



**STATERA**  
BALANCING THE GRID

# East Claydon Battery Storage Scheme

## About Statera

We develop energy infrastructure to balance a high renewables electricity system.

We still need electricity when the wind isn't blowing and the sun isn't shining. If we want a future of clean energy from renewables, we need to store it to balance peaks and troughs. Otherwise, we are dependent on fossil fuels and nuclear to fill the gap.

### Why we exist

The amount of renewable energy generation forecast to be installed in the UK by 2035 needs a transformation in how the grid operates.

### How we're doing it

We build, own and operate flexible energy infrastructure that balances grid supply and demand.

### What we do

Our projects decarbonise the electricity system, while ensuring greater energy security.



Existing East Claydon substation which the proposed scheme will connect to.

## Purpose of the exhibition

- View our updated plans before the formal application is submitted
- Update on construction traffic route
- Provide contact details and explain how you can keep in touch

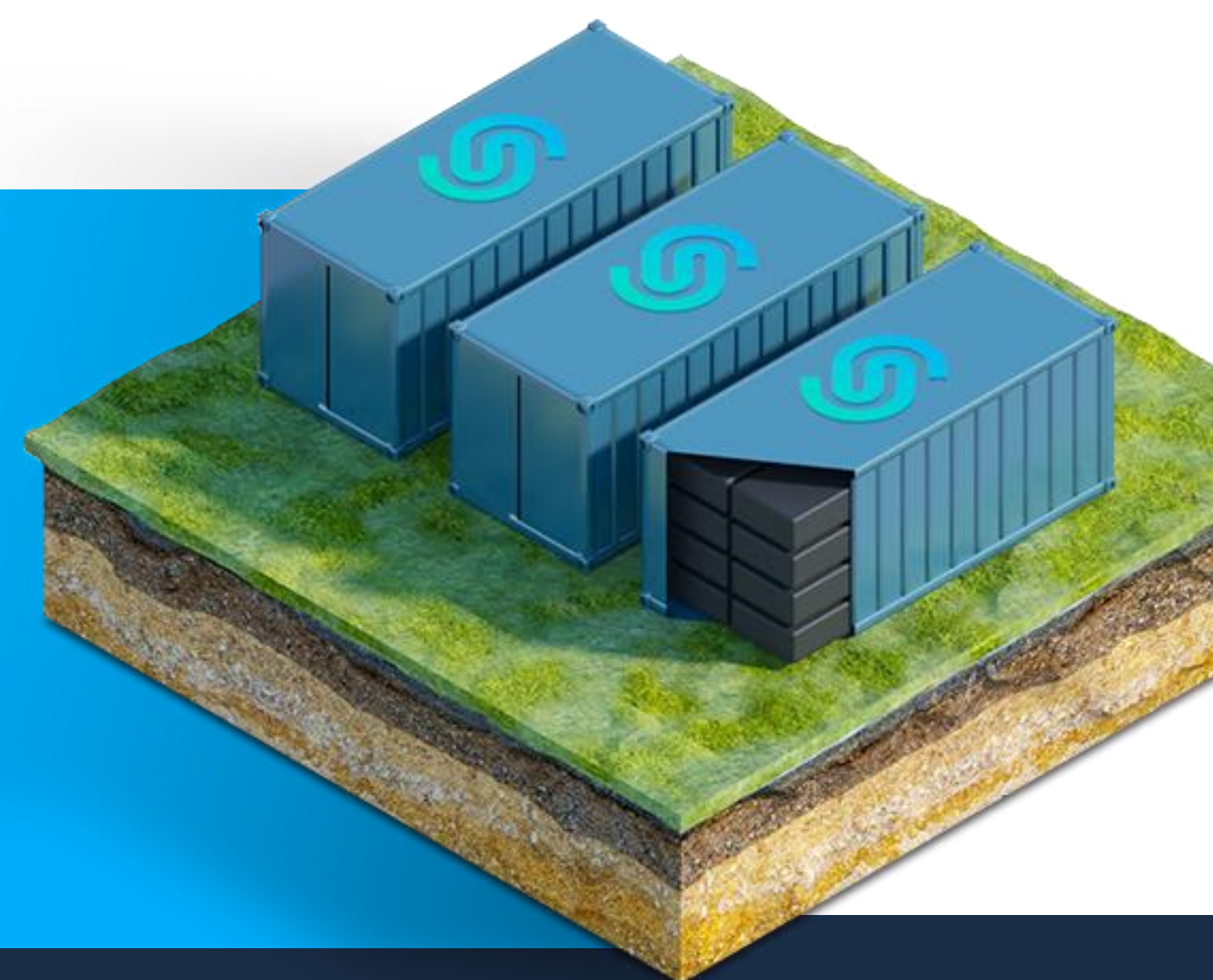


# What is battery storage?

Storage technologies enable energy from renewables like solar and wind to be stored and then released when customers need power most.

Our electrical system requires short, medium and long term storage;

- Batteries – Short
- Pumped Hydro – Medium
- Hydrogen – Long

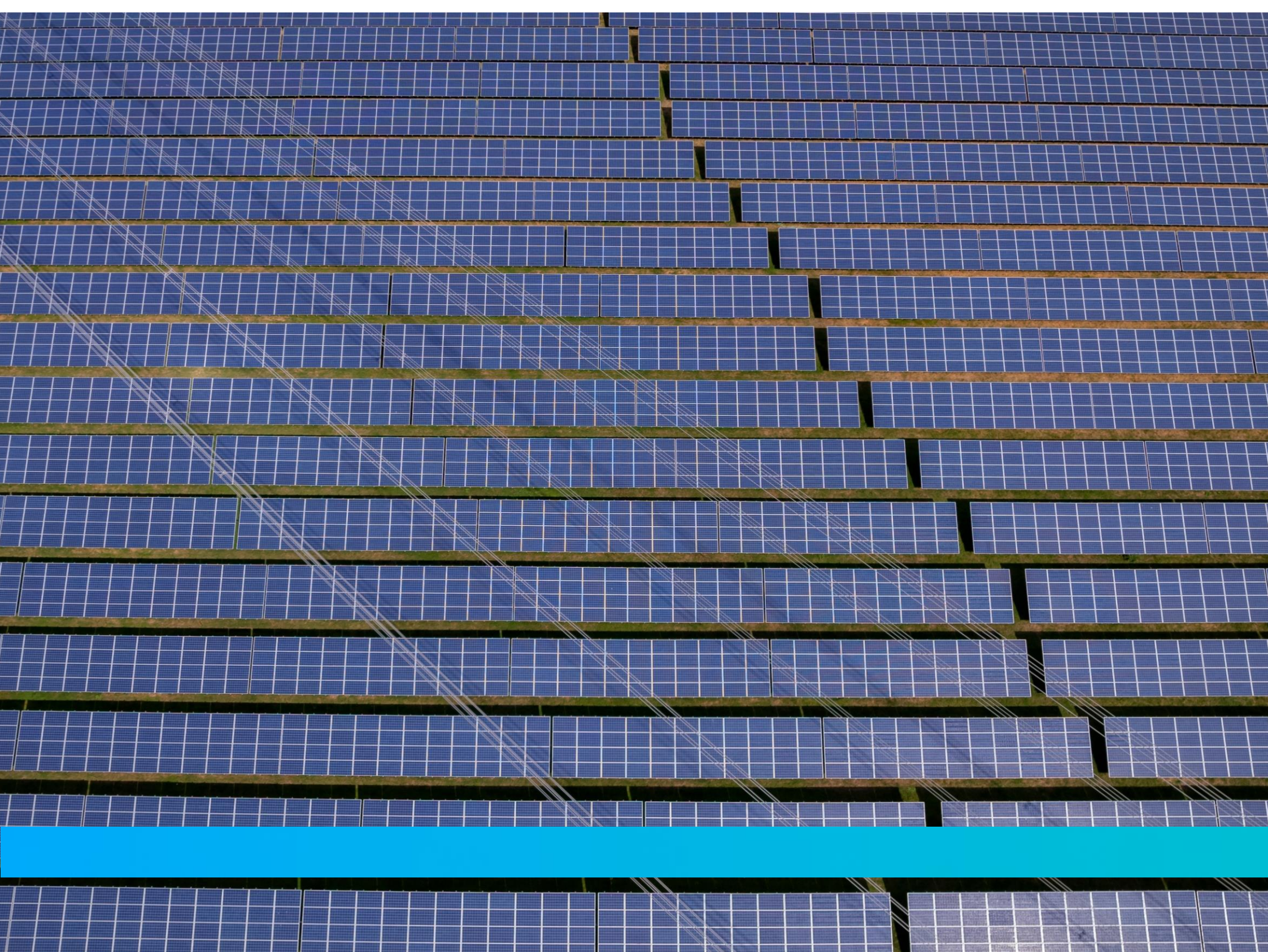


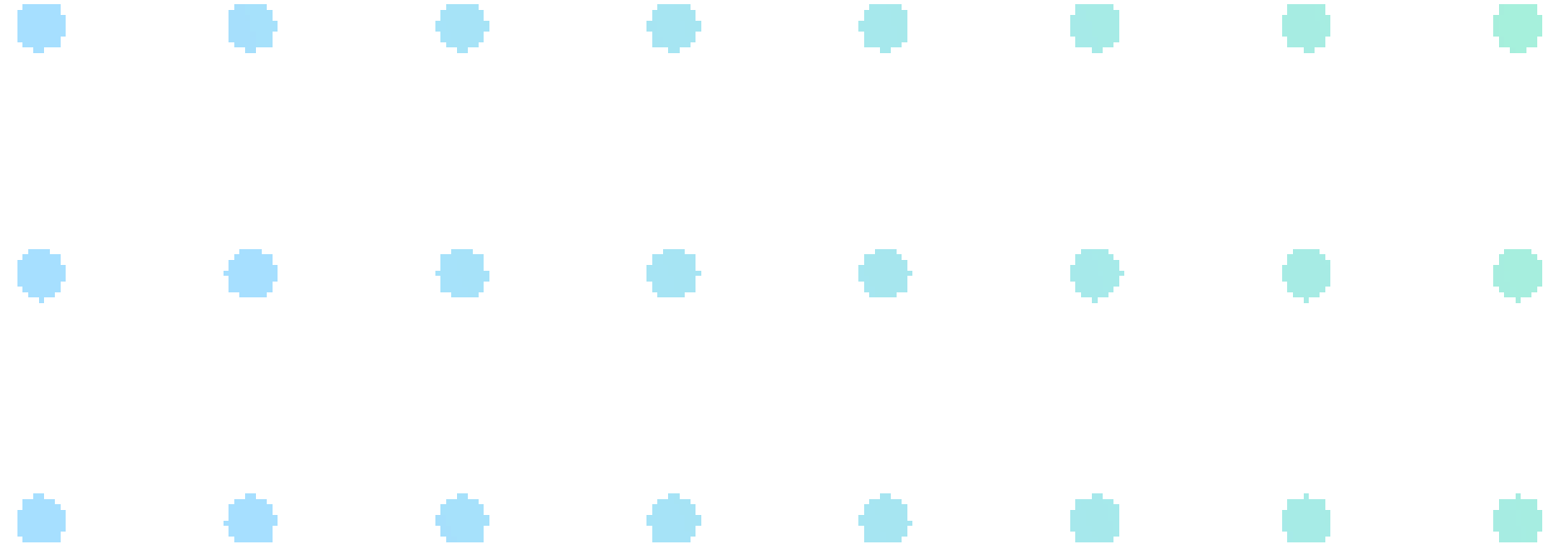
Batteries are a fundamental energy storage technology used across a range of applications. The lithium-ion batteries found in smartphones, laptops and electric vehicles are the most widely known. However, on a larger scale, Battery Energy Storage Systems (BESS) provide services to electricity networks.

Batteries use electricity to charge when there is surplus energy or low demand and they also transfer energy back to the grid in times of high demand. As renewable energy generation increases, BESS provide a more important service to the grid and to large scale electricity users.

## Energy storage is an essential component to a modern grid system:

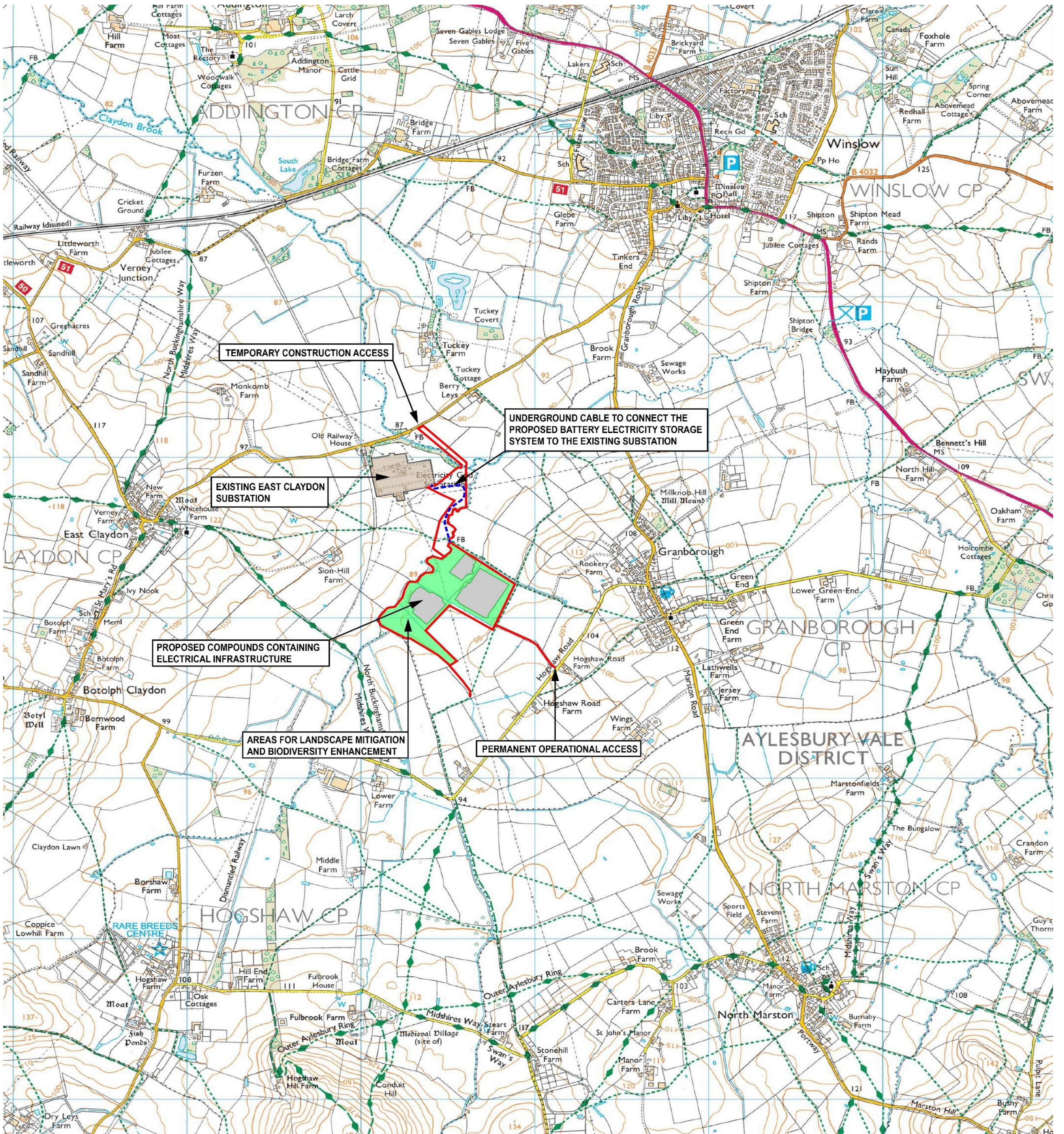
- Allowing surplus energy generated at off peak times to be stored for later use – increasing efficiency.
- Integrating renewable generation from across the UK into the electricity system.
- Rapidly responding to power fluctuations within networks to maintain system stability.





# Location

The site is located on agricultural land to the south of the existing East Claydon substation and to the north of Hogshaw Road in Granborough.





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# Project overview

## Important project details:

- This a battery storage scheme only – there is no solar proposed.
- It has a capacity of up to 500MW for approx. 7 hours
- It connects into the existing East Claydon substation.
- It is separate from all solar schemes proposed locally.

## Battery storage

**Statera Energy is seeking planning permission to develop a battery energy storage system (BESS) on farmland to the south of the existing National Grid East Claydon substation.**

The battery development will span approximately 10.75 hectares. An additional 15.49 hectares will be established for landscape and biodiversity enhancement, this represents over 59% of the total site area. Our battery systems are designed to deliver an efficient and reliable service that can adapt to various energy market conditions. The BESS we develop can provide super-fast, sub second responses to demand and generation changes on the grid.

Deploying batteries at this large scale can realistically only be done next to existing National Grid substations, because it is uneconomic to run these cables great distances. This scheme will connect to the substation at 400kV.





# Project status

## Key updates:

- Pre-application advice from the Council has been received.
- The application will include a full Environmental Impact Assessment.
- A temporary construction access from East Claydon Road has been secured.
- A permissive footpath around the biodiversity enhancement area.
- Improved emergency access.



	<b>Legend</b> Site boundary Existing trees Existing hedgerows Proposed native broadleaved woodland New native scrub planting Hibernian/ulna habitat piles New substation compound 2.5m high wild-mesh security palisade fencing Crushed stone access track 5.5 wide crushed stone access track Existing hedgerow removed Solitary bee habitat Attenuation pond Loose permeable gravel Wildflower grassland Retained grassland Enhanced wet meadow Standing piles/deadwood Wildlife pond Proposed hedgerow planting Public Right of Way Proposed tree Proposed orchard tree Kissing gate Flood zone 2 Flood zone 3 Source of water for irrigation trees during periods of inadequate rainfall 4m high infrared CCTV gate Footbridge 1.5m high post and wire stock fence Permissive access to nature reserve area for the operational life of the facility Temporary construction haul road and contractors compound Indicative drainage channel Inverter building with biodiverse roof (total 37) Transformer (total 74) Battery container (total 888) Storage container Control room (total 7) Water tank (total 5)	Revision Date Comment	ON BEHALF STATERA DATE: 15 February 2023 SCALE: 1:2,000 @ A1 DWG No: SL281_L_X_GA_1 APPROVED: CMcD	PROJECT EAST CLAYDON BESS TITLE MASTERPLAN
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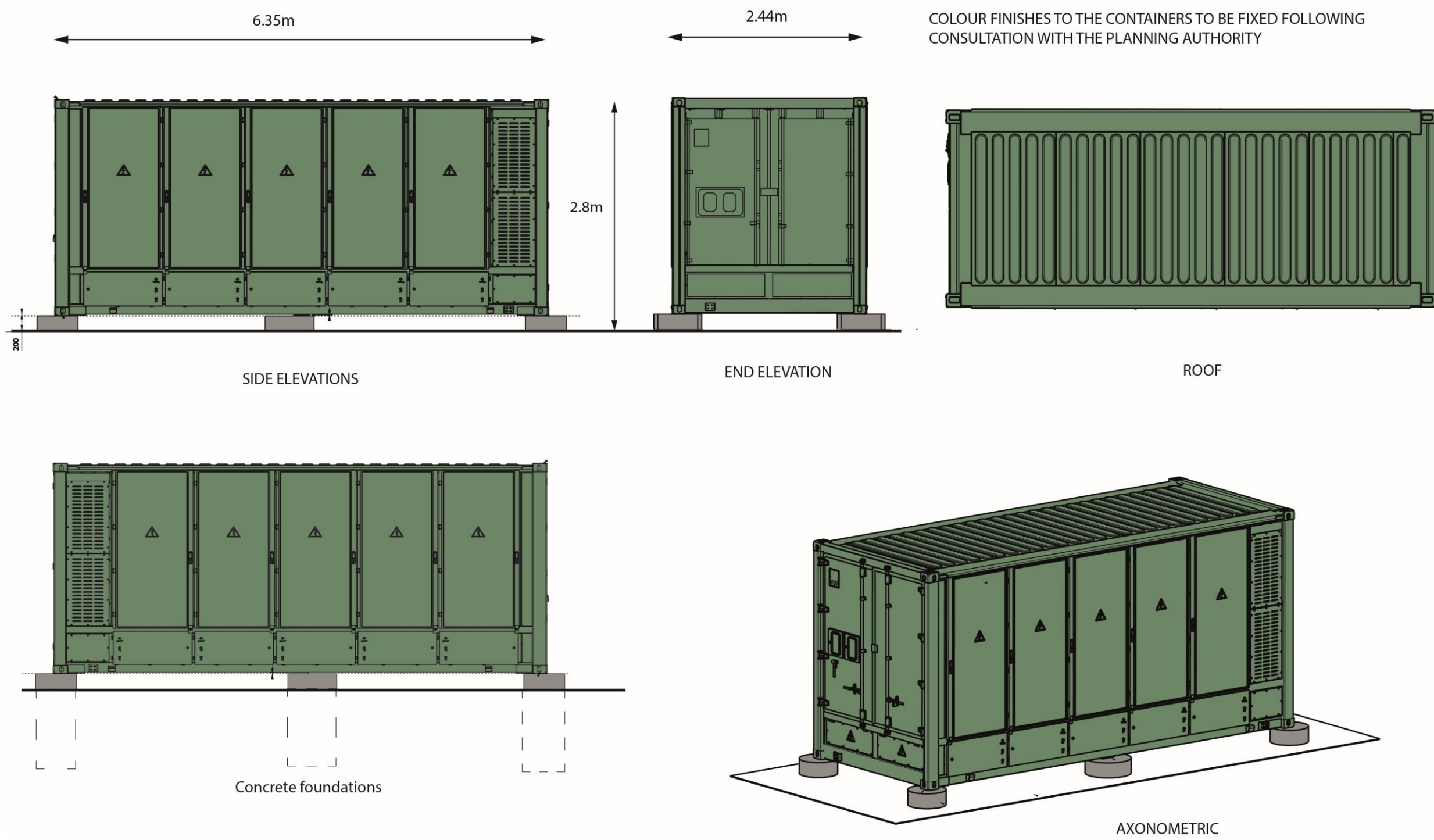
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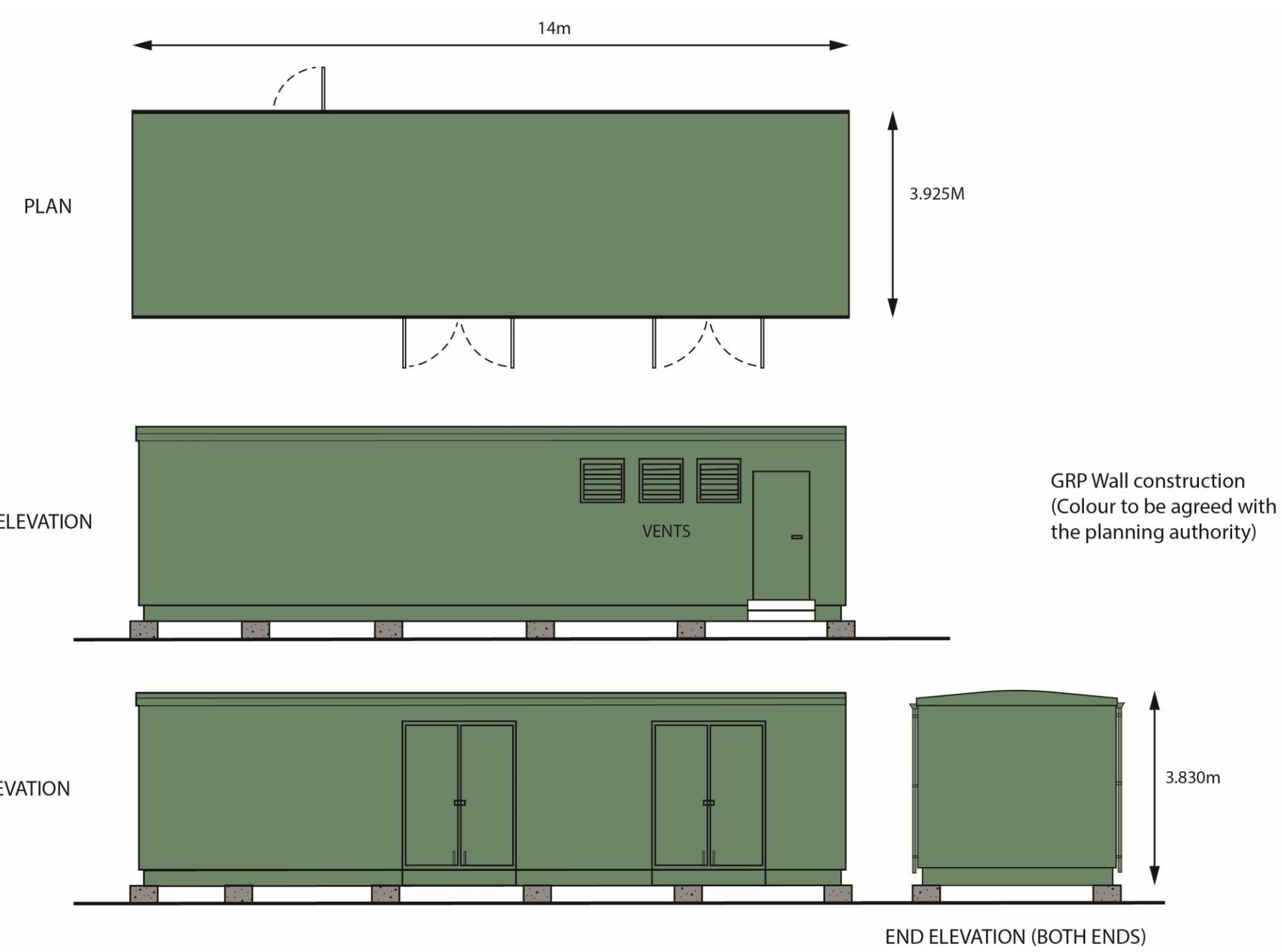
# Electrical Infrastructure

## Battery Containers

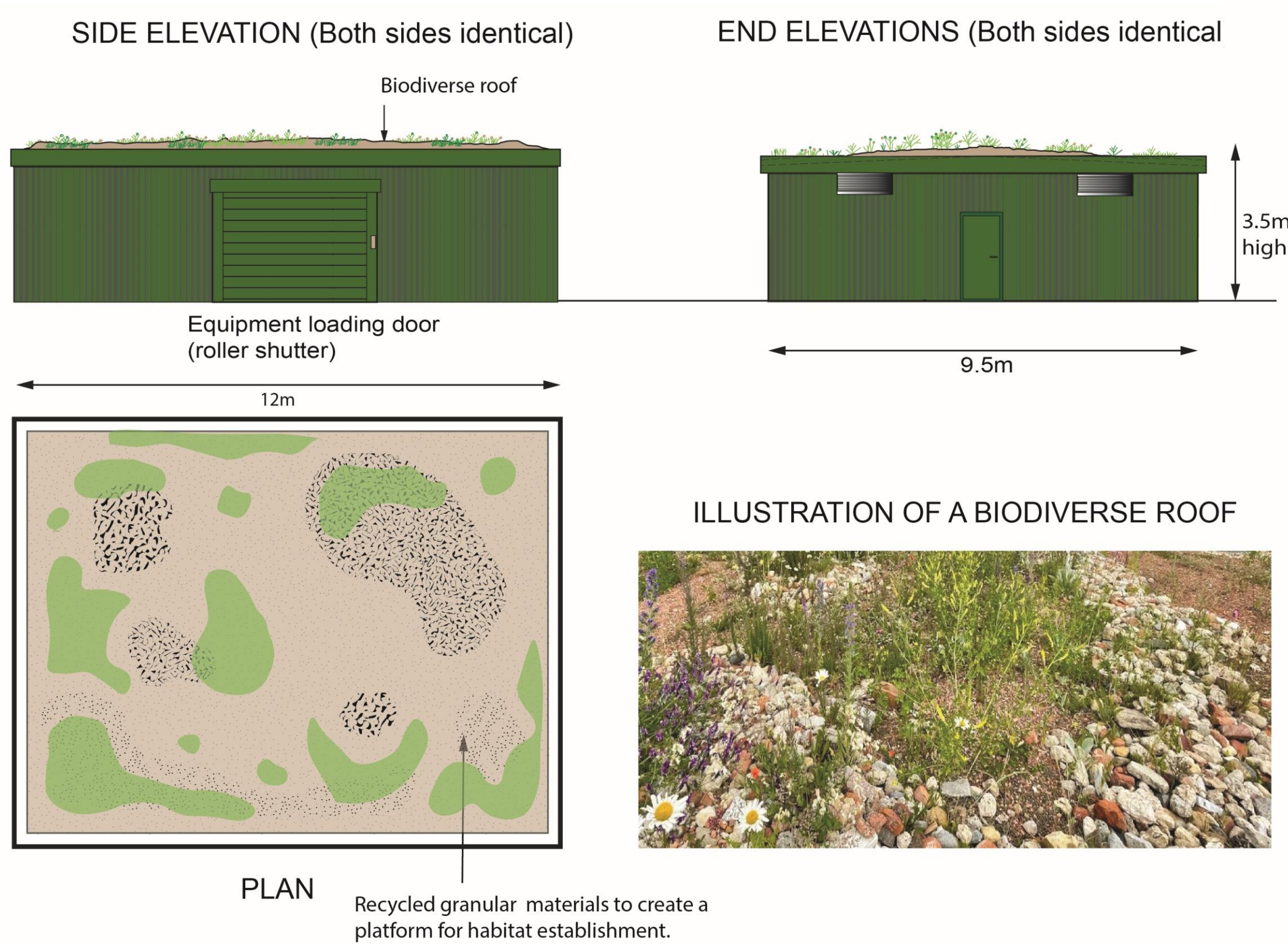


NOT TO SCALE

## Control Rooms

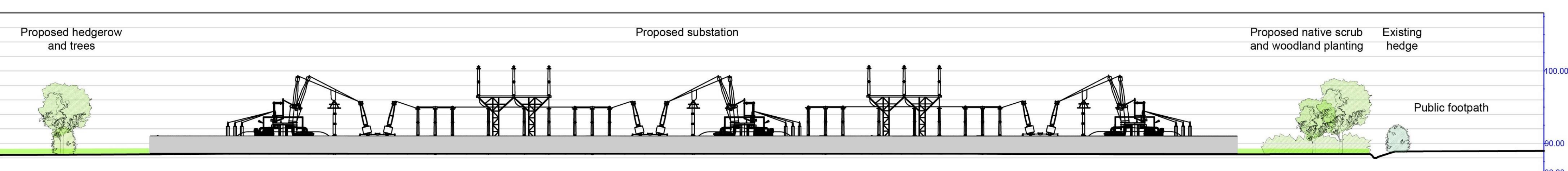


## Inverter Buildings



The buildings are designed with sound insulation to mitigate the noise of the inverters

## Customer substation





# Biodiversity Enhancement



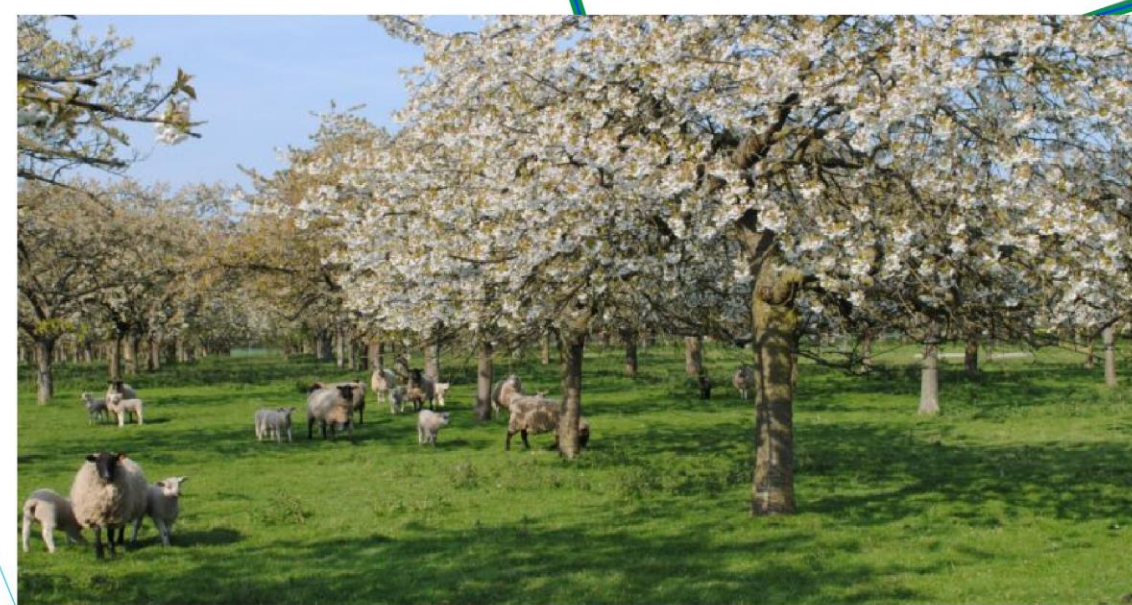
Woodland and scrub will be established to create a range of habitats and reduce the visibility of the electrical infrastructure



Existing ponds will be restored and new ponds created



Permissive paths will allow public access along the brook, passing through biodiverse grassland



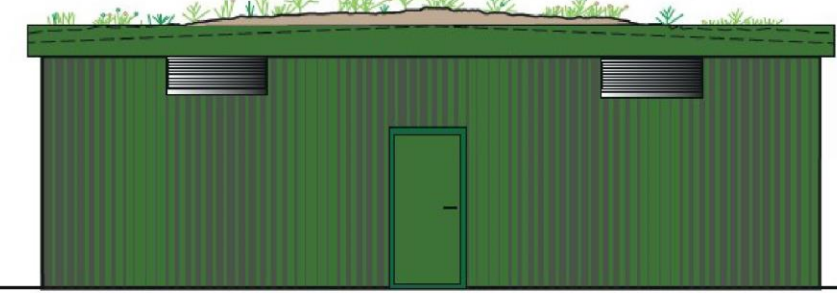
A traditional orchard will be established by the brook



The farmland is well suited to establishing fast growing, large stature trees such as poplar, willow, and alder. These will ensure rapid screening and benefit wildlife.



Wildlife features will be installed such as beetle and bee banks, nest boxes and hibernacula



The inverter houses will feature biodiverse roofs which will benefit wildlife and reduce visual impact





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## Ecology and Biodiversity Net Gain

Statera is working with Future Nature, the local wildlife trust's Ecological Consultancy, to design the wildlife areas and maximise the enhancement of biodiversity within the site. The majority of the site is currently arable farmland which limits the opportunities for wildlife, but land adjacent to the tributary of the East Claydon Brook offers huge potential as a nature area. It is proposed to establish wildlife ponds, wildflower meadows, scrub, woodland, brook side trees (such as the native black poplar) and an orchard.

A permissive path will be established alongside the brook which will connect with Public Right of Way GRA 1/2 in the west and GRA 2/1 in the east. Access will also be permitted throughout the nature area, but only outside the bird nesting season, to protect ground nesting birds, such as skylarks.

The inverter houses will have flat roofs, covered by a substrate that encourage natural colonisation by plants and insects. This will not only benefit wildlife but help reduce the visibility of the buildings, especially from the distant high ground and villages which surround the site. The roofs will also contribute to the site's sustainable drainage system.

## Community benefits

The project would be a substantial investment in the local area and would deliver community benefits for the lifetime of the project, including:

- Replacement of intensively farmed land with biodiversity enhancements across the site with access to the public.
- Arable land (16 hectares) will be entirely repurposed into a nature area comprising a mosaic of woodland, scrub, wetland and wildflower grassland.
- Local employment and supply chain business opportunities during construction.
- Over £1 million per annum in business rates.
- A Community Benefit Deed has been offered to both Granborough Parish Council and Botolph Claydon Parish Council.







## Agricultural Land Classification

An Agricultural Land Classification assessment has been carried out. The whole site is classified as 3b which is moderate quality agricultural land and not best and most versatile.

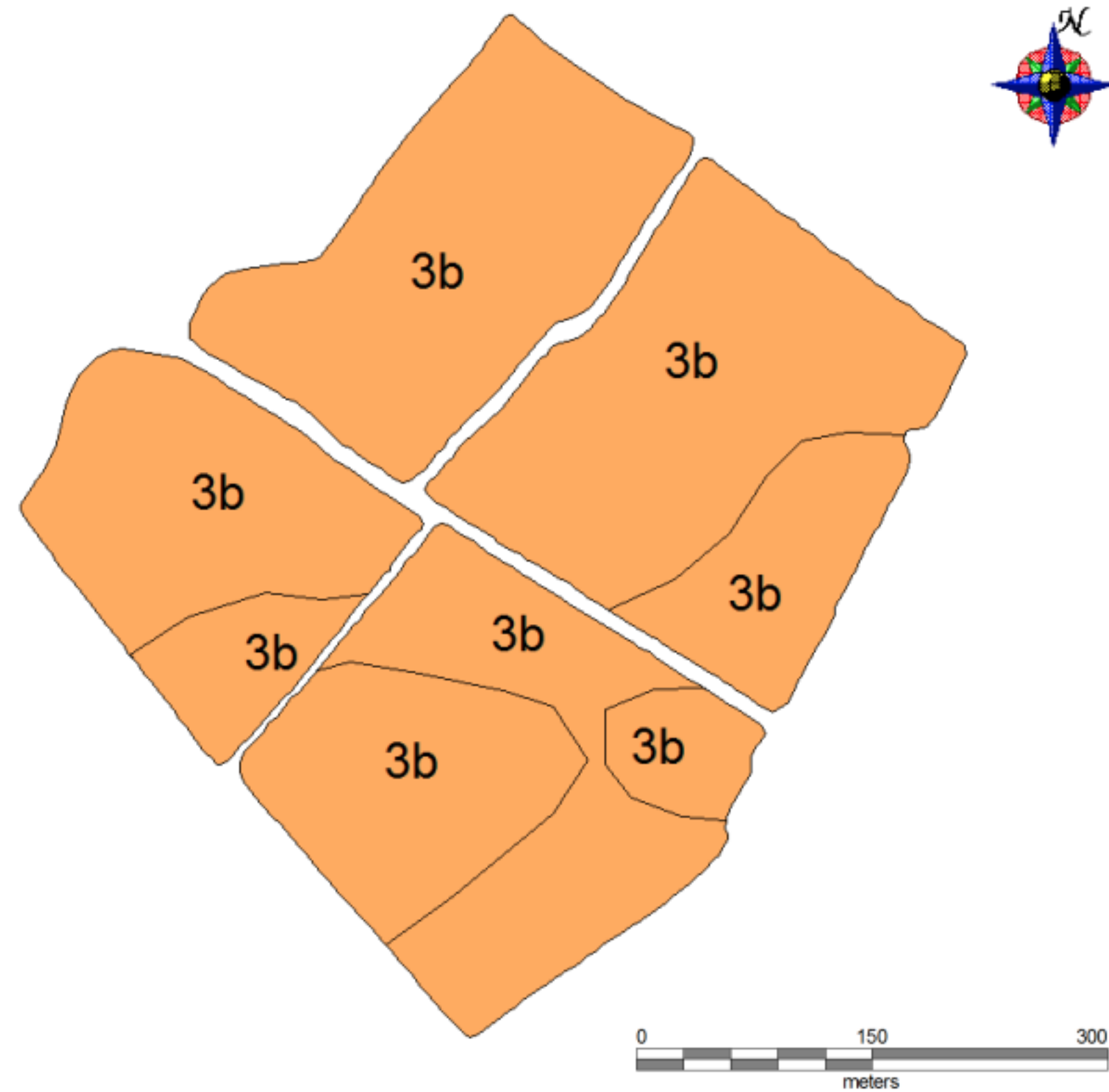
Climate change is the single biggest threat to UK food security according to the Department for Environment, Food and Rural Affairs.

Battery storage schemes help to keep farmers in business, providing them with a stable source of income in uncertain economic times.



Page 15

ALC grade	%area
2	
3a	
3b	100%
4	



## Flooding

The majority of the site is located within Flood Zone 1 (lowest risk) with the north western boundary backing onto Flood Zone 2. A detailed flood risk assessment and surface water drainage strategy has been undertaken to ensure that any impact on local drainage systems is minimised.

We have designed a surface water drainage system to further alleviate the risk of flooding including an attenuation pond to collect rainwater which will be landscaped to encourage wildlife.



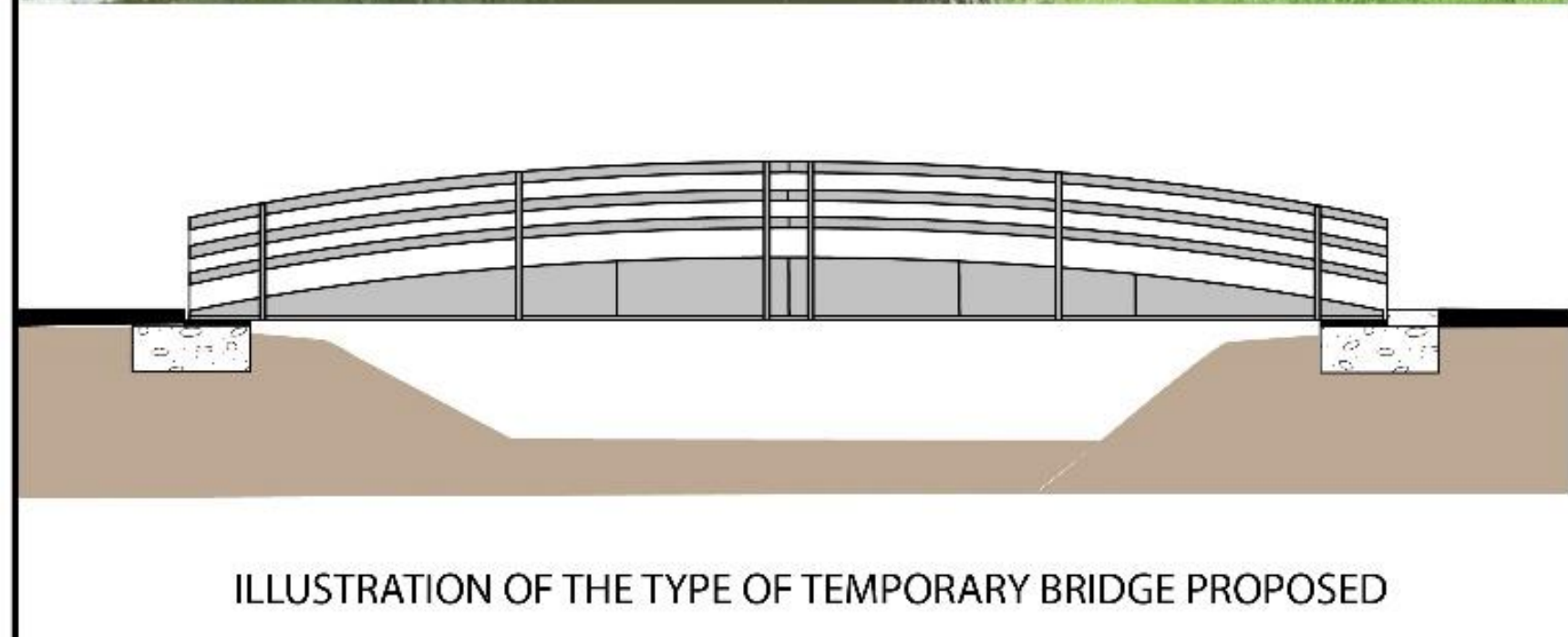
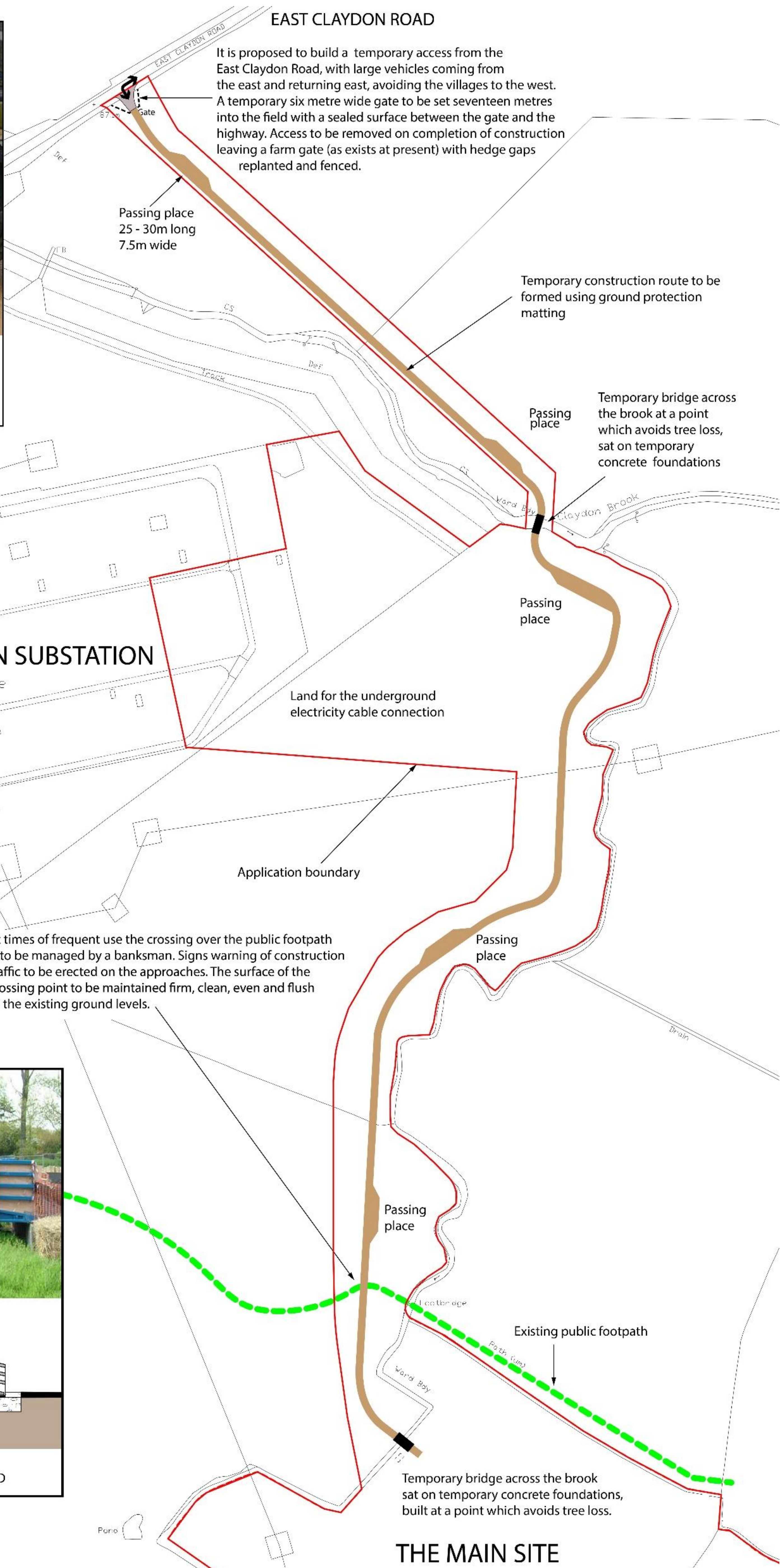
# New Temporary Construction Access



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The haul route will be built by laying ground protection mats on the top of the grass in the fields. The access onto the East Claydon Road will be gated and will comply with highway regulations. On completion of construction the boards will be removed, the farmland restored and hedge gaps replanted.



0 25 50 100m  
SCALE 1:1,250



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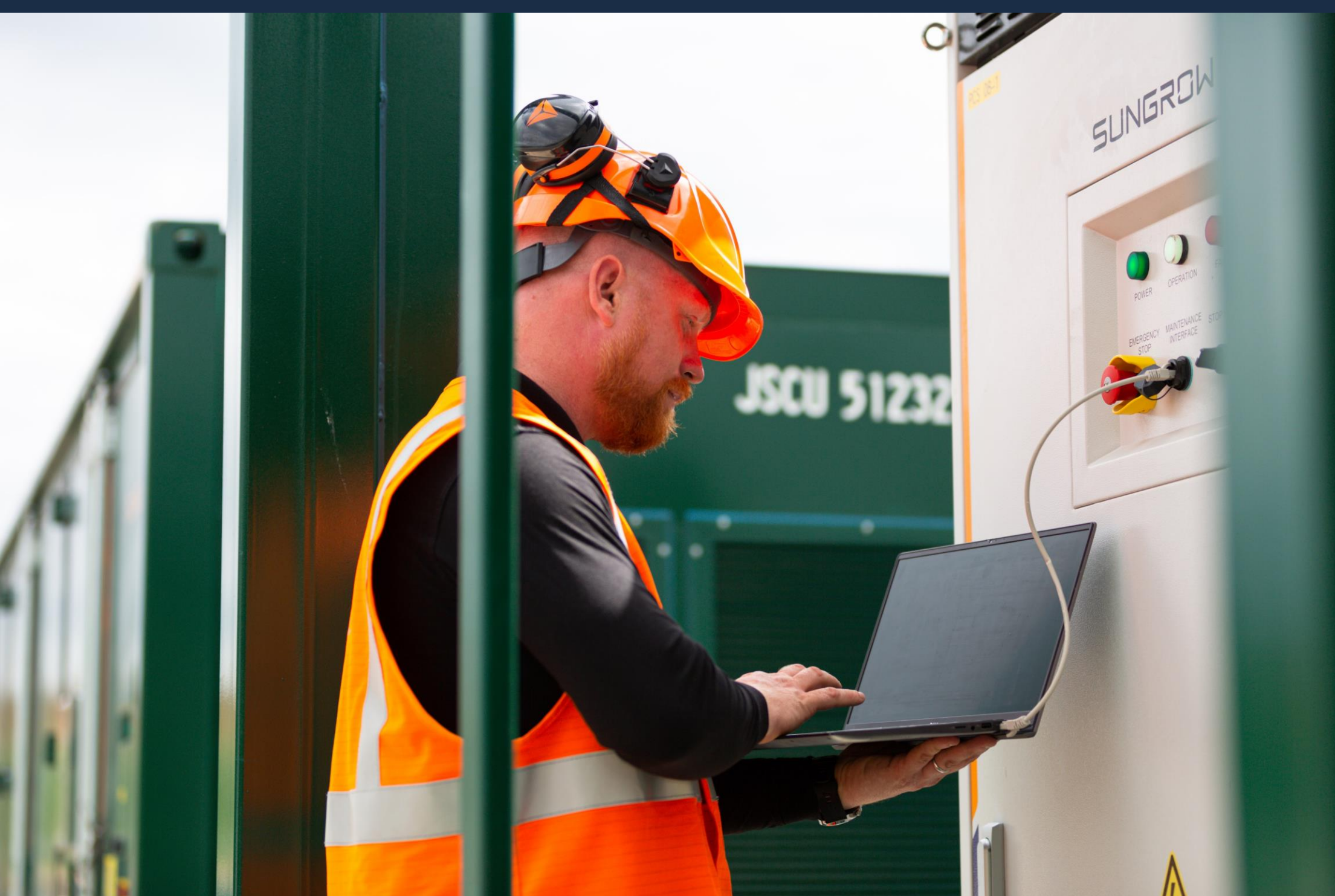


## Fire safety strategy

- Statera has been operating Battery Energy Storage System (BESS) sites since 2015, with sites now across Hertfordshire, Essex, Yorkshire, and Wiltshire. No fire events have been recorded at any of our sites.
- All of Statera's operational BESS sites comply with all applicable UK Health, Safety & Environmental legislation.
- The spacing of containers will be based on National Fire Protection Association standard NFPA855 for the installation of stationary energy storage systems.
- The batteries are exceptionally high quality and have been tested to Underwriter Laboratories UL9540A standard.
- Statera work with Fire Industry Association and wider industry to ensure the latest technology is built into the design.
- Lithium Iron Phosphate chemistry does not exhibit thermal runaway until temperatures are in the region 150-200 degrees C. These temperatures have never been reached in any of our sites.
- The containers have built in venting systems and the batteries themselves also have smoke, heat and gas detection, overtemperature protection and fire suppression initiation, which operates as follows, again well below thermal runaway temperatures:
  - ✓ Level 1@54°C: reporting the warning message
  - ✓ Level 2@57°C: reporting the warning message will request to reduce the charge/discharge power by 50%
  - ✓ Level 3@60°C: force open the relay and power shut down

We are consulting with Buckinghamshire Fire & Rescue Service and have an agreed Fire Liaison Framework in place covering three strategic phases:

- Pre-planning
- Site commissioning (post planning approval)
- Operational delivery



Minety BESS

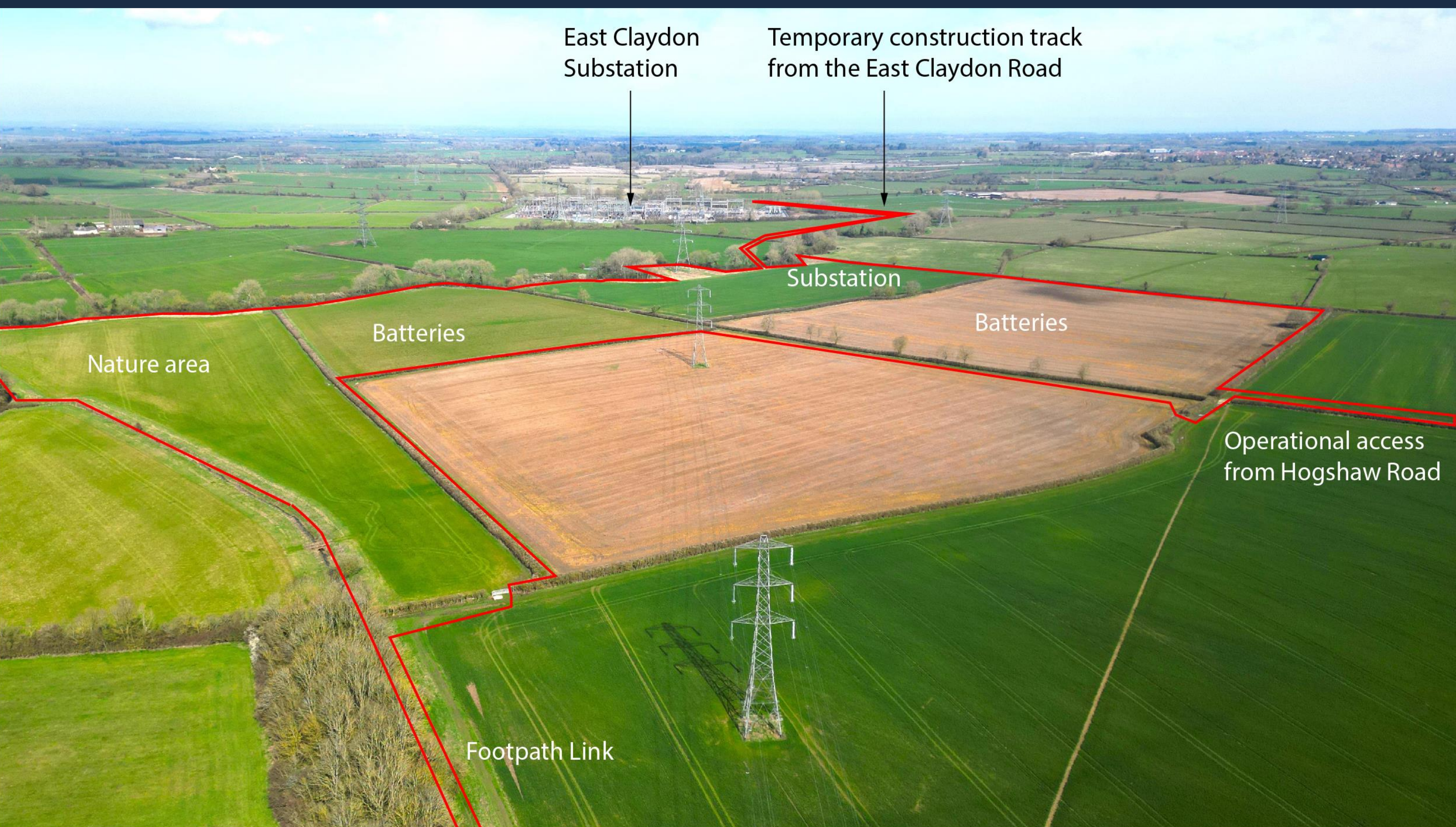


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# Proposed timeline and opportunity for feedback

Battery storage (at any installed capacity) can be consented at a local level via Buckinghamshire Council. Pre application advice has been sought with Buckinghamshire Council and an onsite meeting has been undertaken with the landscape officer and case officer.

We have taken on board feedback from the public and other stakeholders and intend to submit a full planning application to Buckinghamshire Council before Christmas 2023.



## We welcome your feedback

You can give your feedback in the following ways:

- Feedback form available to fill in today
- By email - [contact@stateraenergy.co.uk](mailto:contact@stateraenergy.co.uk)
- By phone 02071 860588
- Via the website [www.eastclaydonstorage.co.uk](http://www.eastclaydonstorage.co.uk)

We look forward to hearing from you.