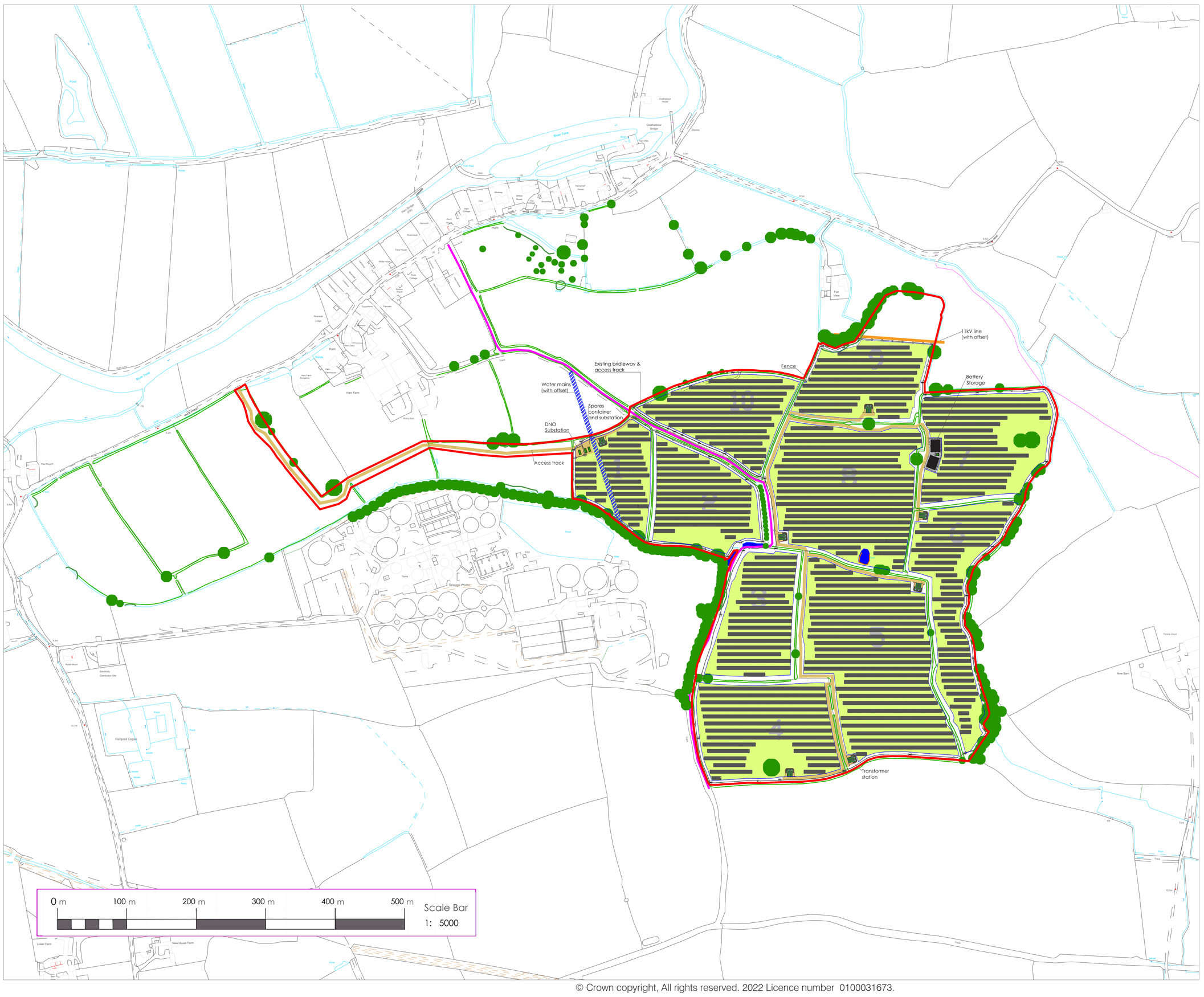
Ham Farm Solar and Storage

Proposed Site Location and Layout



KEY:

- Development Boundary
- Solar Area
- PRoW
- Access track
- Fence
- CCTV Camera
- Access Gate
- Existing Trees
- Existing Vegetation
- Solar Cells
- Transfomer station

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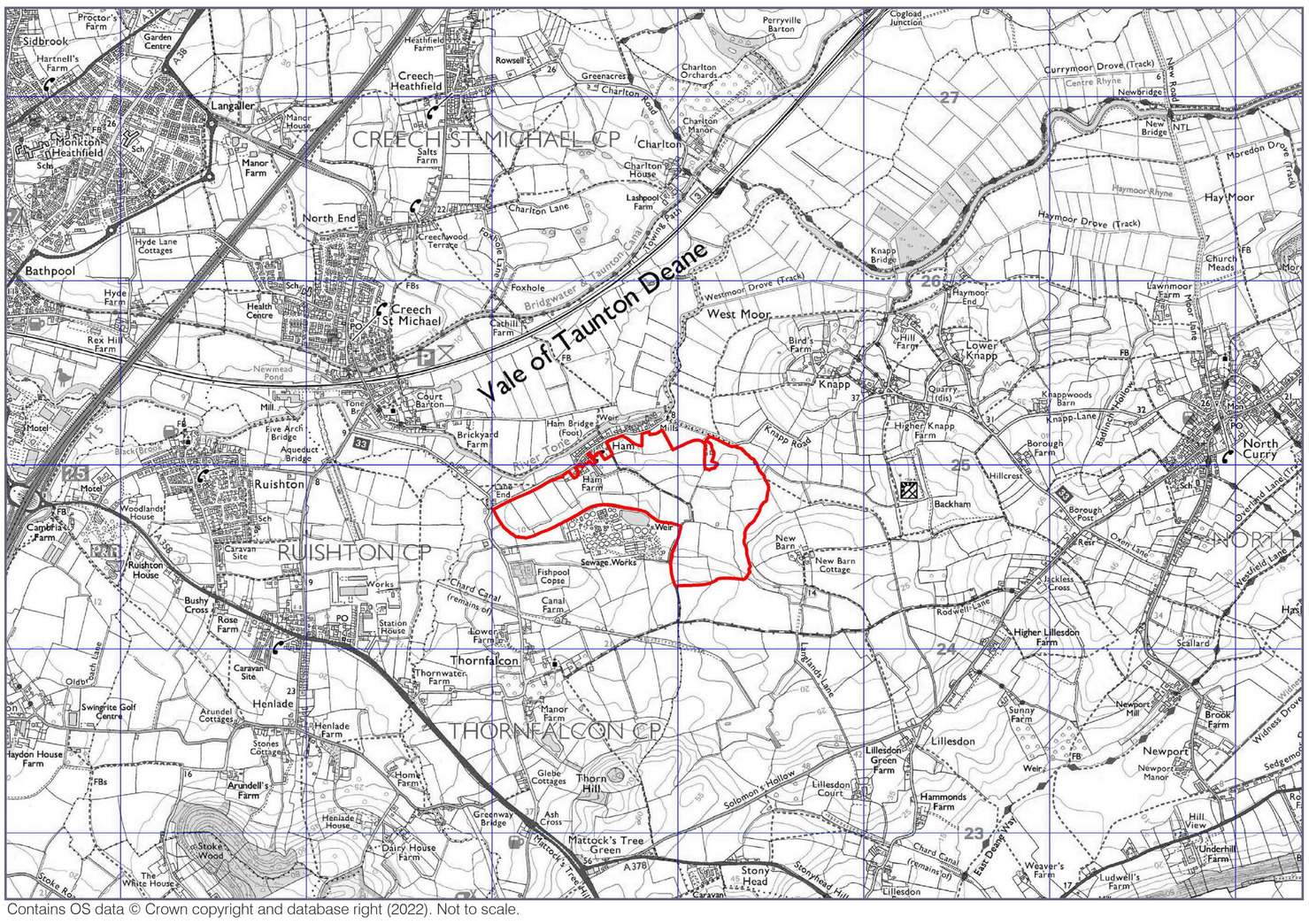
The proposed solar array and battery energy storage system is located on land south-east of Creech St Michael and south of Ham, as shown on the map to the right.

The site has been carefully selected and designed during a detailed assessment process considering grid availability and solar irradiance, heritage, landscape & amenity, ecology and environmental designations, access and agricultural quality.



Ham Farm Solar and Storage

The Proposal

Solar Array: The solar array is proposed to consist of ground-mounted solar photovoltaic panels covering approximately 26 hectares with a power output of 21.8MWp, typically generating 23 755MWh per year.

It is currently estimated prior to layout optimisation that the solar farm will be sufficient to offset the equivalent annual energy needs of approximately 5 925 homes[1] in Somerset and West Taunton. It is also predicted that the solar farm will save 4 992 Tonnes of CO_2 per year[2].

Frames, Panels and Inverters: The solar panels will be mounted with a maximum height of approximately 3m using frames fixed to the ground with piled posts or ground screws. Surface mounted feet may be used in specific areas where ground disturbance should be avoided. The solar panels generate Direct Current (DC) electricity, which is converted to electricity with Alternating Current (AC) by power inverters mounted on the back of the solar panels at intervals.

Battery Energy Storage: The modular battery system would be rated at up to 20MWh and would be capable of providing a 10MW output over a 2 hour period. Eight containerised batteries will be accompanied by two inverters. Each container will be approximately 12.8m x 2.4m x 3.5m.

Buildings: Transformer units (approximately 10.5m overall x 3.5m x 3.0m) will be required for each section of the solar farm to step the voltage up to the export level. A substation (approximately 6.1m x 2.4m x 2.6m) will connect the solar farm to the electricity network and meter production. All electrical cabling to the substation will be underground. Container size buildings provide storage. It is proposed that all buildings have a green or dark brown finish.

Access Tracks: Existing tracks will be used where available. New access tracks will be 4 metres wide and built of crushed stone over a geo-textile membrane, no concrete will be required. Tracks will be allowed to grass over once construction is finished.

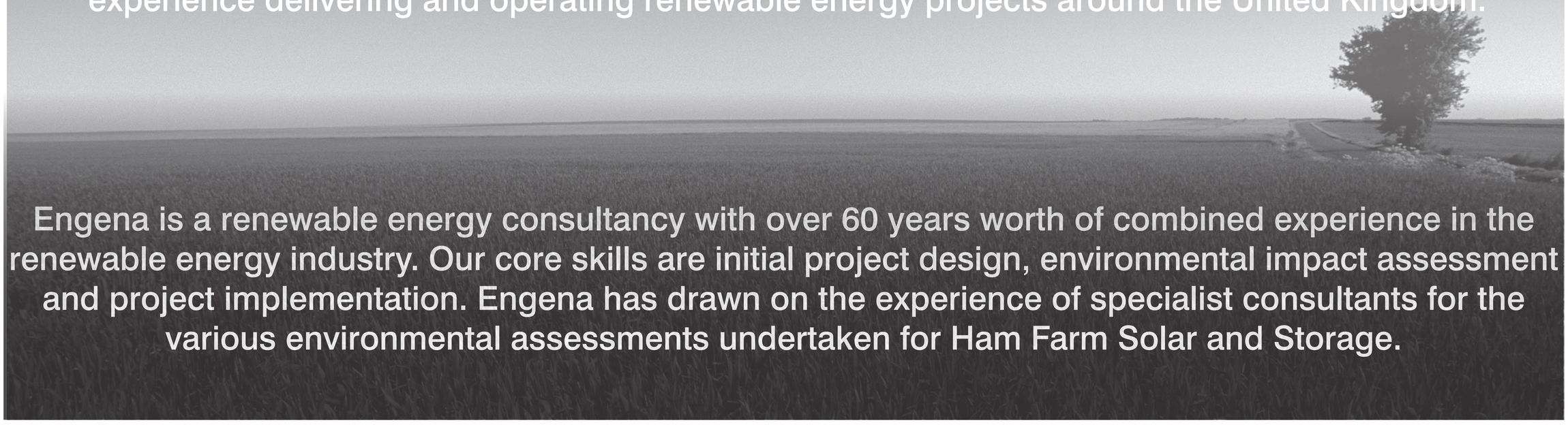
Security: A perimeter fence will be approximately 2 metres high, consisting of wooden posts supporting traditional wire stock fencing to match the local vernacular as required by the local authority.

*1 Stated figure is calculated using the Domestic Energy Map (http://www.domesticenergymap.uk), based on average domestic consumption per household of 4 009kWh in Somerset and West Taunton. 2. https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020. NB. All figures reported to 3 significant figures unless stated otherwise.

Ham Farm Solar and Storage

The Project Team

Novus Renewable Services is a leading UK solar PV development company.
We are working in partnership with Innova Group who will build, own and operate the Solar Farm.
We have been active in the development of solar projects since 2010. Our team have extensive experience delivering and operating renewable energy projects around the United Kingdom.



Engena is a renewable energy consultancy with over 60 years worth of combined experience in the renewable energy industry. Our core skills are initial project design, environmental impact assessment and project implementation. Engena has drawn on the experience of specialist consultants for the various environmental assessments undertaken for Ham Farm Solar and Storage.

The assessment team for this project include:

Landscape - Anne Priscott Associates
Land Quality - Kernon Countryside Consultants
Cultural Heritage and Archaeology - Orion Heritage
Ecology/Arboriculture - Tyler Grange
Hydrology - RAB Consultants
Noise - Ion Acoustics
Glint and Glare - Neo Environmental

The Development Process of a Solar Farm

Site Selection, Site Design and Layout

Project Screening and Scoping

Identifying the scope of the environmental studies with the Council and the project's statutory consultees

Public Consultation

Including a local exhibition to explain the project

Assessments

Including assessment of the potential impact of the proposed development on archaeology, ecology and the visual effect on the landscape.

These individual assessments are then written up into a comprehensive Environmental Report which is submitted with the planning application.

Planning Application

A decision on the outcome of the project should be made by the Local Planning Authority within 8 weeks of submission

Financial Close

Construction contacts are tendered and finalised, planning conditions discharged and project finance secured

Project Construction

A typical construction programme would take approximately 4 months

Ham Farm Solar and Storage

Environmental Report

The Environmental Report will collate all the assessments undertaken to support the planning application.

The scope of the assessments have been agreed with the local planning authority and their statutory consultees through formal pre-application consultation process and is also advised by national planning guidance.

Preliminary Environmental Survey Results

ECOLOGICAL SURVEYS

A typical assemblage of farmland species have been observed. Enhancements will encourage wildlife within the site.
The hedgerow network will be retained and reinforced and the site seeded as meadow.

LANDSCAPE & VISUAL

The fields vary in scale across gently undulating terrain. Established trees, hedgerows and Ham sewage treatment works provide good screening. A Landscape and Visual Impact Assessment is underway.

CULTURAL HERITAGE

No designated heritage assets are located within the proposed development. A geophysical survey of the site has identified few archeology features. The assessment will include listed buildings and historic built-form.

HYDROLOGY, GEOLOGY AND SOILS

The infrastructure is located outside of areas of high risk of flooding. The land is currently grazed and will continue to be grazed.

TRAFFIC AND TRANSPORT

Access to the site will be from the A358 at Lipe Lane to an existing field entrance on White Street and therefore no traffic through the village of Ham. Traffic will avoid peak hours. Advance notification will be provided ahead of the 16-week construction period.

NOISE

Modelling is underway to assess the potential noise impacts during construction and as a result of electrical infrastructure during operation. There is expected to be low to negligible impact. Mitigation measures can be applied if necessary.

Ham Farm Solar and Storage

Enhancements and Benefits

In addition to the renewable energy generation benefits, and associated savings in Carbon Dioxide and other greenhouse gas emissions, the Ham Farm Solar and Storage project will bring a number of other environmental and community benefits to the surrounding area.

Our Community Promise

We believe it is important that local communities share in the benefit our project brings. For all our solar projects we offer a community benefit fund, which can be used to support local projects and priorities and work with our host communities to agree the best way to provide and administer that fund. Every year the 21.8MWp Ham Farm Solar and Storage project will contribute £250 per MWp plus a further £100 per MWp charitable donation for the whole 40 year lifetime.

Boosting Biodiversity

A bespoke biodiversity strategy is being prepared that ensures existing and new habitats are enhanced or created to benefit local wildlife. As part of this initiative, our landscape planting, seeding and habitat creation plans will focus on native species. These initiatives will contribute to securing long term biodiversity net gain across the site.

Right of Way

Bridleway access is retained and fences are set back leaving a wide Green Lane with new hedgerow planting.

Land Use

The installation has been designed to leave spaces around the site boundaries and between the rows of panels to avoid shading and maximise electricity generation. This will leave the majority of the fenced solar array area as uncovered grassland suitable for grazing.

Sensitive Design

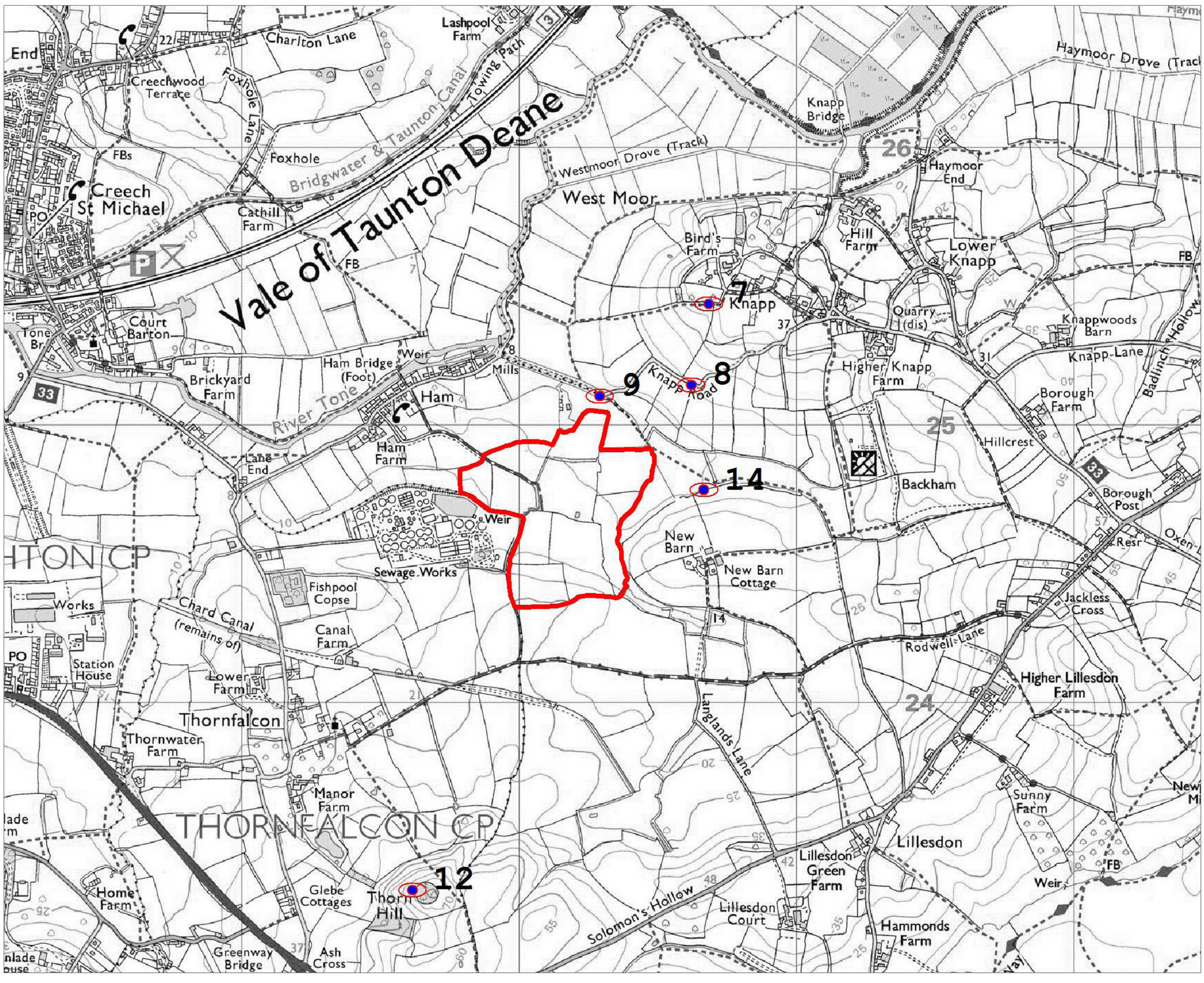
The iterative design process has informed a layout which provides a buffer from adjacent land uses and potential receptors of the site.

Ham Farm Solar and Storage

Visualisations

These photomontages, produced for exhibition purposes, are intended to illustrate the scale and location of the proposal through a representative selection of viewpoints agreed with the Local Planning Authority. They are produced using Ordnance Survey terrain data to accurately locate the solar farm over the existing view.

These viewpoints form a small part of a larger landscape and visual assessment which has been undertaken, focussing on a 5km study area around the site to identify all significant impacts upon landscape and visual amenity from the proposal. A larger number of viewpoints have been agreed with the Local Planning Authority and we are presenting an indicative selection.

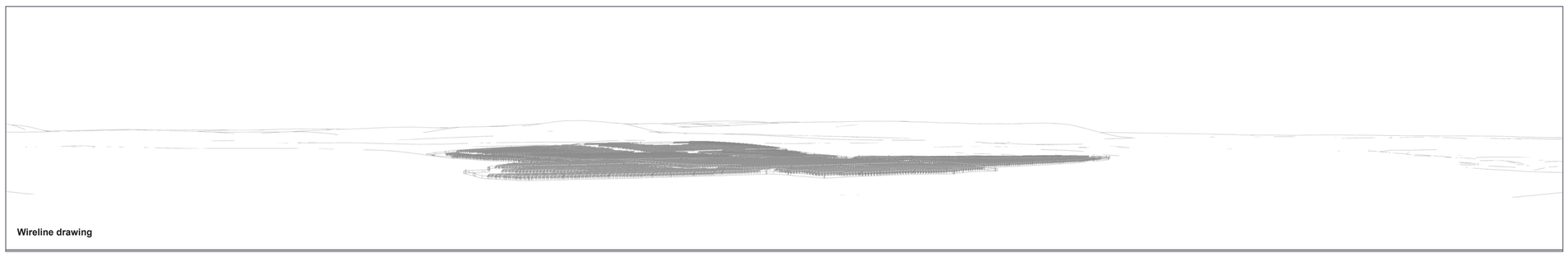


Visualisations

7 View looking south-west from the public right of way running through Higher Knapp towards the solar farm

Existing View

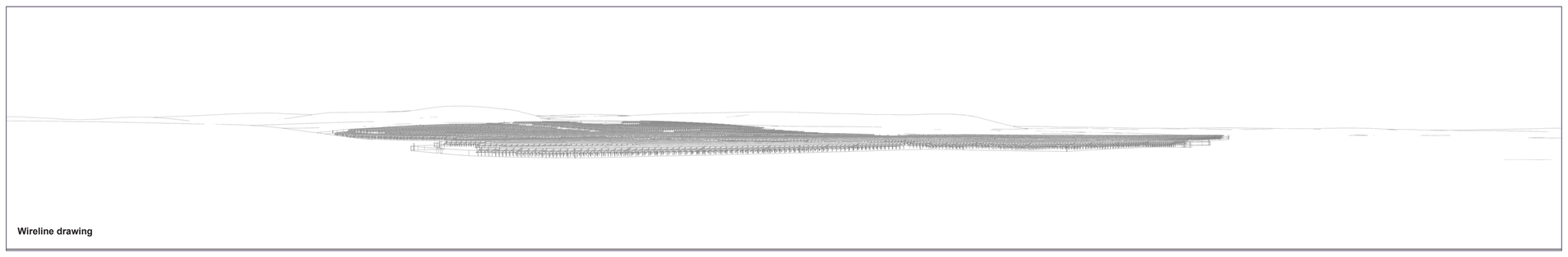
Wireframe Model



8 View looking south-west from Knapp Hill road towards the solar farm

Existing View

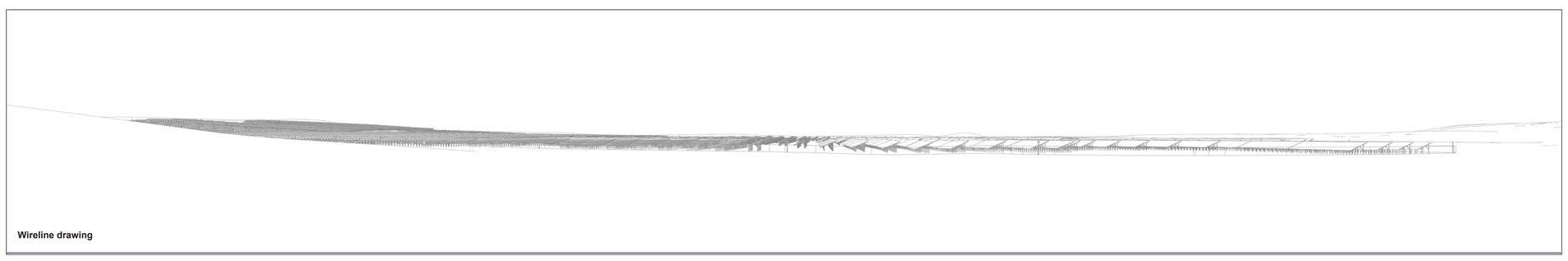
Wireframe Model



14 View looking west towards the solar farm from the public footpath between Knapp Road and New Barn

Existing View

Wireframe Model

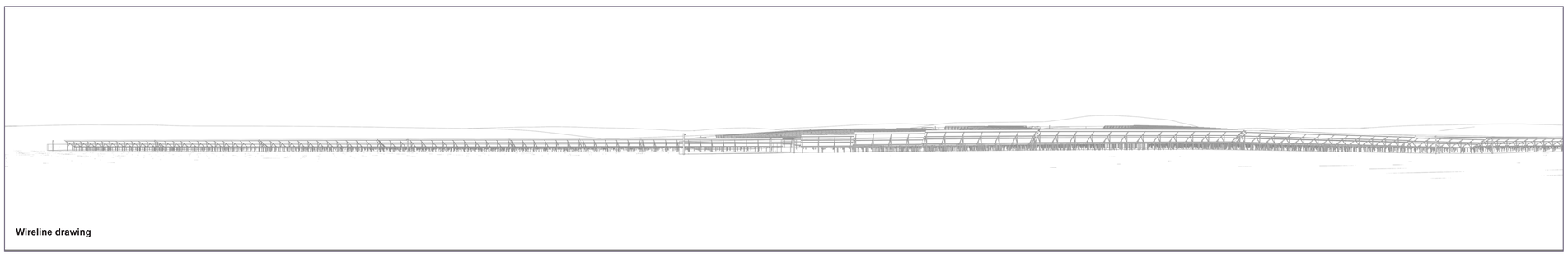


Visualisations

9 View looking north-west from north-south running public right of way crossing within the solar farm

Existing View

Wireframe Model



Predicted View

VIEWPOINT 9: **View looking north-west from north-south running public right of way crossing within the solar farm**

Ham Farm Solar Farm

OS reference: 329289E 125106N
AOD: 9m
Direction of view: 180°
Nearest solar panel: 129m

Visualisation Type: Type 3
Horizontal field of view: 90° (cylindrical projection)
Vertical field of view: 25°
Enlargement factor: 96% @ A1

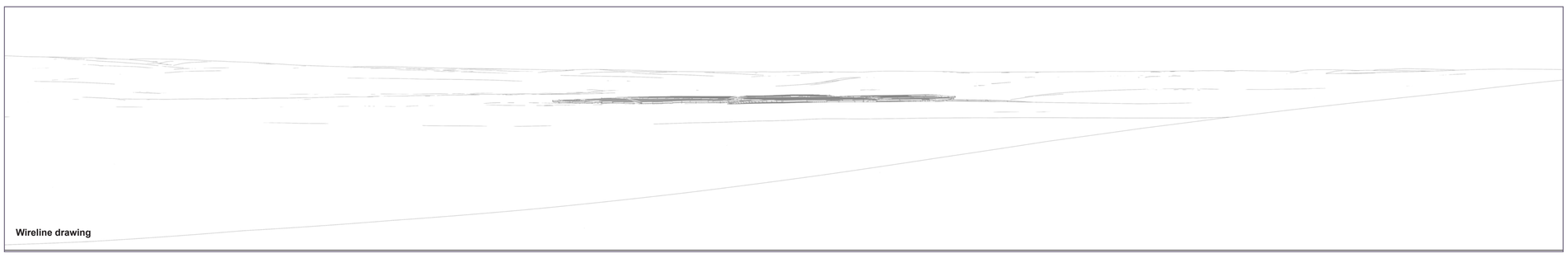
Camera: Canon 5D Mk II
Lens: Canon 50mm FFL
Camera height: 1.5m AGL
Date and time: 24/03/2022 15:53

Prepared by New Visual Solutions Ltd for Engena Ltd

12 View looking north east from Thorn Hill beacon

Existing View

Wireframe Model



Predicted View

VIEWPOINT 12: **View looking north east from Thorn Hill beacon**

Ham Farm Solar Farm

OS reference: 328611E 123314N
AOD: 71m
Direction of view: 20°
Nearest solar panel: 1103m

Visualisation Type: Type 3
Horizontal field of view: 90° (cylindrical projection)
Vertical field of view: 25°
Enlargement factor: 96% @ A1

Camera: Canon 5D Mk II
Lens: Canon 50mm FFL
Camera height: 1.5m AGL
Date and time: 24/03/2022 15:01

Prepared by New Visual Solutions Ltd for Engena Ltd