Notified: 16 August 2000
Grid Reference SK360144 - SK195148



Appendix E: Phase 1 Habitat Maps of the site



Rev	Date	Notes
A	17/09/19	Initial map production

Legend

- Site boundary
- Broadleaved woodland - semi-natural
- Coniferous woodland - semi-natural
- Scrub - dense/continuous
- Neutral grassland - unimproved
- SI Neutral grassland - semi-improved
- I Improved grassland
- Tall ruderal
- Standing water
- A Arable
- Gardens
- Buildings
- Hardstanding
- Bare ground
- Hedges
- Water
- Target note
- Scattered tree

0 50 100 200 Metres

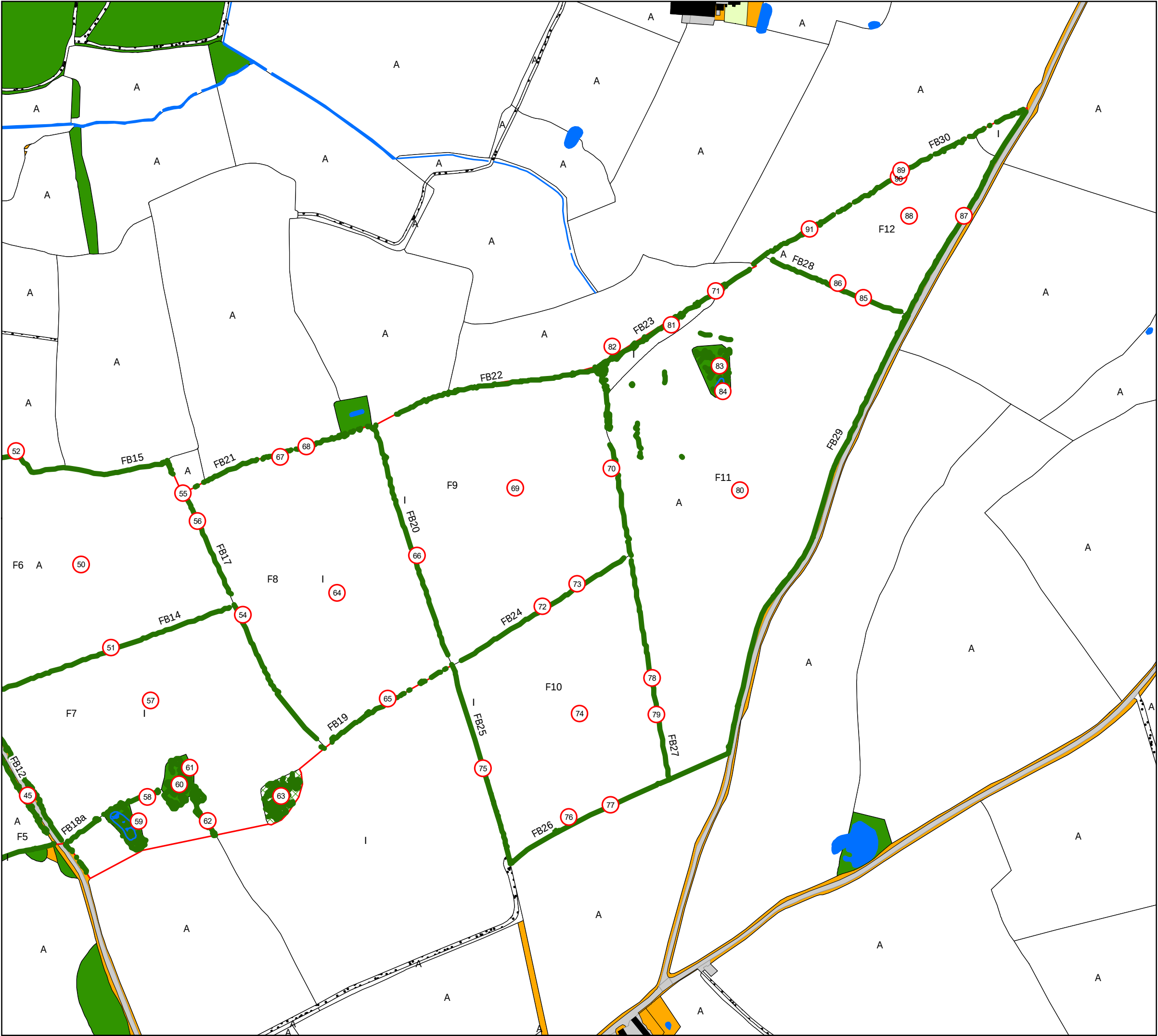


Phase 1 Habitat Plan

Lullington Solar Farm Island Green Power UK Limited			
Scale at A3: 1:4,060	Project No: A114441	Drawing No: Figure 5	Revision: A
Drawn by: Ben Blowers	Drawn date: 17/09/2019	Approved by: Jonathan Jackson	

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Rev	Date	Notes
A	17/09/19	Initial map production

- Legend
- Site boundary
 - Broadleaved woodland - semi-natural
 - Scrub - dense/continuous
 - Neutral grassland - unimproved
 - SI Neutral grassland - semi-improved
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 - Standing water
 - A Arable
 - Gardens
 - Buildings
 - Hardstanding
 - Bare ground
 - Hedges
 - Water
 - Target note



Phase 1 Habitat Plan

Lullington Solar Farm Island Green Power UK Limited			
Scale at A3: 1:4,050	Project No: A114441	Drawing No: Figure 6	Revision: A
Drawn by: Ben Blowers		Drawn date: 17/09/2019	Approved by: Jonathan Jackson

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Lullington Solar Farm

Report to Inform Habitats Regulations Assessment Stage 1 and Stage 2

Lullington Solar Park Limited

May 2021

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Issue 1	November 2020	FINAL
Prepared by:		Jonathan Jackson CEnv MCIEEM Principal Ecologist
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Rev:	Date:	Updated by:	Verified by:	Description of changes:
2.	20/04/2021	J. Jackson	K. Aldous	Updated to include hydrological changes as a possible pathway to LSE in the operational and decommissioning phases of the project.
3.	04/05/2021	J. Jackson	D. West	Updated to minor changes to content and name of the anticipated drainage strategy.

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Figure 1: Site location plan

Figure 2: Location of European Designated Sites screened into this assessment

Appendix A: Report Conditions

Appendix B: Indicative Masterplan

Appendix C: Qualifying Features of the River Mease SAC

Appendix D: Citation Features of the River Mease SSSI

Appendix E: Phase 1 Habitat Maps of the site



Glossary

ALSE	Assessment of Likely Significant Effects
CEMP	Construction Environment Management Plan
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
CJEU	Court of Justice of the European Union
DEFRA	Department for the Environment, Food and Rural Affairs
DEMP	Decommissioning Environmental Management Plan
EC	European Commission
GPP	Guidance for Pollution Prevention
Habitats Regulations	Conservation of Habitats and Species Regulations 2017
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Over-riding Public Interest
IRZ	Impact Risk Zone
LSE	Likely Significant Effect
LWS	Local Wildlife Site
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
PPG	Pollution Prevention Guidelines
SAC	Special Area of Conservation
SDDC	South Derbyshire District Council
SHMS	Soil Handling and Management Strategy
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest



Executive Summary

Contents	Summary
Application site location and description	The site is located on land north of Lullington, Derbyshire and is centred at Ordnance Survey National Grid Reference SK 24750 13763.
Proposed Development	The development proposal is for the installation of a ground mounted solar farm.
Scope of this Assessment	This report assesses the pathways to LSE (HRA Stage 1: Screening) of the proposed development upon relevant designated Natura 2000 sites and subsequently assesses whether these would result in an adverse effect on the integrity of these sites (HRA Stage 2: Appropriate Assessment). This is a submission to inform the Competent Authority's (SDDC) Habitats Regulations Assessment.
Results of Stage 1: Screening	The results from the Stage 1: Screening Assessment found that there was one potential pathway to LSE requiring Stage 2: Appropriate Assessment. This concerned hydrological changes with the potential to affect a tributary of the River Mease, which is designated as a SAC, during construction, operation and decommissioning.
Results of Stage 2: Appropriate Assessment	The results from the Stage 2 Appropriate Assessment found that with mitigation, no impact on integrity (alone or in-combination) of the River Mease SAC is predicted. During construction, the mitigation proposed should be described in detail within a CEMP and associated SHMS for the project, which could be secured by planning condition. The mitigation measures in the CEMP would need to include as a minimum: • Installation of silt fencing; • Damping of haul roads; • Covering of friable materials whenever possible; • Covering of lorries transporting friable materials when moving around the site; • Risk assessments and toolbox talks for contractors doing any refuelling activities; • Bunding of refuelling areas; • Emergency incident strategy; • Spill kits will be available on site at all times; • Signage will be on site in contractors compounds relating to sensitivity of the nearby waterbody which leads to the River Mease SAC; and • A waste disposal plan will be in place for the site, detailing where all waste generated will be stored prior to removal. During operation, mitigation would be provided by elements of the SHMS that would carry on after the construction phase. This would include monitoring requirements and remedial action triggers. The hydrology of the



	site would ultimately change little during operation, but would be managed in accordance with the anticipated Drainage Strategy, supported by the LEMP. During decommissioning, the measures for preventing impacts on the River Mease would be the same as those described in the CEMP. It is therefore proposed that prior to decommissioning a DEMP, is submitted to the Competent Authority for approval. Providing this at this stage is not considered practicable given that this will be prepared ~40 years in the future. This is due to legislative requirements and practical delivery options (i.e. technological advances) potentially rendering any current document obsolete.
Conclusion	The 'Competent Authority' (the Planning Inspector), is considered not to require further assessment under the Habitats Regulations, and the proposed development can proceed without Stage 3 and Stage 4 being completed.

1.0 Introduction

1.1 Background

WYG was commissioned by Lullington Solar Par Limited on 13th October 2020 to prepare a report to inform Stage 1: Screening and Stage 2: Appropriate Assessment of a Habitats Regulations Assessment (HRA).

This report has been prepared by WYG Principal Ecologist Jonathan Jackson. The conditions pertinent to the report are provided in Appendix A.

1.2 Application Site Location

The site is located on land north of Lullington, Derbyshire and is centred at Ordnance Survey National Grid Reference SK 24750 13763 (Figure 1). The site is approximately 90 ha and comprises predominantly of arable fields with some improved grassland fields, associated ponds, hedgerows and field boundaries. A small block of woodland is also present within the site boundary.

The site is bordered partially by Garland Woods to the north and west and further arable and improved grassland fields to the north, south and east. The wider area consists largely of agricultural land, small settlements and several woodlands including Coton Wood 0.4 km to the north, the village of Lullington 0.5 km to the south, agricultural land to the east and Homestall Wood Local Wildlife Site (LWS) 0.4 km to the west.

1.3 Development Proposals

The development proposal is for the installation of a ground mounted solar farm. A draft masterplan for the development proposals is provided in Appendix B. Following the operational phase lasting ~40 years, the site will return to being used for agricultural production.

1.4 Requirements for the HRA

The requirement for an HRA is established through Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, hereby referred to as the 'Habitats Directive', in Articles 6(3) and 6(4). The Habitats Directive is transposed into national legislation by the Conservation of Habitats and Species Regulations 2017. These are hereafter referred to as the 'Habitats Regulations'.

Under Regulation 63, any project which is likely to have a significant effect on a European site (either alone or in-combination with other projects) and is not directly connected with, or necessary for the management of the site, must be subject to an HRA to determine the implications for the site in view of its conservation objectives. This is determined during the Stage 1: Screening Assessment of an HRA (see below).

A Stage 2: Appropriate Assessment then needs to be carried out in respect of any plan or project which:



- either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the European network; and
- is not directly connected with the management of the site for nature conservation.

The term European site is defined fully in Regulation 8 of the Habitats Regulations and includes:

- Special Areas of Conservation (SACs);
- candidate and proposed SACs;
- Special Protection Areas (SPAs);
- potential SPAs;
- proposed Wetlands of International Importance designated or proposed for their wetland features under the auspices of the Convention of Wetlands of International Importance (commonly referred to as 'Ramsar sites'); and
- sites identified for Natura 2000 compensatory measures.

The final two categories are afforded the same level of protection as SACs and SPAs as a matter of Government policy, and the assessment provisions of the Habitats Regulations are applied to them (Natural England, 2017).

2.0 Assessment Methodology

2.1 Assessment Guidance

The Habitats Directive and Regulations do not specify how HRA should be undertaken. In undertaking this HRA, the process we have adopted is that recommended in official European Council (EC) guidance (EC, 2001). In this report, our Stage 1: Screening found that LSE were possible and so a Stage 2: Appropriate Assessment was required. These two stages form the first of four HRA stages, as described below:

- **Stage 1: Screening** – the process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant. This is also known as an 'assessment of likely significant affects (ALSE)';
- **Stage 2: Appropriate assessment** – the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in-combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts (in accordance with guidance following the recent decision by the CJEU; *People Over Wind and Sweetman v Coillte Teoranta* (C-323/17) regarding application of embedded mitigation at Stage 1 or Stage 2 of an HRA (Freeths, 2018);
- **Stage 3: Assessment of alternative solutions** – the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site; and
- **Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain** – an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Over-riding Public Interest (IROPI), it is deemed that



the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of IROPI).

The Stage 1 Screening Assessment comprises four steps, as described below:

- **Step 1.** Determining whether the project or plan is directly connected with or necessary to the management of the Natura 2000 site(s);
- **Step 2.** Describing the project or plan and the description and characterisation of other projects or plans that in-combination have the potential for having significant effects on the Natura 2000 site(s);
- **Step 3.** Identifying the potential effects on the Natura 2000 site(s); and
- **Step 4.** Assessing the significance of any effects on the Natura 2000 site(s).

The Stage 2: Appropriate Assessment should identify the effects of those plans or projects on qualifying features of the European sites in relation to the Conservation Objectives of those sites and determine whether these effects will result in an adverse effect on the integrity of the designated site. Only where the decision maker (the Competent Authority – in this case South Derbyshire District Council (SDDC)), is satisfied that there will be no adverse effect on integrity, or where there are imperative reasons of overriding public interest, can the plan or project be approved.

3.0 Stage 1: Screening

Projects may have spatial implications which can have further reaching effects than those predicted to fall within the development footprint. Specifically, it is recognised that the distance between a proposed development and a designated site is not a definitive determinant as to the likelihood or severity of an impact occurring. Site variables such as prevailing wind conditions, surface and groundwater flow direction will all have an influence on the relative distance at which an impact can occur.

Additionally, the mobile nature of qualifying interest species must also be considered. This is because adverse effect on the qualifying species of a site, can occur even if they are not present within the application site. For instance, fish may migrate through one area to breed at another, but both may not be within a site for which they are designated.

3.1 Step 1 – Determining whether the development proposals are directly connected with or necessary to the management of the internationally designated site(s)

The development proposals are not connected with and are not necessary for the management of any internationally designated sites, although they do have the potential to affect them.



3.2 Step 2 – Identification of internationally designated sites that may be affected and approach taken to identifying other plans or projects that could lead to in-combination effects

The site is located 1.78 km south of the River Mease SAC, as shown on Figure 2. As established during the Ecological Appraisal of the site in 2019 (WYG, 019), a search using MAGIC (DEFRA's interactive, web-based database for statutory designations) showed that the site is within the Impact Risk Zone (IRZ) for the River Mease SSSI. The same area covered by the River Mease SAC also forms the River Mease Site of Special Scientific Interest (SSSI).

Furthermore, the IRZ identifies that all Wind and Solar Energy Projects within it must be assessed for their potential to affect the SSSI. As both the River Mease SAC and River Mease SSSI are both designated for the species and habitats that the river supports, the presence of the River Mease SSSI IRZ has led to the River Mease SAC being screened in to this assessment. The potential pathway to LSE from the development proposals, is formed by waterbodies close the site that are linked to the River Mease possibly being affected by surface water flow impacts.

The qualifying and citation features for the River Mease SAC and River Mease SSSI have been provided in full in Appendix C and Appendix D respectively, but in summary for the SAC they comprise:

- 3260 Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation.
- 1149 Spined loach *Cobitis taenia*.
- 1163 Bullhead *Cottus gobio*.
- 1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*.
- 1355 Otter *Lutra lutra*.

There are no additional European designated sites within 10 km of the site and no potential pathways to LSE with a zone of influence beyond this distance. As a result, the only site screened into this assessment is the River Mease SAC.

3.3 Approach taken to identifying Other Plans or Projects that could lead to In-combination Effects

Establishing whether a project level effect can act in-combination is dependent on whether the effect is still possible following the application of mitigation. For example, a drainage strategy may completely eliminate the potential for surface water run-off from affecting any nearby watercourses, in which case it cannot contribute to any effect in-combination. Or, there are mitigation strategies in place which are designed to eliminate the need to establish in-combination effects as they act cumulatively e.g. payments to recreation mitigation strategies.

For this project, mitigation is considered to remove the potential for any effects on the River Mease SAC and therefore none will act cumulatively with other plans or projects. This conclusion is justified in more detail in Section 4.0 and as such no search for other plans and projects was undertaken.

3.4 Step 3 – Identifying the Potential Effects on Internationally Designated site(s)

The potential pathways to LSE were identified after a review of the following:

- The qualifying features of the River Mease SAC (see Appendix C);
- The River Mease SAC Conservation Objectives (Natural England, 2018);
- The River Mease SAC Conservation Objectives Supplementary Advice on Conserving and Restoring Site Features (Natural England, 2016); and
- The Site Improvement Plan for the River Mease SAC (Natural England, 2014).

This found that there was only one potential pathway to LSE requiring assessment. This related to the potential for sediments and pollutants released *during construction* to affect a tributary of the River Mease. This was not considered possible during the operational phase as there would be a negligible increase in impermeable surfaces that could alter the hydrology of the area.

No other potential pathways were identified and this report does not discuss potential pathways where there is no tangible risk of the effect occurring as a result of the development proposals. For instance, there is a significant distance (1.78 km) between the tributaries of the River Mease that could be affected by the proposals and the River Mease SAC. Therefore, none of the habitats within these tributaries are considered necessary to maintaining the integrity of population of mobile qualifying species from the River Mease SAC e.g. otter *Lutra lutra*. As a result, potential pathways such as disturbance or habitat loss do not require assessment.

3.4.1 Impacts of surface water pollution during construction: Alone and In-combination

Within the boundary of the site and the surrounding 50 m there are numerous small drainage ditches. These are shown on in the Phase 1 habitat survey results provided in Appendix E. These survey data are taken from the Ecological Appraisal report completed of the site in August 2019 (WYG, 2019). The August 2019 survey covered a redline boundary larger than the redline for the development proposals for which this report has been prepared.

These watercourses flow southwards and join with other larger tributaries of the River Mease. It is therefore possible that activities during the construction phase could affect the qualifying features of the River Mease SAC via runoff. This could occur due to contamination of surface water run-off caused by:

- Deposition of fugitive dust into watercourses;
- Run-off from stored friable materials e.g. topsoil;
- Pollution events caused by accidental releases of chemicals or fuel; and
- Improper waste disposal.

Measures to mitigate for these impacts, should be included within a Construction Environment Management Plan (CEMP) secured and approved by planning condition prior to commencement of construction on the application site. This would comprise mitigation. Therefore, in accordance with the HRA methodology (see Section 2.1), any potential pathway to LSE that requires mitigation must be taken forward to Stage 2: Appropriate Assessment.



This is considered to apply both alone and in-combination. However, with the proposed mitigation, no effect on the River Mease SAC is predicted and therefore the pathway to LSE has no potential to act in-combination with other plans or projects. As a result, no search for other plans or projects has been completed.

Pollution events affecting water quality during construction could occur which would result in LSE on qualifying species and habitats; AA is therefore required. This pathway has therefore been taken forward to Stage 2: Appropriate Assessment.

3.4.2 Impacts of surface water pollution during operation: Alone and In-combination

The development proposals will result in the installation of a small substation and associated curtilage and inverters. These will be positioned on small areas of impermeable surfaces that would not have any measurable impact on surface water drainage running off-site. However, it has been identified that precipitation falling onto the solar panels may cause erosion and result in the formation of small surface water channels. These could coalesce to form additional routes by which existing drainage ditches on-site are affected and lead to off-site impacts.

This is considered to apply both alone and in-combination. However, with the proposed mitigation described in the AA, no effect on the River Mease SAC is predicted and therefore the pathway to LSE has no potential to act in-combination with other plans or projects. As a result, no search for other plans or projects has been completed.

Pollution events affecting water quality during operation could occur which would result in LSE on qualifying species and habitats; AA is therefore required. This pathway has therefore been taken forward to Stage 2: Appropriate Assessment.

3.4.3 Impacts of surface water pollution during decommissioning: Alone and In-combination

During decommissioning, the potential for impacts on tributaries of the River Mease are considered to be very similar to those that could occur during construction. These were provided in Section 3.4.1 and have not been repeated here.

This is considered to apply both alone and in-combination. However, with the proposed mitigation described in the AA, no effect on the River Mease SAC is predicted and therefore the pathway to LSE has no potential to act in-combination with other plans or projects. As a result, no search for other plans or projects has been completed.

Pollution events affecting water quality during decommissioning could occur which would result in LSE on qualifying species and habitats; AA is therefore required. This pathway has therefore been taken forward to Stage 2: Appropriate Assessment.

3.5 Step 4 – Assessing the significance of any effects on the Natura 2000 site(s)

The findings of the Stage 1: Screening show that the only potential pathway to LSE that could result in impacts on the River Mease is via surface water pollution, alone and in-combination. In the



absence of mitigation, LSE upon the River Mease SAC could occur during the construction, operational and / or decommissioning phases of the project.

4.0 Stage 2: Appropriate Assessment

The following section discusses the potential pathway to LSE that could result in impacts on the integrity of the River Mease SAC identified at Stage 1: Screening.

4.1 Impacts of surface water pollution during construction: Alone and In-combination

As discussed in Section 3.4.1, the only potential pathways to LSE identified was in the form of surface water pollution, alone and in-combination. It was therefore recommended that mitigation in the form of avoidance for these effects could be secured within a CEMP. The measures that are considered necessary to completely avoid all possible effects on watercourses leading to the River Mease comprise:

- Avoidance of working within 20 m of flowing watercourses where possible;
- Installation of silt fencing between works and flowing watercourses where works are within 20 m of flowing watercourses;
- Damping of haul roads to minimise releases of fugitive dust;
- Covering of friable materials whenever possible;
- Covering of lorries transporting friable materials when moving around the site;
- Risk assessments and toolbox talks for contractors doing any refuelling activities;
- Bunding of refuelling areas;
- Emergency incident strategy;
- Spill kits will be available on site at all times;
- Signage will be on site in contractors compounds relating to sensitivity of the nearby waterbody which leads to the River Mease SAC; and
- A waste disposal plan will be in place for the site, detailing where all waste generated will be stored prior to removal.

These measures have been recommended based on a review of the following Pollution Prevention Guidelines (PPG) and Guidance for Pollution Prevention (GPP) which although superseded, are considered to provide useful advice (available from Negregs, undated):

- PPG 1: Understanding your environmental responsibilities – good environmental practices;
- PPG 6: Working at construction and demolition sites;
- PPG 7: Safe storage – The safe operation of refuelling facilities;
- GPP 5: Works and maintenance in or near water;
- GPP 21: Pollution incident response planning; and
- GPP 22: Dealing with spills.

In addition to the CEMP, a Soil Handling and Management Strategy (SHMS) has been prepared and will be submitted with the application. The primary role of this document is to provide the evidence relating to how the agricultural grade of the soil will be preserved so that it's pre-development use



can be reinstated. This document therefore relates to the construction, operation and decommissioning phases of the application.

During construction, the SHMS gives the details of how any soil excavated will be handled. The volumes of soil that this concerns have not been calculated. However, volumes are predicted to be extremely small and will be limited to small scale works for cabling trenches, sub-station foundations and swale formation. This is based on the piling construction method proposed for the panel supports. The key principles of the SHMS are that bunding of any soil will be away from areas where run-off could occur and reach the tributary of the River Mease, and that bunds will be stabilised by compacting or grassing again to minimise the risk of run-off to negligible levels.

With the application of this mitigation, and adherence to a detailed CEMP and SHMS, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination.

4.2 Impacts of surface water pollution during operation: Alone and In-combination

During operation, it has been identified that precipitation falling onto the solar panels may cause erosion and result in the formation of small surface water channels on site. This is considered most likely to occur immediately post-construction where ground disturbance impacts of construction may result in areas of bare earth and mud. To mitigate this effect, the whole site will be reseeded with a grassland mix as soon as practicably possible. This will therefore attenuate any water running off from panels and it is considered would reduce the risk of erosion to a negligible level.

In addition, the anticipated Drainage Strategy has included the provision of one swale along the northern boundary of the site and one on the western boundary of the site. These vegetated depressions will be formed within the natural low-point of the site and attenuate any water running off from the site toward the tributary of the River Mease. These will slow the transit of surface water to the extent that all sediment held in suspension will fall out and be captured before leaving site.

The provision of the swales is considered to be extremely precautionary. This is due to the site topography being so flat that the actual risk of surface water drainage being altered by the development is already extremely low. However, with the swales installed, this is considered to be reduced to a negligible level. The topography also suggests that with the scale of the swales proposed, no maintenance to clear built up sediment for the duration of the operation phase is predicted to be required.

With the application of this mitigation, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination.



4.3 Impacts of surface water pollution during decommissioning: Alone and In-combination

As discussed in Section 3.4.1, the only potential pathway to LSE identified was in the form of surface water pollution, alone and in-combination. It is therefore recommended that mitigation to avoid LSE could be secured within a Decommissioning Environment Management Plan (DEMP).

It is recommended to the Competent Authority that at this stage the measures within the DEMP should be considered to be the same as the CEMP described in Section 4.1. This is due to the implementation of the DEMP being ~40 years in the future. It is therefore not considered appropriate to attempt to prepare an accurate document now, as technological advances, equipment capabilities, environmental protection guidance and legislation may all have significantly changed. Instead, it is proposed that the Competent Authority could determine their AA based on likely details from the CEMP, with a view to requesting submission and approval of a DEMP closer to the decommissioning program starting.

With the application of this mitigation, i.e. a DEMP, reviewed and approved closer to the start of the decommissioning program, it is predicted that pollution events affecting water quality during construction will not have an adverse effect on the integrity of the River Mease SAC either alone or in-combination.

5.0 Summary

The Stage 2: Appropriate Assessment found that there is no potential for the pathways identified at Stage 1 to affect the integrity of any European site. As such, it is considered that SDDC as the Competent Authority can permit the proposed development without the requirement to complete Stage 3 or Stage 4 of an HRA.



6.0 References

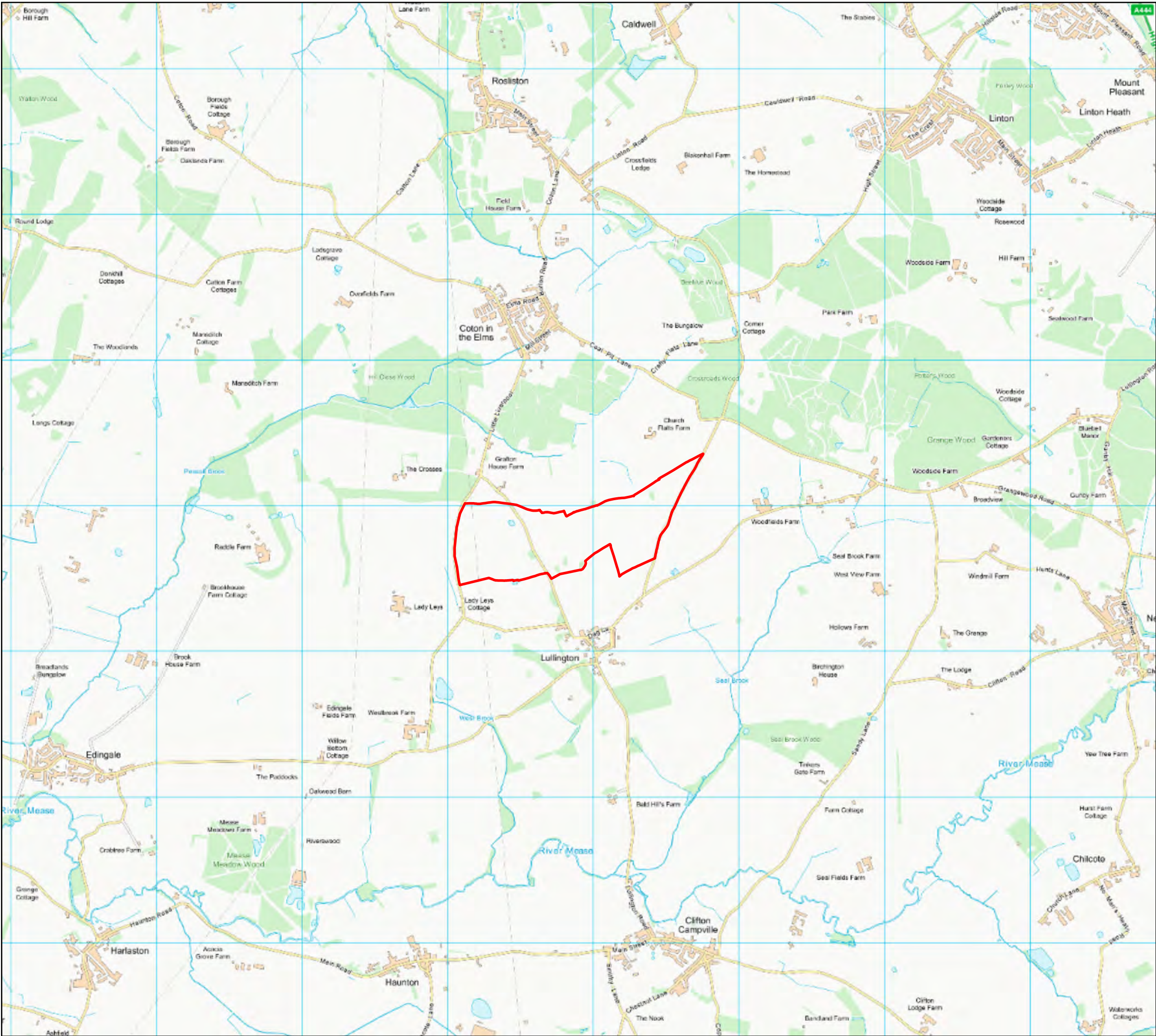
- EC, (2001), *Assessment of Plans and Projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. [online]
http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf. Accessed October 2020.
- Freeths, (2018), *Environmental Bulletin – Spring 2018: HABITAT REGULATIONS ASSESSMENTS: NO MORE SCREENING OUT WITH MITIGATION MEASURES? A SUMMARY OF THE RECENT CASE OF PEOPLE OVER WIND AND SWEETMAN (C-323/17)*, [online] Available at <http://www.freeths.co.uk/2018/04/19/environmental-bulletin-spring-2018/>, Accessed October 2020.
- JNCC, (2015), *River Mease SAC: NATURA 2000 – STANDARD DATA FORM*, [online] Available at <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030258.pdf>, accessed November 2020.
- IAQM, (2014), *Guidance on the assessment of dust from demolition and construction*, [online] Available at http://iaqm.co.uk/wp-content/uploads/guidance/iaqm_guidance_report_draft1.4.pdf, Accessed October 2020.
- Natural England, (2014), *Site Improvement Plan: River Mease*, [online] Available at <http://publications.naturalengland.org.uk/file/6448011194400768>, Accessed November 2020.
- Natural England, (2016), *River Mease SAC Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features*, [online] Available at <http://publications.naturalengland.org.uk/file/5642992359047168>, Accessed October 2020.
- Natural England, (2017), *Natural England Standard: Habitats Regulations Assessment (HRA Standard)*, [online] Available at <http://publications.naturalengland.org.uk/publication/8740045>, Accessed October 2020.
- Natural England, (2018), *River Mease SAC Conservation Objectives*, [online] Available at <http://publications.naturalengland.org.uk/file/6012812623347712>, Accessed October 2020.
- Net Regs, (undated), *Guidance for Pollution Prevention (GPPs) – Full list*, [online] Available at <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>, Accessed October 2020.
- WYG, (2019), *Ecological Appraisal: Lullington Solar Farm*, Report on behalf of Island Green Power UK Limited, Project Number A114441.



Figures

Figure 1: Site location plan

Figure 2: Location of European Designated Sites screened in to this assessment



Rev	Date	Notes
A	29/10/20	Initial map production

Legend

Site boundary

0 250 500 1,000 Metres



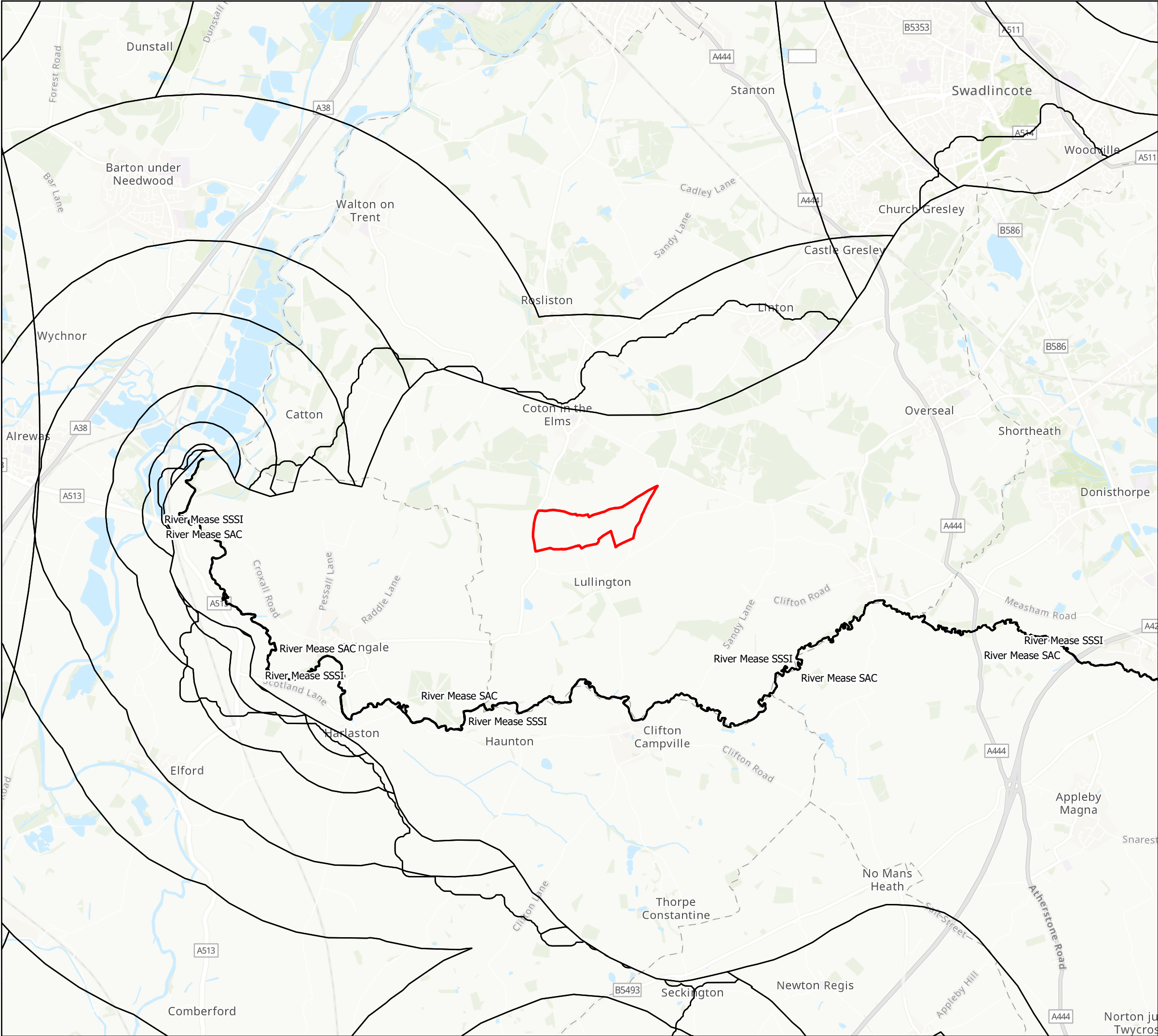
Site Location Plan

Lullington Solar Farm
Lullington Solar Park Limited

Scale at A3: 1:25,000	Project No: B023978	Drawing No: Figure 1	Revision: A
Drawn by: Ben Blowers	Drawn date: 29/10/2020	Approved by: Jonathan Jackson	

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Rev	Date	Notes
A	29/10/20	Initial map production

Legend

-  Site boundary
-  Special Areas of Conservation (SAC)
-  Sites of Special Scientific Interest (SSSI)
-  Sites of Special Scientific Interest (SSSI) Impact Risk Zones

0 500 1,000 2,000 Metres



Location of European Designated Sites screened into this assessment

Lullington Solar Farm
Lullington Solar Park Limited

Scale at A3: 1:50,000	Project No: B023978	Drawing No: Figure 2	Revision: A
Drawn by: Ben Blowers	Drawn date: 29/10/2020	Approved by: Jonathan Jackson	

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Appendix A: Report Conditions



REPORT CONDITIONS

This Report has been prepared using reasonable skill and care for the sole benefit of Lullington Solar Park Limited ("the Client") for the proposed uses stated in the report by WYG Environment Planning Transport Limited ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

No liability is accepted or warranty given for; unconfirmed data, third party documents and information supplied to WYG or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. WYG does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.



Appendix B: Indicative Masterplan



Appendix C: Qualifying Features of the River Mease SAC



Qualifying Features of the River Mease SAC (JNCC, 2015)

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

3260 Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation

Annex II species that are a primary reason for selection of this site

1149 Spined loach *Cobitis taenia*

The River Mease is a good example of a riverine population of spined loach *Cobitis taenia*. It is a small tributary of the River Trent and has retained a reasonable degree of channel diversity compared to other similar rivers containing spined loach populations. It has extensive beds of submerged plants along much of its length which, together with its relatively sandy sediments (as opposed to cohesive mud) provides good habitat opportunities for the species.

1163 Bullhead *Cottus gobio*

The Mease is an example of bullhead *Cottus gobio* populations in the rivers of central England. Bed sediments are generally not as coarse as other sites selected for the species, reflecting the nature of many rivers in this geographical area, but are suitable in patches due to the river's retained sinuosity. The patchy cover from submerged macrophytes is also important for the species.

Annex II species present as a qualifying feature, but not a primary reason for site selection

1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*

1355 Otter *Lutra lutra*



Appendix D: Citation Features of the River Mease SSSI

COUNTY: Leicestershire
Staffordshire
Derbyshire

SITE NAME: River Mease

DISTRICTS: North-west Leicestershire
Lichfield
South Derbyshire

STATUS: **Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)**

Local Planning Authorities: North-west Leicestershire District Council
Lichfield District Council
South Derbyshire District Council

National Grid Reference: SK360144 - SK195148 **Area:** 21.86 (ha) 54.02 (ac)

Ordnance Survey Sheet: 1:50,000: 128 **1:10,000:** SK21SE SK31SW
SK31SE SK11SE

Date Notified (under 1981 Act): 16 August 2000

Reasons for notification

The River Mease represents a lowland clay river supporting nationally significant populations of spined loach *Cobitis taenia* and bullhead *Cottus gobio*, two internationally notable species of native freshwater fish with a restricted distribution in England.

Description

Rising at 130 metres above sea level in the Coal Measures of north-west Leicestershire, the River Mease flows approximately 25 kilometres westwards across a largely rural and agricultural landscape to its confluence with the River Trent at Croxall. The river forms an eastern tributary of the Trent and flows throughout its course across alluvial soils overlying bands of Sherwood Sandstone and Mercia Mudstone. Of special interest are the resident populations of two of the UK's smallest freshwater fish species, spined loach *Cobitis taenia* and bullhead *Cottus gobio*, which occur in association with a diverse freshwater fish community. As a relatively un-modified lowland river, the River Mease contains a diverse range of physical in-channel features, including riffles, pools, slacks, vegetated channel margins and bankside tree cover, which provide the conditions necessary to sustain populations of both spined loach and bullhead.

The head of the site includes the lower reaches of the Gilwiskaw Brook which flows along a steep gradient across bands of interbedded mudstones and sandstones. Due to the fast-flowing nature of the river, aquatic vegetation is sparse and marginal vegetation restricted to stands of floating sweet-grass *Glyceria fluitans* but these sections provide valuable habitat for bullhead *Cottus gobio*, a bottom-dwelling native fish which favours clean coarse gravels for spawning and is often found where flows are consistently strong and sediment deposition minimal. Populations of bullhead also occur in the lower reaches of the Mease where river substrates are finer but woody debris lying within the river channel becomes more important in providing suitable breeding habitat.

contd/

Below Snarestone the descent becomes more gradual and the river enters a broad lowland floodplain. The slow-moving river meanders tightly across floodplain deposits, occasionally exposing underlying sandstones and fluvial sands and gravels. These middle reaches of the River Mease provide excellent habitat for a nationally significant population of spined loach *Cobitis taenia*. Confined in its UK range to a limited number of catchments in central and eastern England, this largely sedentary fish is closely associated with the open sandy substrates of the river bed which act as important feeding and spawning grounds. As a small fish, refuges from predators and strong river flows are very important and this is provided by aquatic and marginal vegetation within the river channel. Stands of marginal vegetation are typically dominated by common club-rush *Schoenoplectus lacustris*, *Glyceria fluitans*, reed canary-grass *Phalaris arundinacea*, branched bur-reed *Sparganium erectum*, greater pond sedge *Carex riparia* and bulrush *Typha latifolia*. Submerged aquatic vegetation becomes more varied on the lower reaches of the river with river water-crowfoot *Ranunculus fluitans*, common water-crowfoot *R. aquatilis*, blunt-leaved pondweed *Potamogeton obtusifolius*, fennel pondweed *P. pectinatus*, arrowhead *Sagittaria sagittifolia* and yellow water-lily *Nuphar lutea* becoming increasingly frequent.

Bankside tree cover is very variable but an important feature of the river channel as submerged root systems of larger trees provide important in-channel cover for fish and provide woody debris to the watercourse in the form of fallen branches. In many places the river is largely open, flanked by semi-improved pasture and arable land adjacent to the bank edge. Where tree cover is present, banks are frequently lined with alder *Alnus glutinosa*, ash *Fraxinus excelsior* and various species of willow *Salix* spp. including good numbers of large pollarded crack willow *Salix fragilis*. Some sections of bank are flanked by dense scrub dominated by hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

Additional interest is provided by populations of freshwater white-clawed crayfish *Austropotamobius pallipes* and otter *Lutra lutra*, both animals with a restricted distribution within the East Midlands and which receive special legal protection.

Other Information

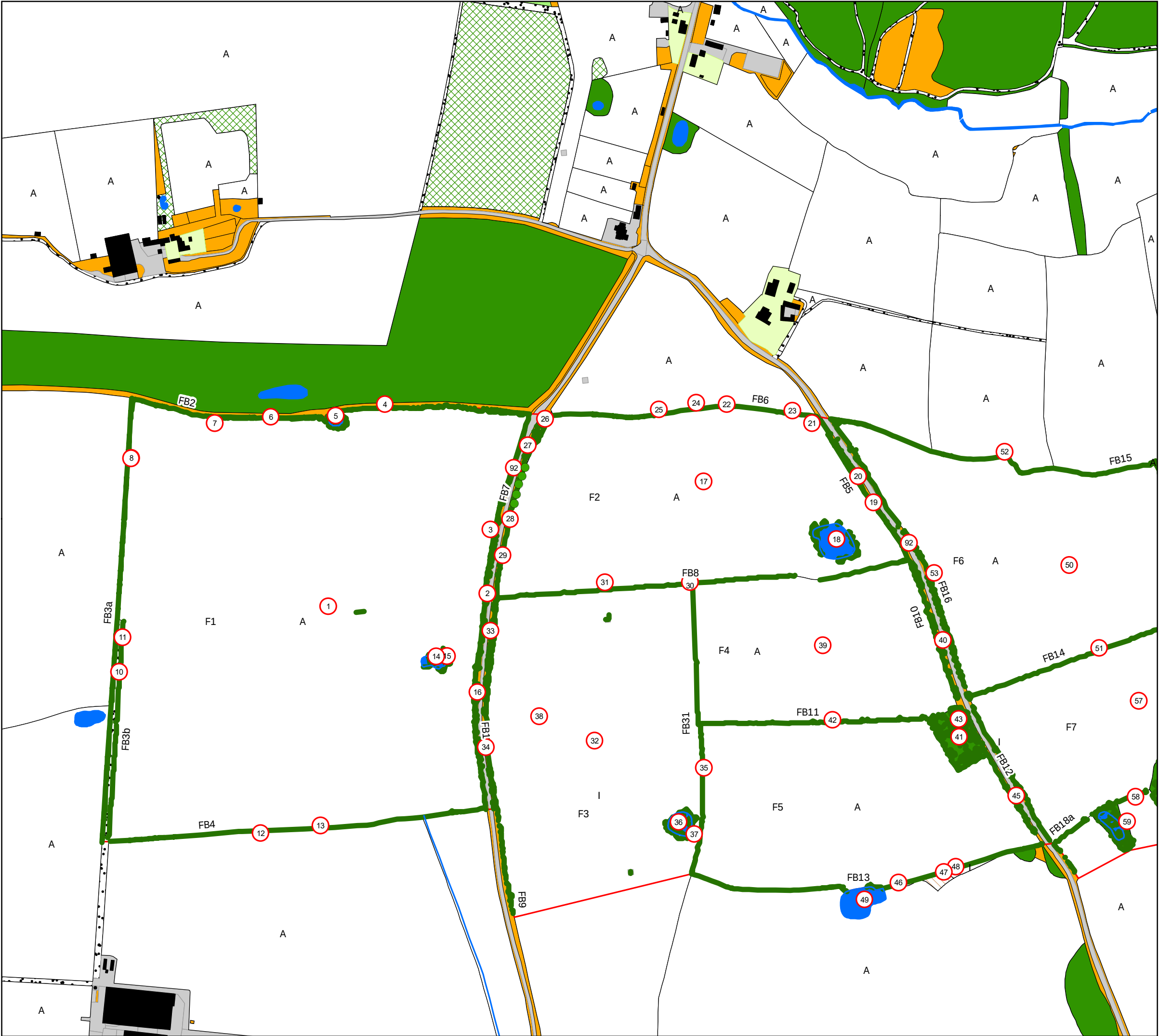
This is a new site.

Spined loach *Cobitis taenia* and bullhead *Cottus gobio* are both listed on Annex II of the Council Directive (92/43/EEC) on the Conservation of Natural Habitats and of Wild Flora and Fauna.

Date Notified: 16 August 2000
Grid Reference SK360144 - SK195148



Appendix E: Phase 1 Habitat Maps of the site



Rev	Date	Notes
A	17/09/19	Initial map production

Legend

- Site boundary
- Broadleaved woodland - semi-natural
- Coniferous woodland - semi-natural
- Scrub - dense/continuous
- Neutral grassland - unimproved
- SI Neutral grassland - semi-improved
- I Improved grassland
- Tall ruderal
- Standing water
- A Arable
- Gardens
- Buildings
- Hardstanding
- Bare ground
- Hedges
- Water
- Target note
- Scattered tree

0 50 100 200 Metres



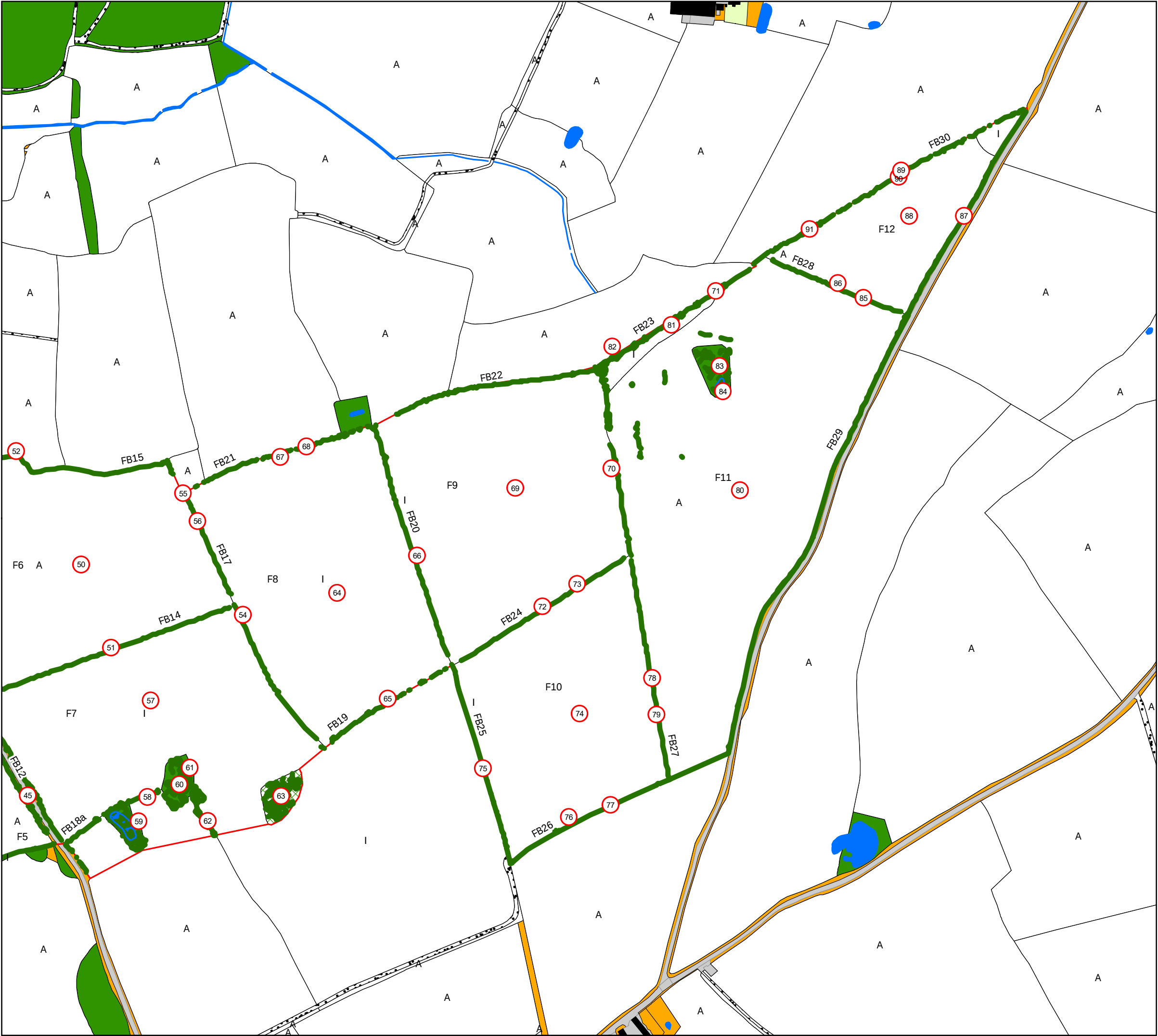
Phase 1 Habitat Plan

Lullington Solar Farm
Island Green Power UK Limited

Scale at A3: 1:4,060	Project No: A114441	Drawing No: Figure 5	Revision: A
Drawn by: Ben Blowers	Drawn date: 17/09/2019	Approved by: Jonathan Jackson	

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Rev	Date	Notes
A	17/09/19	Initial map production

- Legend
- Site boundary
 - Broadleaved woodland - semi-natural
 - Scrub - dense/continuous
 - Neutral grassland - unimproved
 - SI Neutral grassland - semi-improved
 - I Improved grassland
 - Standing water
 - A Arable
 - Gardens
 - Buildings
 - Hardstanding
 - Bare ground
 - Hedges
 - Water
 - Target note



Phase 1 Habitat Plan

Lullington Solar Farm Island Green Power UK Limited			
Scale at A3: 1:4,050	Project No: A114441	Drawing No: Figure 6	Revision: A
Drawn by: Ben Blowers	Drawn date: 17/09/2019	Approved by: Jonathan Jackson	

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ecology@wyg.com

WYG Environment Planning Transport Limited.

Registered in England & Wales Number: 3050297

Registered Office: 3 Sovereign Square, Sovereign Street, Leeds LS1 4ER

Appendix 3: Pre-application Advice Letter

Jane Crichton
Associate Planner
Lanpro

By email only

Allison Thomas
Strategic Director (Service Delivery)
South Derbyshire District Council,
Civic Offices, Civic Way,
Swadlincote, Derbyshire, DE11 0AH

www.south-derbys.gov.uk

@SDDC on Twitter

@southderbyshiredc on Facebook

Please ask for Chris Nash

Phone (01283) 228706

Fax (01283) 595850

Typetalk 18001

DX 23912 Swadlincote

planning@south-derbys.gov.uk

Application Ref. No: PRE01211

Your Ref. No: N/A

14 January 2019

Dear Madam

Construction of a ground mounted solar farm with associated infrastructure on land at SK2413 9671 and SK2413 4758 (fields north of Lullington), Coton Road, Lullington

I refer to your pre-application enquiry received on 28 November 2018. I have taken some time to consider the proposals and constraints relevant to the site.

The Local Plan Part 1 supports the principle of energy generation proposals under policy SD6. However, all proposals will be tested for their impact on the local environs with the policy stating:

"The Council will support renewable and other energy developments and ancillary buildings or infrastructure subject to the following considerations:

- i) that the environmental effects of the proposal have been appropriately considered and schemes will not give rise to unacceptable impacts on landscape or townscape character, ecology, the historic environment or cultural heritage assets.*
- ii) that proposals will not give rise to unacceptable impacts on local amenity, or give rise to safety concerns, as a result of noise, shadow flicker, electromagnetic interference, emissions to the air or ground, odour or traffic generation and congestion".*

This policy ties back to overarching strategy of the Plan (set out at policy S1) which confirms, inter alia, that *"it is essential that the District's heritage assets, landscape and rural character are protected, conserved and enhanced"*. Further policies of the Part 1 and Part 2 Plan would be drawn into consideration.

The site is extensive at circa 1km² (around 247 acres) in total, made up of circa 0.33km² to the west of Coton Road and 0.67km² to the east, although I note the intention to use around 76 acres, or a third, of this land as a minimum. Both parcels of land are predominantly arable farmland, actively managed, along with closely trimmed hedgerows with some hedgerow trees, woodland copses and clusters, some isolated trees and ponds. A limited extent of the land is put to pasture. The land is generally level across the site, although falls towards the western extent and exhibits the upper end of a valley formation to the south-eastern edge. Lullington itself is positioned on high ground in the area, before land falls to the south of the village.

Visual and landscape effects

The nature of the landform means that visual and landscape impacts will be a significant consideration in the assessment of any proposal. The National Character and Local Character Areas should be taken into account in formal assessment of the proposals, whilst also considering the impact of the development on visual receptors, such as those using Lullington Footpaths 1 and 2 which pass north to south through the eastern parcel and those using the surrounding highway network, noting that some of these routes form part of the County's cycle routes strategy. In addition, the site is wholly within the National Forest further enhancing the tourism function of the landscape.

Soilscape

The land appears to be a mixture of grade 2 and grade 3 (best and most versatile (BMV)) agricultural land. Any application should be accompanied by relevant assessment of the soils affected and classify them accordingly. Where BMV agricultural land is to be sterilised by the development, sequential assessment of alternatives should be presented.

Drainage

The proposal falls within the catchment for the River Mease Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI). Water quality is an issue for this catchment and whilst not creating foul water flows, the creation of solar arrays is likely to change the nature of surface water drainage and discharge. Silting impacts from the construction and operational phase can also have an impact on the SAC. Due to the designation, the proposal would need to be screened against the Habitat Regulations to establish whether Appropriate Assessment is required. In addition, whilst in Flood Zone 1, parts of the site are also susceptible to surface water flooding. Any application must thus be supported by a full flood risk assessment and drainage strategy, and be made in a manner where detail of attenuation, etc. can be understood.

Heritage

Whilst the land itself is not subject to any designation, Lullington has an extensive conservation area which adjoins the site, within which are entries on the Historic Environment Register (HER) and listed buildings such as the grade II* Church of All Saints with its notable spire. The historic nature of the village also heightens the potential for archaeological interest on the site itself. Any application must be accompanied by appropriate assessment of the impacts on designated and non-designated heritage assets, and evaluation of the potential for archaeological interest.

Biodiversity

The extensive nature of the site and varied habitats it presents offers scope for protected and priority species, such as Great Crested Newt, bats and ground nesting birds. Appropriate ecological surveys informed by a preliminary ecological appraisal and arboricultural assessment should be provided to establish the impact on biodiversity, as well as set out any mitigation proposals.

Highway impacts

During the course of construction it is anticipated that HGV movements on the surrounding road network would increase. This network is predominantly narrow or single track lanes which would constrain the availability of suitable routes for large vehicles, and consideration needs to be given to the number of deliveries to the site and routing for construction traffic, as well as subsequent maintenance/operation and decommissioning of the site.

In providing the above comments, the proposal has not been screened under the Environmental Impact Assessment Regulations. If your client intends to proceed towards a formal proposal, once the exact parameters of that proposal are known it would be prudent to seek a Screening Opinion from the authority.

Local Plan and Neighbourhood Development Plan policies, along with Supplementary Planning Documents and other guidance can be viewed at www.south-derbys.gov.uk/planning, where you can also find out more about how we will deal with your application.

Information on applying for planning permission is available at www.south-derbys.gov.uk/planning, and we encourage that you make your application through the Planning Portal. If posting your application to us, please provide the original and 1 further copy of each document provided. You should have regard to the national and local validation requirements set out at www.south-derbys.gov.uk/lvr so to ensure your application can be accepted and processed.

I hope the above is useful but please note that advice is given at officer level only and does not prejudice any formal decision the Council makes in the future.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Chris Nash', with a long horizontal stroke extending to the right.

Chris Nash
Planning Delivery Team Leader