

Design and Access Statement including Drainage Statement

Battery Energy Storage System
Furbarn Road – Rochdale

June 2023

Revision A



Prepared for SHAW-ENERGI LTD.

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1.1 Project Introduction

This Design & Access Statement has been produced to support the Planning Application for a new 57MW 2-hour Battery Energy Storage System (BESS) with associated ancillary equipment, sub-station and landscaping at Clay Lane/Furbarn Road, Rochdale.

As per the requirements of the Town & Country Planning (Development Management Procedure) (England) Order 2015, this report outlines the design process undertaken and indicates how access to and within the site has been considered.

The Client

Shaw-Energi is an engineering and renewable energy project developer based in Merseyside.

Their founder and CEO is an international leader in the design, production and installation of Biomass gasification and turnkey biomass-to-energy systems with over 15 years experience in delivering Biomass Combined Heat and Power (CHP) plants in UK and Europe. They have significant experience in the design, production and installation of complex energy generation projects including battery storage. Shaw-Energi has full engineering design, delivery and operations capabilities.

They have developed 250MW of energy storage projects that will provide vital balancing services to the national grid and the challenges it faces in maintaining stability and security of supply. These schemes reduce the cost of electricity and allow more renewable energy generation to power the UK.

The Architects

Pye Design Architects have been appointed by Shaw-Energi Ltd. to design the BESS scheme. They are a RIBA Chartered Practice based in the North West and their team includes fully-qualified architects, interior designers and architectural technicians.

The company has experience across a broad range of sectors including energy, residential and education.

1.2 Site Location & Context

The site is located to the South West of Rochdale Power Station and sits within greenbelt. The sloping triangular site is surrounded by a public road, track and bridleway. Existing overhead power cables fly over a section of the site and these have an associated easement that prevents development directly below.

There are numerous trees on the site and adjacent to it, including a line of established trees to the boundary with the adjacent manège. A large proportion of the site is edged by a hedgerow.

The site is currently vacant, with the exception of the storage of a small number of hay bales.

Following an extensive site identification assessment by Turley and the applicant, it was deemed that this site is the most suitable for the Battery Energy Storage System scheme within a 2km radius, based on a secured connection point at Rochdale Power Station.



View into site from Rake/Furbarn Road intersection



View into site looking South - from Rake



View into site from existing vehicle access point

Source: Google Maps



Source: Google Maps

1.3 Surrounding Architecture & Materials

There are a series of building types and styles surrounding the site, as can be seen in the adjacent images. The closest built structures are at Waterloo Farm to the West of the site. This group of buildings include a stone farmhouse, horse stables and various agricultural outbuildings.



Scott House



Waterloo Farm - farmhouse - sandstone with pitched slate roof



Waterloo Farm - outbuilding with metal roofing



Waterloo Farm - stables - render with concrete tile roofing



Contemporary dwelling on Furbarn Rd - render with slate roof



Equipment enclosure - Rochdale Power Station - metal cladding



Commercial property - Clay Lane - red brick with sandstone



Farm off Jowkin Lane - metal sheeting to pitched roofs

1.4 Relevant Planning History

There has been 1no. planning application on this site, submitted in 2022, that has subsequently been withdrawn - details as below.

22/00946/FUL

Siting of containerised battery storage units, new sub-station and ancillary equipment including engineering works to infill existing pond changes to levels including formation of retaining wall, formation of new access together with 2.5m high palisade fence and gates at Land off Lower Jowkin Lane and 132kV compound at Clay Lane Power Station.

Location: Land Adjacent To Waterloo Farm, Carr Wood And Clay Lane Power Station Furbarn Road Rochdale OL11 5UT

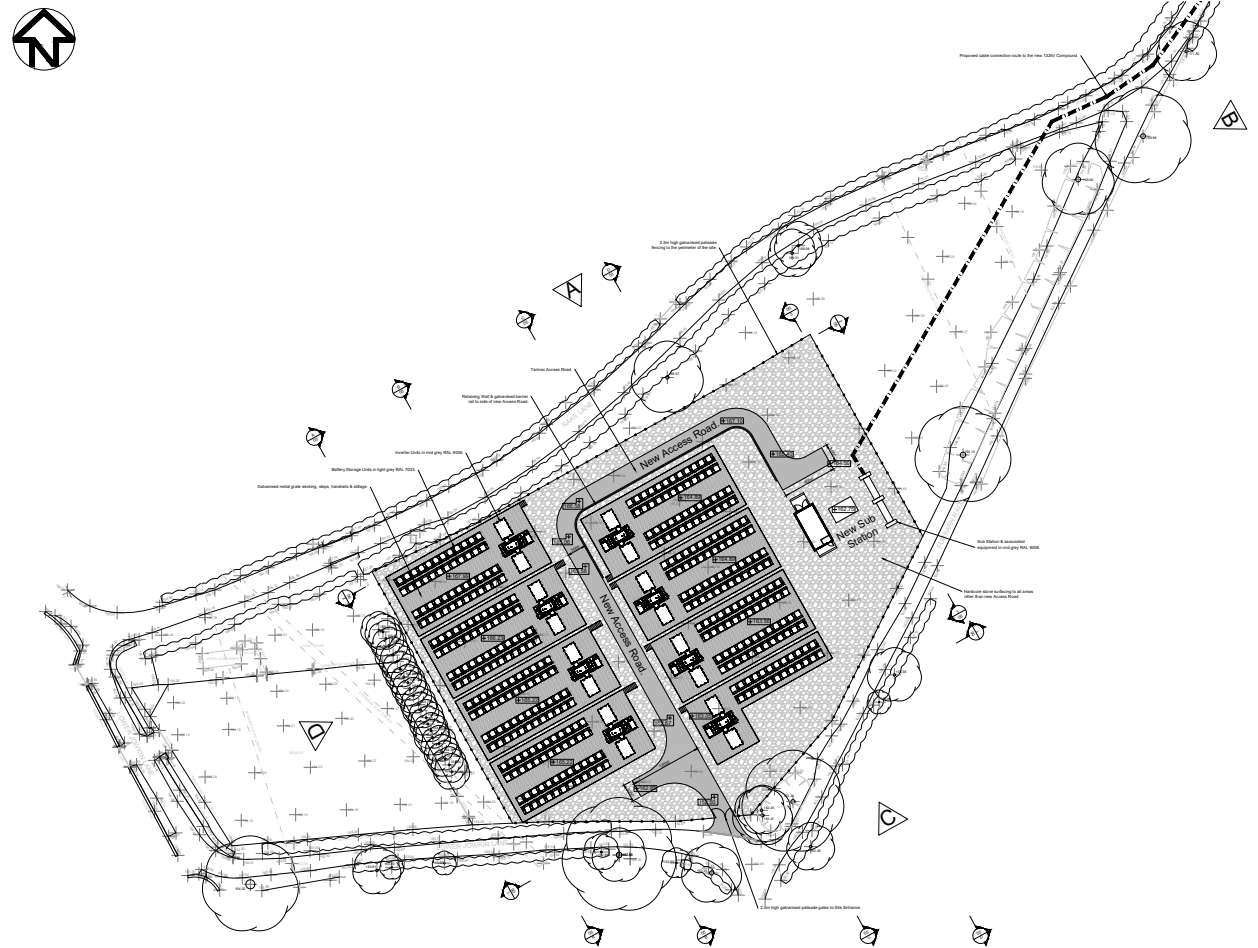
Submitted: September 2022

Withdrawn: November 2022

In general, the previous proposals are as the current proposals in terms of use - a Battery Energy Storage System scheme with associated infrastructure. No pre-application process was undertaken prior to the submission of the application in 2022 and there was no discussions with the LPA.

Following validation of the application, Pye Design (as agents) received feedback from the planning officer that it was unlikely that the submitted proposals would be supported. The main reason being that the proposals would be considered unacceptable in the greenbelt location. There were also reservations around vehicle access to site. It was recommended that the application was withdrawn.

Please refer to Planning Statement by Turley for detailed planning history and further details.



Proposed Site Plan from previous Planning App 22/00946/FUL - withdrawn

1.5 Pre-Application Consultation

The client, along with Pye Design and Turley, has engaged with the local planning authority during the design process and has held in-person pre-application discussions with Senior Planning Officer Ryan Killeen at Rochdale Council Offices.

Following a series of comments and responses from the planning department on the original application, the scheme has been amended extensively to incorporate the changes suggested and alleviate concerns.

Refer to submitted 'Planning Statement' by Turley for detailed information regarding the Pre-Application feedback and notes from in-person meeting when design proposals were presented to Ryan Killeen.

1.6 Relevant Planning Policies

Relevant National & Local Policies

In-line with current policy, the proposals will be assessed against the National Planning Policy Framework (NPPF) and the Rochdale Borough Council Local Plan, along with other local policies and guidance.

See submitted 'Planning Statement' by Turley for detailed information regarding compliance with relevant planning policy.

1.7 Ecological Assessment

The client has commissioned ERAP (Consultant Ecologists) to undertake an Ecological Survey and Assessment of the existing site. The report forms part of this planning application and includes in-depth detail relating to the survey and findings.

The proposed scheme takes into consideration the recommendations in the report, including Biodiversity Net Gain.

1.8 Arboricultural Report

The client has commissioned ACS Consulting to undertake a site survey and produce an Arboricultural Report. The report forms part of this planning application and includes in-depth detail relating to the survey and findings. This also includes Tree Root Protection drawings.

The proposed scheme takes into consideration the recommendations in the report. The existing trees within the site are to remain and be protected during construction.

2.1 Use

The proposed development is to be used for the storage and distribution of energy via battery powerpacks and associated equipment, with a cable connection to the local Power Station for the import/export of electricity. The proposed use is considered to fall under *sui generis* of the Town and Country Planning (Use Classes) Order.

2.2 Amount

The proposed scheme provides a 57MW 2-hour system and includes the following:

Battery Units (Powerpacks)	15no.
Inverter Units	8no.
Barn Structures	2no.
Sub Station	1no.
Ancillary Unit/Equipment	1no.

2.3 Layout

The proposed layout is as per the submitted Drawing No. *4130-P-503-RevB Proposed Site Plan* - see Pg. 13 of this document. The layout utilises the existing vehicle access into the site for the future use by maintenance vehicles.

The layout of the battery units and inverters have been kept as compact as possible to minimise the impact on the greenbelt. The batteries and barn structures are positioned to the West of the site. This is due to the topography of the site and the easement below the existing overhead cables to the Eastern part of the site.

The layout of the battery units has been informed by minimum interface distances for safety and insurance purposes.

Additional trees and planting around the wider site have been included to visually screen the proposals from key views around the site.

2.4 Scale

The scale of the development is sufficient to provide a 57MW 2-hour BESS system. The wider site allows for additional landscaping. Site areas and footprints are as below:

Total Application Site Area: **9,498m² / 0.949ha**
(including cable route)

Energy Development Site Area: **6,946m² / 0.694ha**
(not including cable route)

Barn Structure Footprint: **300m²**
(2no. Barn Structures proposed)

Sub station Footprint: **25.8m²**
(Excluding external steps)

2.5 Appearance

As the battery units and inverters are standardised, varying the appearance of these is not viable. However, the scheme includes planted 'green' retaining walls between each row of battery units to help break the visual mass of multiple units.

A key element to the proposal is the inclusion of 2no. timber-clad barn structures. These structures provide a visual barrier to the edge of the site and give a rural appearance, common of the greenbelt surroundings.

The loose stone ground covering gives a rural aesthetic and has been included as an alternative to a generic Tarmacadam hardstanding.

2.6 Landscaping & Lighting

Landscaping

The existing trees and hedgerow within the site are to be retained. An extensive proposed landscaping scheme, as per Turley's proposals, includes new trees and planting to provide visual screening and soften the visual impact of the scheme. Refer to Proposed Landscaping Strategy for details.

ERAP have assessed the landscaping proposals and demonstrated a Biodiversity Net Gain across the site. See ERAP report documents for metric details.

External Lighting

External lighting on the site has been kept to a minimum to ensure no light pollution. The only external lighting is on the substation to allow safe access during dark conditions, if required. This will be operated by a motion sensor so cannot be left on permanently. As the site is unmanned (monitored remotely) and only accessed occasionally by site operatives for maintenance, then general external lighting across the site is not required.

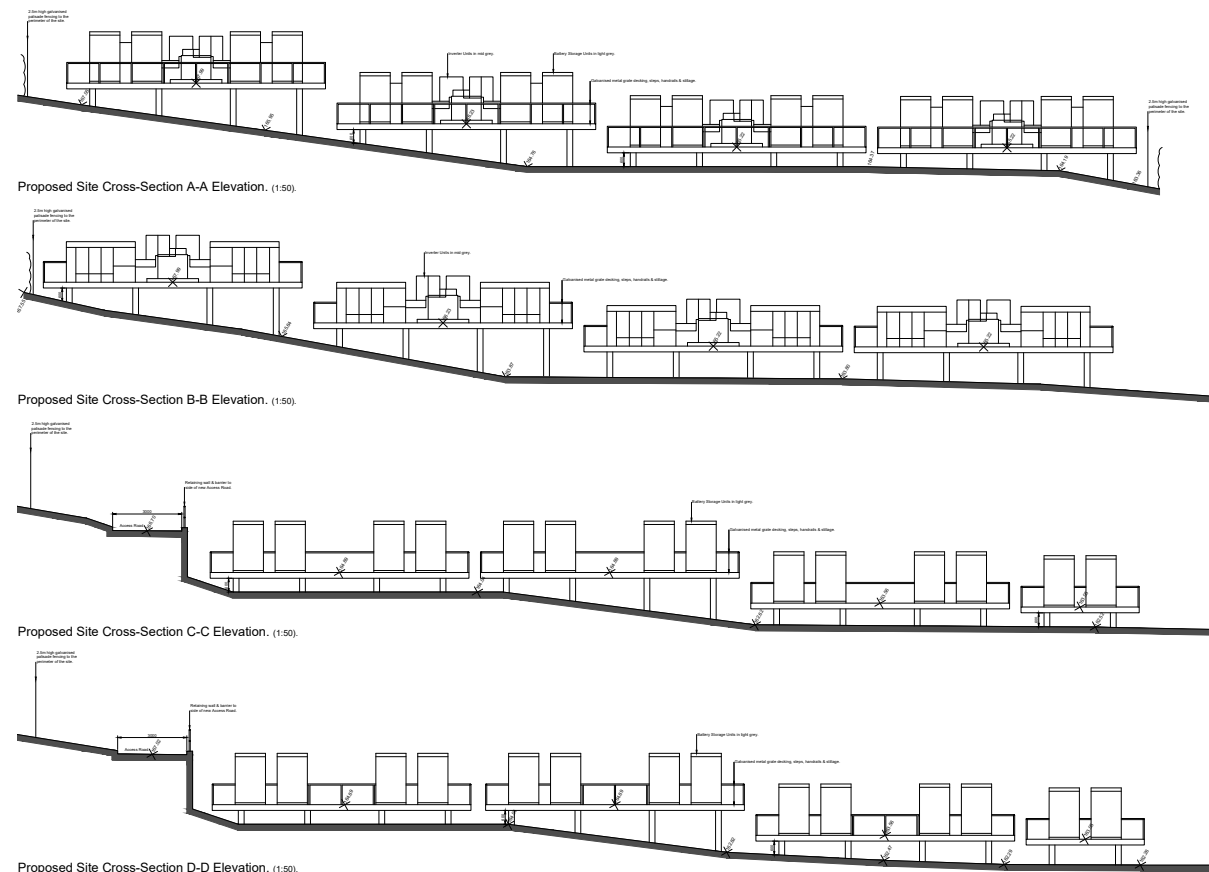
2.7 Design Development

The proposed scheme has gone through various design iterations since its inception, taking into consideration the site conditions, topography, greenbelt setting and feedback from the Local Planning Department.

Since the original planning application, the design approach has been totally re-visited to ensure the most cohesive scheme is presented. The previous scheme (now withdrawn) included minimal intervention to the existing site levels, but this created elevated levels for the battery units. This resulted in the units being highly visible from outside of the site and this was not supported by the LPD.

Throughout the development of the new design, particular attention has been given to ensuring the new development has a minimal impact on the rural setting. The introduction of retaining walls, with sloped planted faces, has allowed the battery units to sit into the site and thus no longer elevated above the surrounding site levels.

The introduction of 2no. agricultural barn structures provide visual screening from the surrounding public highways and footpaths. Additional planting and trees, as shown in the Turley Landscaping Proposals, provide further screening to the units and help to blend the scheme into the surrounding landscape.

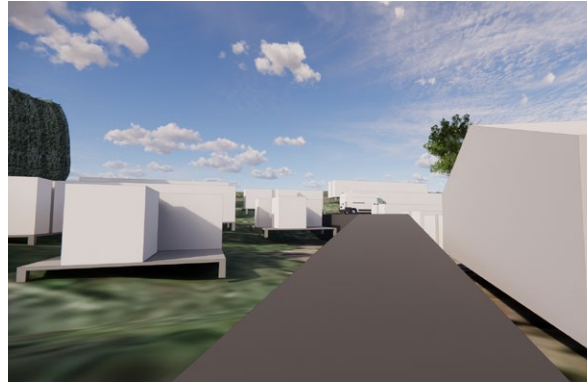


Proposed Site Sections from previous Planning App 22/00946/FUL - withdrawn

3D Massing Model

The images show the various design iterations from a 3D massing model. The model was used to test the feasibility of making the layout of the battery storage units as compact as possible whilst also achieving the necessary interface distances between individual units. The model also allowed options to be tested regarding manipulation of the site levels to allow the battery units to 'sit' within the landscape and to minimise their visibility from nearby viewpoints.

Additionally, the model also allowed the positioning of the barn structures to be tested and refined. The design of the proposed development has also been influenced by the location of an easement beneath the existing OHL's within which development must be precluded.



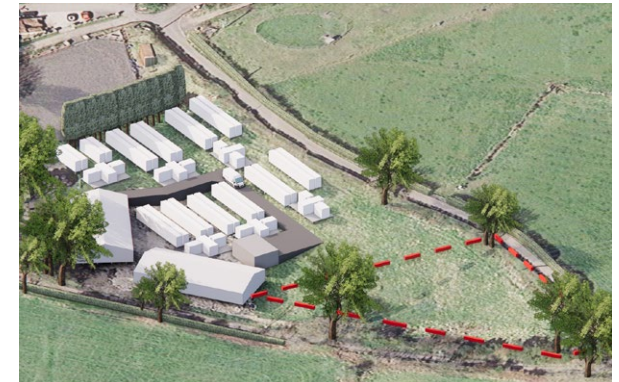
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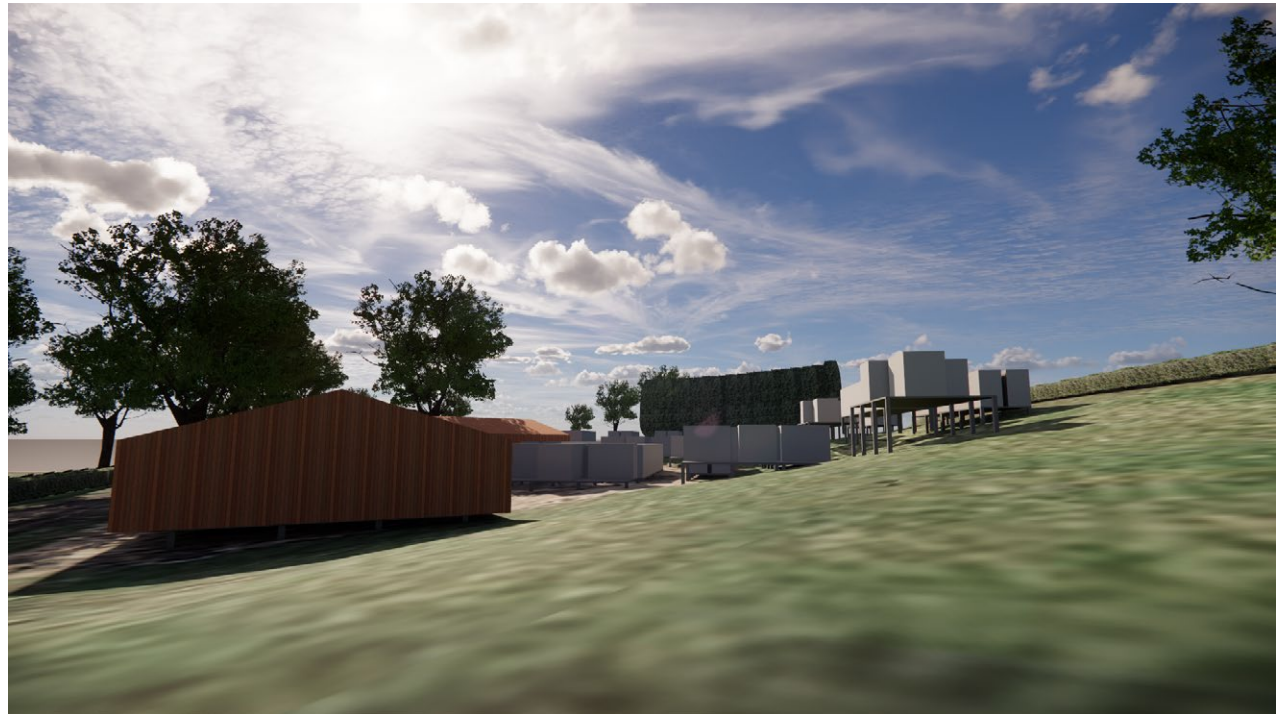
Alternative Layout - no internal road

During the design development, various site layout options were explored. One iteration removed the road through the site in an effort to compress the footprint of the development as much as possible. Although this was successful in terms of minimising the development footprint, it was discounted following further discussions with the applicant as this would inhibit maintenance access throughout the site.



Alternative Layout - existing site levels retained

Options were also explored to retain the existing site levels. However, this resulted in the top battery units sitting above the height of the Rake roadway and causing substantial visual impact - as indicated in the adjacent image. Therefore the design was further developed to include the stepped levels and a series of planted retaining structures - as per the latest proposals.



2.8 Precedent Studies

Below is a selection of completed and proposed Battery Energy Storage System schemes in the UK. Many of these schemes are set within rural locations, some in the greenbelt, due to the proximity to existing power stations. These schemes have been studied to assess what items are most successful in minimising visual impact within the rural locations, such as: green security fencing, additional landscaping and tiered levels.



Harrop Lane BESS, Bradford (Greenbelt) - 24 Power Limited



BESS, Pillswood - Harmony Energy



Minety BESS, Wiltshire - Penso Power

2.9 Proposed Site Plan

Not to scale



2.10 Proposed Site Elevations

Not to scale



2.11 Proposed Site Sections

Not to scale



2.12 Illustrative Landscape Masterplan

Not to scale

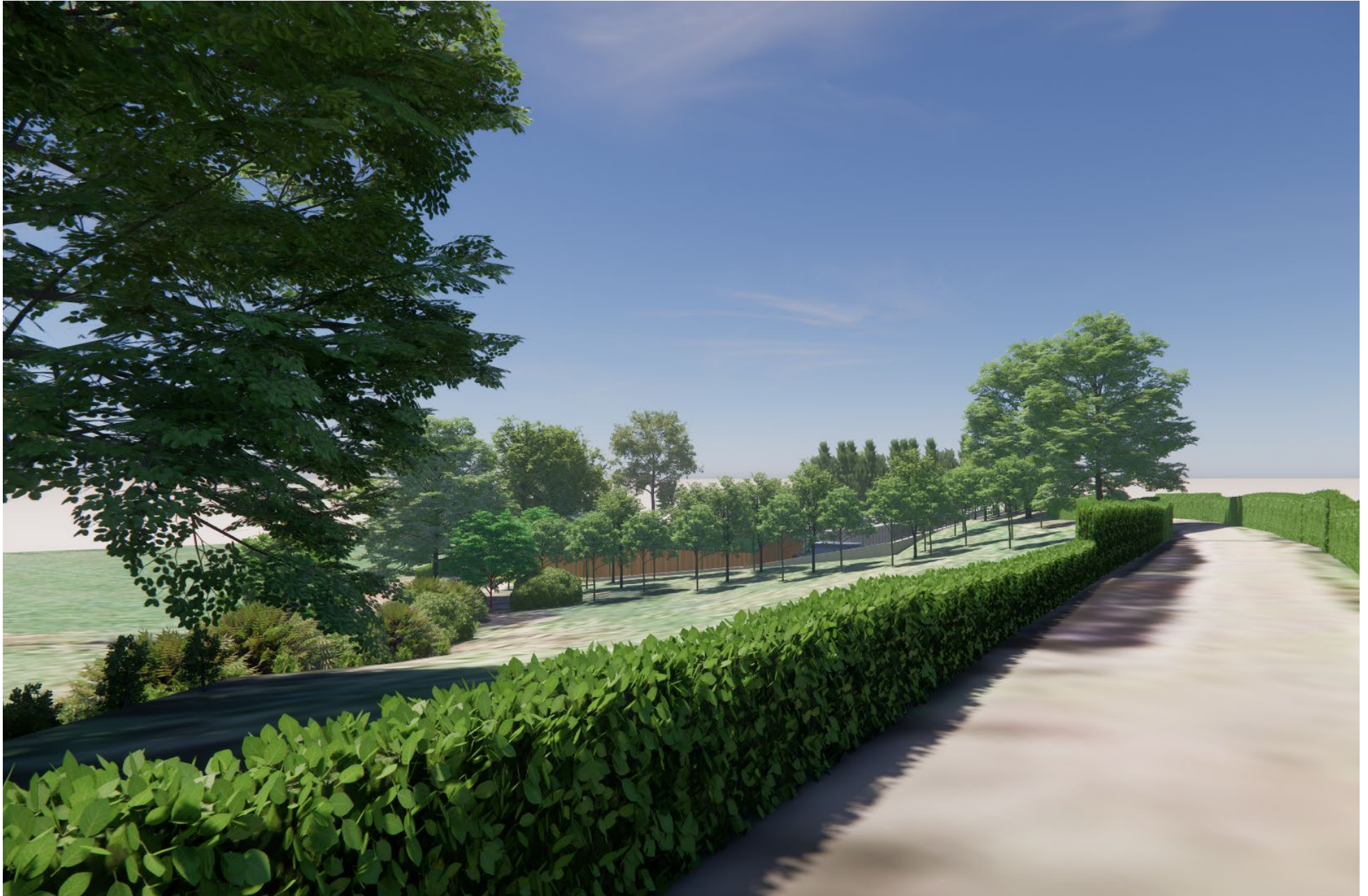












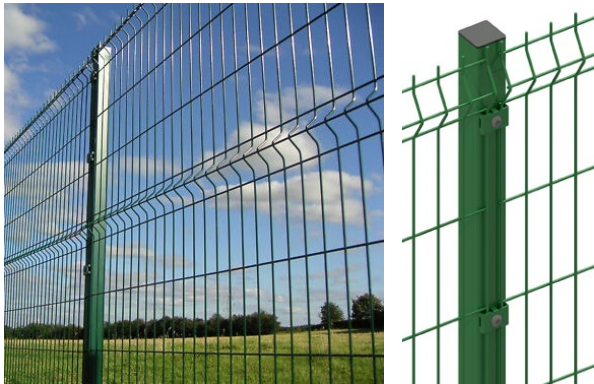


2.14 Proposed Materials

A refined palette of materials have been selected to ensure the proposals sit well within the sensitive greenbelt location.

A green colour palette has been selected for the site security fencing and barn roofing to reduce the visual impact when set against the green vegetation of the wider site and surrounding areas.

The proposed barn structures are to be steel-framed with a natural timber cladding externally and sheet metal roofing. This is common of agricultural buildings and similar to other buildings within the local vicinity of the site.



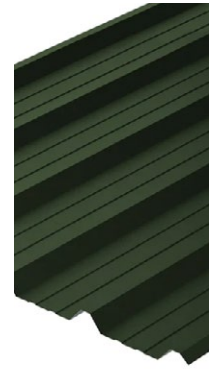
Mesh security fencing - RAL 6005 (Moss Green)



Natural timber close-boarded cladding to barn structures



Powder-coated metal sheet roofing to barns - RAL 6005 (Moss Green)



'Green' sloping retaining walls with planting - Flex MSE



Galvanised tubular handrails and galvanised decking with steps



Battery Units - RAL 7035 (Light Grey) / Inverter Units - RAL 9006



3.0 ACCESS

3.1 Vehicular Access & Transport Links

Construction traffic is to enter the site at the intersection of Furbarn Road and Rake, with access into the site via a temporary loose stone roadway. This temporary access road will be removed once the scheme is implemented and returned to grassland, but with additional planting as shown on the landscaping proposals. Curtins have produced tracking drawings to ensure construction vehicles can safely access the site.

Site operatives will access the site in a van once the scheme is operational, but this is only for maintenance and monitoring purposes. This is likely to be no more than once a month. The maintenance access for a single van will be provided to the south of the site in the same location as the existing vehicle access into the site.

See submitted Transport Statement by Curtins for further information and vehicle tracking drawings.

3.2 Car Parking & Cycle Storage

There is to be no permanent vehicle parking on site. There are 2no. areas (different levels) for temporary parking of maintenance vehicles whilst site operatives are on site.

It is unlikely that a site operative would attend site on foot or bicycle. However, there are several areas for secure storage of cycles within the fenced site if this is ever required.

3.3 Inclusive Access

As with all new schemes, the proposals aim to provide fully inclusive access to all users, irrespective of age, disability, ethnicity or special grouping and will be fully compliant with current Building Regulations.

The developer will work in collaboration with the professional design team and Building Control officer or private inspector to ensure compliance.

However, due to the sloping nature of the site and stepped levels, external steps are required to access all areas. Accessible ramps or lifts are not suitable or feasible for these proposals.

The site is private and will not be accessible to the public. Therefore, all site operatives will be fully aware of the access arrangements prior to attending site.

3.4 Security

It is important that the site is kept secure due to the nature of the operations and potential hazards. Therefore, a 2.5m high security mesh fence will be installed around the site to prevent unwanted access. Gates within the security perimeter fencing will only be accessed by the site operatives.

Monitored CCTV will also be installed across the site to provide early-warning of any potential security breaches.

3.5 Servicing & Waste Management

General maintenance vehicles will enter the site via the southern site entrance. Any landscaping maintenance vehicles will also utilise this entrance and will be no larger than a single van.

The scheme will produce zero physical waste and therefore waste vehicles will not be required to visit or enter the site.

4.0 DRAINAGE & UTILITIES

4.1 Drainage Statement

Currently the site is naturally drained and the proposals look to continue this approach, with no new connections into the mains surface water system. There are no recorded issues with flooding on this site.

All new roadways and stone surfaces within the site are to be fully permeable.

Any rainwater collected on the new pitched roof barn structures is to be directed to the ground level via rainwater pipes and will then naturally soak away. The floor within the barn structures is to be permeable stone - no concrete slab.

Any rainwater hitting the top of the battery units, inverters, substation or ancillary unit will fall to the ground and soak away naturally through the permeable surfaces.

The proposals will not generate any foul waste and as such, foul drainage connections to the site will not need to be considered.

If required, a detailed ground drainage system design can be produced in due course and approved by the local authority and United Utilities before commencement of works. Therefore, it is anticipated that if a detailed drainage design is required, it would be a planning condition at this stage.

Any new ground drainage installed will be compliant with United Utilities guidelines and Building Regulations Approved Document H.

The site is located in Flood Zone 1 and is therefore at the lowest risk of flooding.

4.2 Utilities & Services

The proposed development will require new electrical connections and internet/data connections. Service connections will be confirmed throughout the detailed design phase, prior to commencement on site. Applications for new installations will be made to the statutory bodies or private providers by the developer.

A new mains water supply or gas supply will not be required on site.

5.0 SUMMARY

5.1 Conclusion & Summary

This document has been produced to demonstrate the thorough design process undertaken and show the careful consideration given to minimise the visual impact of the proposals within the greenbelt.

The client has shown willingness to liaise and co-operate with the local planning department throughout the process and has engaged in positive pre-application discussions. The scheme, as submitted, takes into consideration the comments and advice given, producing a well-considered design proposal.

The Design & Access Statement should be read in conjunction with the submitted 'Planning Statement' by Turley that demonstrates compliance with both local and national planning policies.

As such, we trust that Rochdale Borough Council will look favourably on the scheme and support bringing this much-needed asset to the local area.

