

Proposed Development of a Solar Photovoltaic (PV) Farm with Associated Infrastructure, Including Battery Storage

Environmental Statement

Land at Blunts Drove, Walton Highway, Norfolk

On Behalf of Downing LLP

In partnership with







Meerdyke Solar Farm

Environmental Statement

Volume 1: Non-Technical Summary

October 2022



NON-TECHNICAL SUMMARY

INTRODUCTION

This Non-Technical Summary (NTS) forms part of the Environmental Statement (ES) prepared under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations') on behalf of Downing Renewable Developments LLP.

Downing Renewable Developments (the Applicant) has applied for consent for the erection and 30-year operation of a solar PV farm with an installed capacity up to 49.9 MW, comprising solar panels and associated infrastructure, including battery storage. The project is referred to as Meerdyke Solar Farm ('the Proposed Development'). The Proposed Development is located 1.3 kilometres (km) east of Wisbech and 500 metres (m) to the east of the A47 trunk road, within the administrative boundary of King's Lynn and West Norfolk Council.

The location of the Site is shown in Figure 1: Site Location.

The full findings of the Environmental Impact Assessment (EIA) undertaken for the Proposed Development (including baseline information, survey findings and technical assessments) are presented in the ES. The findings of these studies are summarised and presented in this summary document in non-technical language.

The NTS provides:

- a description of the site and surrounding context;
- an outline of the reasonable development alternatives considered by the Applicant and an indication of the main reasons for their choice, taking into account the potential environmental impacts;
- a description of the proposed development; and
- a summary of the likely significant environmental effects predicted and key mitigation measures (as relevant).

Purpose of the Non-Technical Summary

The aim of this NTS is to summarise the content and the main findings of the ES in a clear and consistent manner to assist the public in understanding what the environmental effects of the Proposed Development are likely to be. The full ES provides a more technical assessment of the Proposed Development.

This ES comprises of four volumes:

- Volume 1: NTS;
- Volume 2: ES Main Report;
 - 1. Introduction
 - 2. Development Description
 - 3. Alternatives and Design Evolution
 - 4. Planning Policy
 - 5. Landscape and Visual
 - 6. Traffic and Transport and

• Volume 3: Figures.

In addition to the ES the planning application is supported by a Planning Statement and Application Drawings.

ES Availability

An electronic version of the reports supporting the application, including the ES, will be available to download from the Downing website: https://www.downing.co.uk/case-studies/meerdyke-solar-farm

Additionally copies of the ES and other documentation can be viewed on the Council's online planning application portal: http://eplanning.norfolk.gov.uk/.

Commenting on the Application

When the application for the Proposed Development is lodged with the Borough Council of King's Lynn and Norfolk ('the Council') the Applicant will advertise the application in accordance with legislation in local and national press. The Council will invite formal representations on the Proposed Development, which will be taken into account before any decision is reached on the application.

Comments on the application should be forwarded to the Council at:

Planning Department
Borough Council of King's Lynn & West Norfolk
Kings Court
Chapel Street
King's Lynn
Norfolk
PE30 1EX

Link to Planning Portal:

https://www.west-norfolk.gov.uk/homepage/169/comment on a planning application

ENVIRONMENTAL IMPACT ASSESSMENT

The primary purpose of the EIA process is to inform the decision maker of the environmental implications of a proposed development. Through this process information is collected about the possible environmental impacts of the development. These findings are evaluated and presented in a fully transparent manner to assist consultation, and to enable the decision makers to take account of impacts in their planning determination. Further to that, the EIA also helps to identify controls over the construction or operation of the Proposed Development that are required to manage and mitigate (lessen / reduce) impacts.

The EIA Regulations require that an EIA must be undertaken before permission is granted for certain types of development. The Proposed Development falls within one of the categories (Schedule 2) potentially requiring EIA and due to the potential for significant environmental effects to occur, one has been undertaken and an ES prepared to accompany the planning application. The EIA has been undertaken in accordance with the EIA Regulations.

The EIA process adopted for the proposed development has followed best practice guidelines, as set out by the Institute of Environmental Management and Assessment (IEMA) Quality Mark scheme. The process involved the following key steps:

- Consultation with key stakeholders on the issues to be considered within the EIA;
- Collection, use and assessment of the most up-to-date baseline information and likely evolution of that baseline without the Proposed Development or in the future;
- Interpretation of the Proposed Development planning drawings, as well as the formulation of assumptions in the absence of information, as the basis for the individual technical assessments;
- Use of relevant guidance and good practice methods to predict the likely nature, scale and significance of any environmental change; and
- Reporting of the results of the EIA process in the ES in a transparent way, to provide the information required to inform the decision-making process.

Screening and Scoping

The Proposed Development falls under Schedule 2 of the Town and Country Planning ('the EIA Regulations') and as such was screened for EIA on 28th April 2022. A subsequent Screening Opinion was received on 26th May 2022 confirming an ES would be required in relation to the Proposed Development.

An EIA Scoping Report was subsequently submitted to the Council in July 2022 providing detailed consideration of the potential impacts of the Proposed Development on the environment. With consideration of assessments already undertaken and the Council's Screening Opinion, the Scoping Report concluded that a proportionate and focussed EIA should be carried out, concentrating on environmental effects relating to Landscape, Visual, Traffic and Transport and the associated cumulative effects of these. The Council subsequently responded with a Scoping Opinion on 3rd October 2022 confirming that the proposed scope was acceptable. Additional advice and comments received have been taken into account in the planning submission.

Consultation and Pre-Application Engagement

An important part of the EIA process involves consulting with a variety of organisations and individuals. This process is important both for allowing interested parties to express their views or concerns about a proposal, but also to highlight any specific issues to be assessed or reviewed in the ES. This stakeholder consultation takes place throughout the design and assessment process.

The Applicant has sought to front-load the design process at the Site by engaging with the Council, key stakeholders and the wider community early on. The feedback received across this consultation has informed design development. An overview of the pre-application consultation is summarised below:

- Pre-Application Inquiry with the Council (12th January 2022);
- EIA Screening Response (26th May 2022) and Scoping Response (3rd October 2022);
- Parish Council Meeting (25th May 2022); and,
- Community Exhibition (22nd August 2022).

THE PROPOSED DEVELOPMENT

The layout of the Proposed Development is shown in Figure 2: Proposed Site Plan. The site comprises two parcels of land, an East Array and West Array, which are separated by Harps Hall Road passing between the two arrays.

The Proposed Development have a generation capacity of up to 49.9MW and would include the following key components:

- ground mounted solar panels;
- a substation container;
- 10x battery energy storage containers;
- · a transformer including housing;
- a switchgear including housing;
- perimeter fencing, security fencing and CCTV;
- lighting;
- access tracks 5 m wide (additional 0.5 m buffer on either side of track);
- two temporary Site construction compounds; and
- landscaping and biodiversity enhancements.

A description of the main components of the Proposed Development is provided below.

Solar PV Array

The solar PV array would consist of approximately 125,000 solar panels laid out in approximately 30 m long rows, known as strings, with a spacing of approximately 3.5 m between each row. Each string of panels would be mounted on a rack comprising metal poles anchored to the ground via concrete footings or shallow piles.

The panels would be mounted at approximately 0.6 m from the ground rising to 3.1 m and be tilted approximately 20 degrees from horizontal in a south facing direction.

On-site Substation and Battery Storage Infrastructure

The total area set aside for the substation and battery storage infrastructure is approximately 390 msq, located at the north western boundary of the West Array. The substation container and ten battery storage containers would measure approximately $12 \text{ m} \log x 2.5 \text{ m}$ wide individually. The Switchgear and Transformer would be located in two separate building units adjacent to the substation measuring approximately $5 \text{m} \log x 5 \text{m}$ wide.

Temporary Construction Compound

Two temporary construction compounds would be required to enable construction of the Proposed Development. The two compounds would be located towards the centre of the site adjacent to Harp's Hall Road, with a larger compound located in the West Array and a smaller compound within the East Array. The compounds would include:

- access tracks and internal circulation routes for vehicles and pedestrians;
- PIR lighting for security and safety during hours of darkness;
- surface water management measures;

- temporary office accommodation and welfare buildings (toilets, kitchen/ canteen, drying rooms);
- · equipment storage;
- · a receiving area for incoming vehicles;
- maintenance and refuelling facilities;
- · waste, recycling and materials management facilities; and
- parking.

The approximate dimensions of the western compound are 100 m x 50 m while the eastern compound would be approximately 50 m x 30 m in size.

Access

Access to the Proposed Development during construction and operation for road vehicles would be via the A47, St Paul's Road South and Harp's Hall Road entering the site via the existing access.

Approximately 9 km of new on-site access tracks would be required to provide access across the Site including access to the substation and battery storage containers. On-site access track exact positions would be refined during detailed design. Typical on-site access tracks would have a running width of approximately 5 m with 0.5 m wide shoulders at each side of the track.

The majority of the on-site access tracks are located on bear soil due to the agrarian nature of the Site however where vegetation is present soil would typically be stripped to a suitable subsoil layer and the track (approximately 300 mm to 500 mm thick) and on-site tracks would be constructed on the subsoil.

On-site access tracks shall be constructed of a suitable permeable granular material (e.g. gravel medium) to match existing conditions (such as Type 3 aggregate). Therefore, proposed access tracks would not increase runoff rates when compared to pre-development conditions.

Connection to the Electricity Grid

The electricity produced by the Proposed Development would be exported to the electricity network. The proposed point of connection to the wider electricity network is at Walsoken Substation approximately 2 km southwest of the Site. The grid connection would be the responsibility of the TSO UK Power Networks and would be subject to a separate consenting process under Schedule 2 of the EIA Regulations. As such the details of the grid connection route is not confirmed at this stage and not included within the assessment in this ES.

Construction Activities

The estimated construction period of the Proposed Development is approximately 34 weeks. This period is indicative and may be subject to variation as a result of factors which include, but are not limited to, weather restrictions, ground conditions encountered through detailed investigation, material delivery, timing of grid connection works and public highway constraints. However, this is considered to represent a realistic case for the purposes of assessment.

Construction by the appointed main contractor would begin following agreement of the detailed design and approval of any pre-commencement conditions with the appropriate consenting authority.

The typical construction hours of work would be Monday to Friday 07:00 to 20:00 and Saturday 07:00 to 16:00 during the months of April to September, and 07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturdays during the months of October to March (inclusive). No work on Sundays would take place without prior agreement with the Local Authority.

A Construction Traffic Management Plan (CTMP) would be agreed within consultation with the Council and Highways England. This would address the scheduling, routeing and overall management of abnormal load movements along with the programming and management of all other HGV movements.

A detailed Construction Environmental Management Plan (CEMP) would be agreed with the Local Authority and relevant statutory consultees prior to construction commencing. The CEMP would provide details of the construction programme and key activities within each phase of work and outline the mitigation measures that would be employed during the construction period to avoid or reduce potential environmental impacts.

Operation Management and Maintenance

The expected operational life of the Proposed Development would be 30 years from the date of final commissioning. Solar farms are designed to operate largely unmanned with issues being addressed remotely as much as possible however maintenance shall be undertaken if manual works are required. 6 monthly or yearly maintenance programmes will be in place during the full lifetime of the project.

Residues and Emissions

The EIA Regulations require that an EIA Report provides an estimate, by type and quantity, of expected residues and emissions (such as water, air and soil and subsoil pollution, noise, vibration, heat, light, radiation and quantities and types of waste produced) resulting from the construction and operation of the Proposed Development. No significant residues or emissions have been identified during the construction phase and no significant residues or emissions would result from the operation of the Proposed Development.

SITE SELECTION AND ALTERNATIVES

The Site was selected following the completion of a Site Feasibility Report. The Site Feasibility Report considered a number of factors including:

- Proximity to Grid Connection;
- · Agricultural Land Classification;
- Ecology and Ornithology;
- Transport Access;
- Landscape and Visual; and
- Archaeology and Heritage.

The identification of environmental effects is an iterative process which runs alongside the design process. As environmental effects and sensitivities have been identified, the layout of the Proposed Development has gone through a number of modifications to avoid or minimise the potential environmental effects through careful design.

Following the completion of desk-based research and technical site surveys the key environmental issues for consideration in the design process were identified. Issues were considered through design with the aim of 'designing out' significant effects. Where it has not been possible to entirely mitigate by design, the issues have been considered further as part of the ES.

There have been three principal iterations in the evolution of the proposed solar panel array and infrastructure layout, which have been developed at different stages in the project design process.

- Layout 1: Pre-Screening Layout
- Layout 2: Post-Survey Layout
- Layout 3: Final Layout

Table 1 explains the changes made through the three key iterations and how environmental constraints were accounted for.

Table 1: Main Design Iterations					
Iteration	Comment				
Layout 1: Pre- Screening Layout	The Pre-Screening Layout as shown on Figure 3: Existing Site Plan was determined following the completion of the Site Feasibility Report The Pre-Screening Layout was then refined in response to a number of technical constraints including a 11kv overhead line running east to west across the western array and a steel lattice overhead line running north to south across the southeast corner of the site.				
Layout 2: Post- Survey Layout	The Post-Survey Layout was informed following the completion of environmental surveys. Following the surveys, a number of environmental constraints reduced the developable area as shown in Figure 2: Proposed Site Plan.				
Layout 3: Final Layout	Following further detailed environmental assessment, the substation and Battery Energy Storage System (BESS) compound were relocated from the corner adjacent to Meer Dyke Lane and Cow Lake Drove due to concerns of landscape impacts and potential noise impacts upon residential receptors and the solar arrays were reduced in height from 3.45 m to 3.1 m.				

The preferred layout taken forward for assessment in the ES is Layout 3 and includes:

- A reduction of in solar array height to reduce visual impacts;
- Incorporation of landscape/ property buffers adjacent to Harp's Hall Road;
- Incorporation of landscape/ property buffers on the corner of Meer Dyke Lane and Cow Lake Drove:
- Re-siting of the substation and BESS compound to reduce / remove landscape and noise impacts;
- · Avoidance of impacts on Protected Species;
- Avoidance of watercourse and drains;
- Avoidance of impacts on priority habitat, and
- Avoidance of technical constraints (overhead lines).

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EIA METHODOLOGY

The aim of impact assessment process is to predict if the Proposed Development is likely to result in a significant effect on the environment.

EIA best practice suggests that the significance is assessed based on the combination of the magnitude of impact and the sensitivity of the receptor/resource upon which the impact is occurring. The magnitude (scale) of change/impact is identified and compared to the existing baseline conditions. The sensitivity of the receiving environment to change is determined using professional judgement, consideration of existing designations and quantifiable data where possible.

Each environmental effect is assessed taking account of the predicted magnitude of change/effect and the sensitivity of the receptor as shown in Table 2 below to determine the overall level of significance.

In each technical chapter, a description of the assessment methodology is given together with the existing site conditions. This is followed by an assessment of the likely effects of the proposed development taking into account mitigation measures that are embedded in the development proposals; the consideration of the need for additional mitigation or any recommendations for enhancement measures to reduce or offset any significant adverse effects identified during the assessment; and a concluding assessment on the residual effects that would remain after these measures have been implemented.

Table 2: Matrix for Determining the Significance of Effects								
		Sensitivity of Receptor/ Receiving Environment to Change/Effects						
		High	Medium	Low	Negligible			
Magnitude of change/Effect	High	Major	Major	Moderate	Negligible			
	Medium	Major	Moderate	Minor	Negligible			
	Low	Moderate	Minor	Minor	Negligible			
	Negligible	Negligible	Negligible	Negligible	Negligible			

Major and moderate effects are generally considered to be significant in the context of the EIA Regulations. Minor and negligible effects are not considered significant.

ENVIRONMENTAL EFFECTS OF THE PROPOSALS

This section summarises the key findings or the ES and the significance of potential effects.

Landscape and Visual Impact Assessment

Chapter 5 of the ES considers the likely significant effects on landscape and visual amenity associated with the construction and operation of the Proposed Development. Potential effects during decommissioning have been scoped out on the basis that no significant effects are considered likely.

A combination of photography from a range of locations and contexts, alongside desk-top analysis, Site visits, and professional judgement, has enabled a comprehensive understanding of how the Proposed Development would affect the landscape character and impact on local views.

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Table 3 summarises the significance of effects on landscape and visual amenity from the 14 viewpoints selected for assessment.

Table 3: Summary of Effects on Viewpoint Locations							
VP	Sensitivity	Magnitude	Significance				
01	Medium	No Change	Neutral				
02 (Discounted)	N/A	N/A	N/A				
03	Medium	No Change	Neutral				
04A	Medium	Low	Minor adverse				
04B	Medium	Low	Moderate adverse				
05	Medium	Low	Minor adverse				
06	Medium	Moderate	Moderate adverse				
07	Medium	Moderate	Moderate adverse				
08	Medium	Moderate	Moderate adverse				
09	Medium	High	Moderate adverse				
10	Medium	Low	Minor adverse				
11	Low	No Change	Neutral				
12	Low	No Change	Neutral				
13	Medium	No Change	Neutral				
14	Low	Low	Minor adverse				

The development proposal represents a change to use within the Site and a change in landscape character. The visual openness experienced into the Site and views into the wider landscape will largely decline with the implementation of screening vegetation that may block views. This will be particularly apparent within 1 km of the Site, where views in and out of the Site are more prominent, but less noticeable further away.

Viewpoints 04B, 06, 07, 08 and 09 are considered to have a significant adverse effect due to the proximity of the receptor locations to the Site and the vertical element of the substation. Mitigation efforts will screen the Site partially, however this screening would alter the open nature of the Site.

Neutral effects are largely associated with receptors either at a greater distance from the Proposed Development that are predominantly screened by intervening vegetation or built form, so either the Site will not be visible, or the changes within are not perceivable at distance.

The viewpoints judged to have Minor Adverse effects tend to be located nearer to Site where existing open views of the Site would be replaced by a different view of solar development or fencing with hedgerow in landscape with little existing hedgerow structure.

There is one Landscape Character Area (LCA) identified within the King's Lynn and West Norfolk Borough Landscape Character Assessment directly relevant to the Site setting and study area:

D4 The Fens - Settled Inland Marshes, Emneth, West Walton and Walsoken.

A minor adverse effect was identified on the above LCA relating to landscape character and aesthetics and amenity.

The design and landscaping proposals are considered to alter the landscape character and visual amenity of the area. Whilst this enhances the green connectivity of the Site and screens the Proposed Development from visual receptors, the proposals close in the open Site nature and are not necessarily typical of the local landscape character.

Traffic and Transport

Chapter 6 of the ES considers the likely significant effects on traffic, transport and access associated with the construction phase of the proposed development. Potential effects during the operational and decommissioning stages have been scoped out on the basis that no significant effects are considered likely.

The methodology employed has been informed by several guidance and policy documents, but primarily follows the guidance set out in the 'Guidelines for the Environmental Assessment of Road Traffic (1993)' ('the IEMA Guidelines').

The study area for the assessment of traffic and transport comprises the full extent of the route to be used by construction traffic between the A47 and the two site access points on Harp's Hall Road. This includes the following sections of public road:

- The A47 in the immediate vicinity of the A47 / St Paul's Road South / Lynn Road roundabout;
- St Paul's Road South between the A47 and Harp's Hall Road;
- Harp's Hall Road between St Paul's Road South and the site entrances.

The A47 provides the main strategic route through the area and connects to King's Lynn and the A17 to the north-east, and to Peterborough and the A1(M) to the south-west. The A47 is a trunk road and is managed by National Highways. It is a busy road that caters for high levels of traffic and is considered to be of low sensitivity.

St Paul's Road South and Harp's Hall Road are single-carriageway rural roads, with low levels of traffic. There are numerous houses and farms that take access from these roads, which are considered to be of medium sensitivity.

The potential effects as a result of the Proposed Development during the construction stage can be summarised as follows:

- Increase in HGV movements (bringing in components, plant and machinery);
- Travel to and from the site by construction staff (in LGVs and private cars); and
- Increase in delay to vehicles, pedestrians and cyclists as a result of increased traffic levels.

The impact on the A47 is expected to be **Negligible**, and no detailed assessment has been undertaken. Given the expected low baseline traffic flows on St Paul's Road South and Harp's Hall Road, it has been assumed that the increases in traffic levels will be above the 30% threshold stipulated by the IEMA Guidelines, and detailed assessment of potential environmental effects has been undertaken.

No significant effects were identified in the detailed assessment of these two roads. The following effects were identified for both roads:

- Severance- negligible effect;
- Driver Safety- minor effect;
- · Pedestrian Delay and Amenity- minor effect;
- · Accident and Safety-minor effect; and
- · Dust and Dirt- negligible effect.

While not necessary to address the environmental effects associated with the increase in traffic within the study area (in terms of EIA Regulations), a CTMP will be implemented as a 'good practice' measure.

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The Framework CTMP identifies mitigation measures that will be implemented. These include:

- Five proposed passing places on the construction delivery route, three on St Paul's Road and two on Harp's Hall Road.
- A 10mph speed limit for construction traffic on Harp's Hall Road.
- Temporary signage on St Paul's Road and Harp's Hall Road, to warn other vehicles, pedestrians and cyclists of the presence of construction traffic; and
- Numerous good practice measures to manage deliveries to the site, and to minimise the impact upon local residents and other road users.

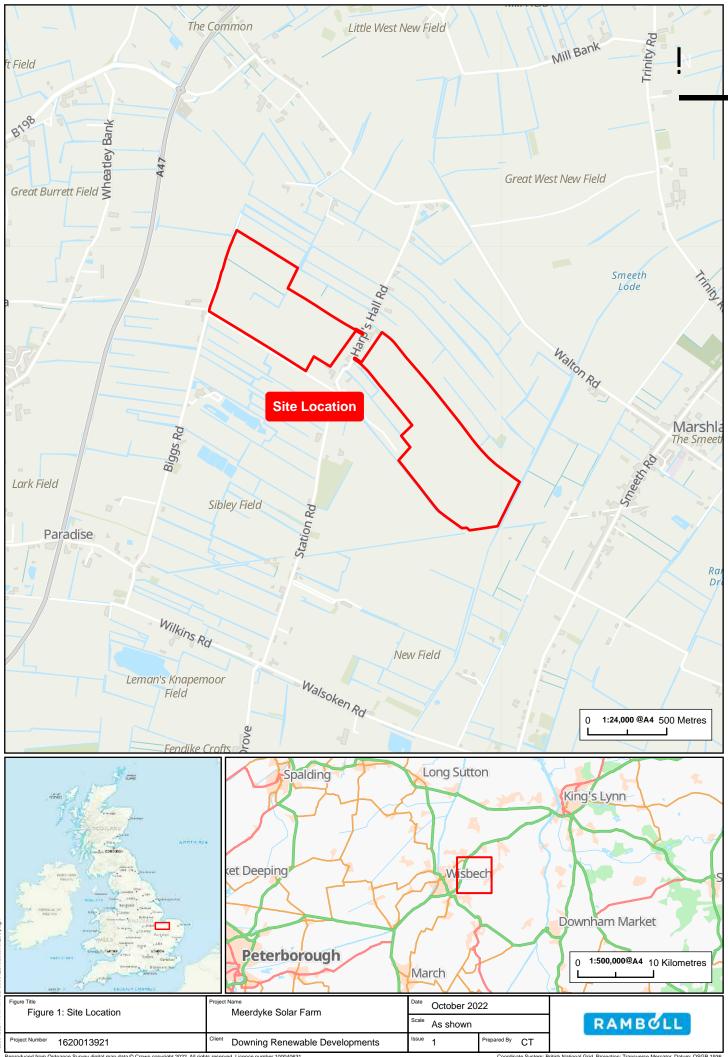
Implementation of a CTMP as a good practice construction measure would ensure efficient transportation of construction materials to minimise the effects and disruption to the local area.

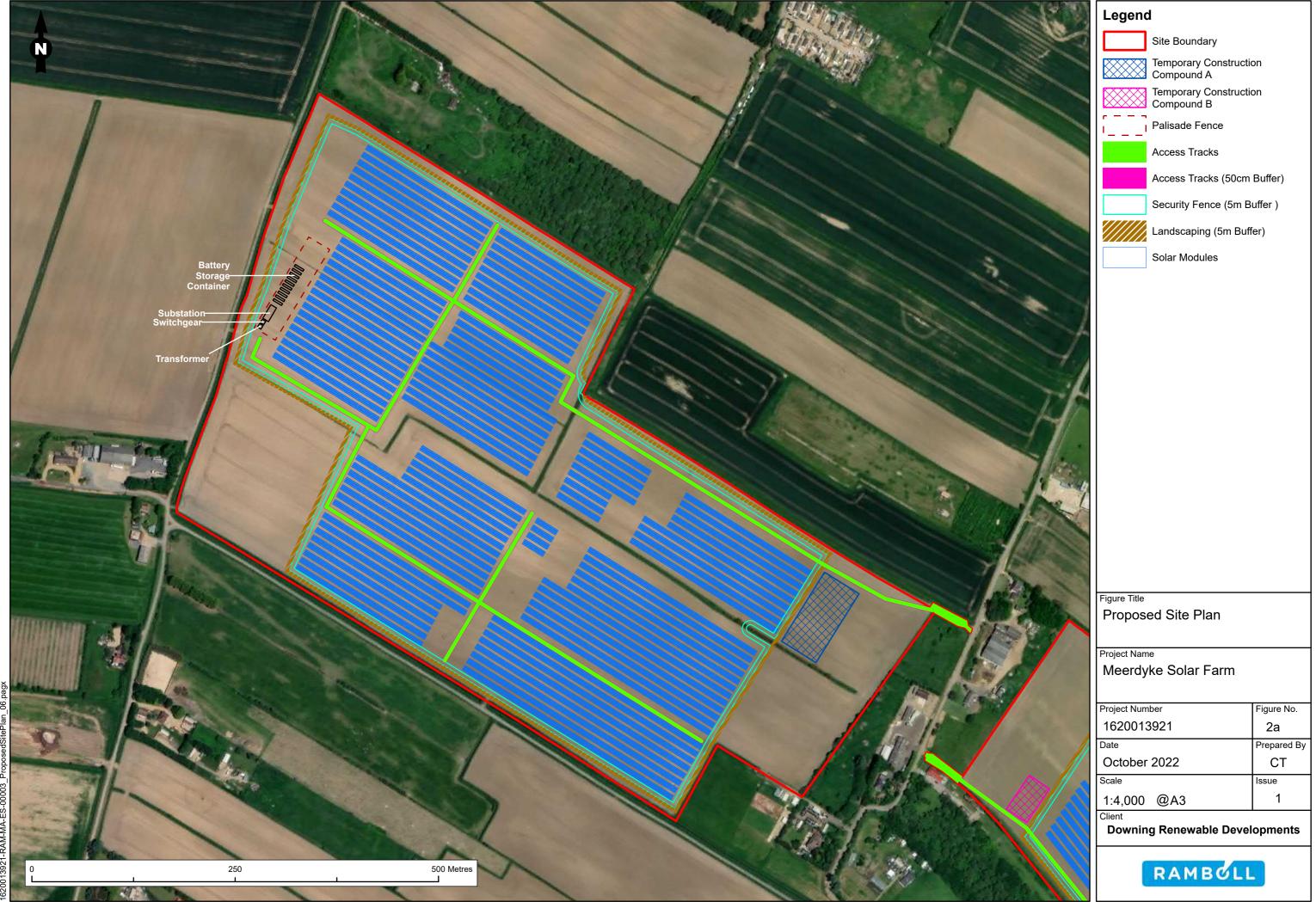
Table 4: Summary of Potential Significant Effects of the Proposed Development							
Likely Significant Effect	Mitigation Proposed	Means of Implementation	Outcome/Residual Effect				
Construction							
None	СТМР	Through the adoption of the CTMP	Not Significant				
Cumulative Construction							
None	СТМР	Through the adoption of the CTMP	Not Significant				

SUMMARY

As a result of a combination of design-led mitigation and additional proven construction phase mitigation measures, the ES concludes that likely significant effects associated with the proposed development, alone and in addition to other solar developments, are limited to landscape and visual effects, during the operational phase of the Site.

No residual significant effects are identified for transport. Moderate significant residual effects are anticipated for five of the fourteen viewpoints assessed.

















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