

Llandyfaelog Substation **Design and Access Statement**

On behalf of **National Grid**
nationalgrid



Design and Access Statement

Llandyfaelog Substation

November 2025

Prepared for:
National Grid Electricity Transmission

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1 Introduction

1.1 Background

- 1.1.1 This Design and Access Statement (DAS) has been prepared by Stantec on behalf of National Grid Electricity Transmission (NGET) ('the Applicant') to support a full planning application submitted to Carmarthenshire County Council ('The Council') for the delivery of a new 400kV substation (including the substation platform, access road and associated infrastructure) (the Llandyfaelog Project), near Llandyfaelog, Carmarthen, South Wales.

1.2 The Brief and Vision

- 1.2.1 The purpose of the Proposed Development is to enable the much-needed upgrades to energy infrastructure, including required increases to electricity capacity, to enable NGET to invest in growth and energy security for the region's electricity supply.
- 1.2.2 The Applicant is the only company licensed to transmit electricity in England and Wales. Under Section 9 of the Electricity Act, the Applicant is required, in this capacity, to develop and maintain an efficient, coordinated and economical system of electricity transmission to facilitate competition in the supply and generation of electricity.
- 1.2.3 Transmission of electricity in Great Britain requires permission by way of a licence granted under Section 6(1)(b) of the Electricity Act 1989 ("the Electricity Act"). The Applicant has been granted a transmission licence and is bound by legal obligations, which are primarily set out in the Electricity Act and in the transmission licence.
- 1.2.4 NGET has a legal obligation to connect customers to the network when a connection is requested and when existing substations do not have the capacity for the size of the connection required, NGET is required to build a new one to meet the need. When developing proposals for new network infrastructure NGET has a duty under the Electricity Act 1989 to do so in an efficient, coordinated and economical way.
- 1.2.5 National Grid is also required, under Section 38 of the Electricity Act 1989, to comply with the provisions of Schedule 9 which requires licence holders, in the formulation of proposals to transmit electricity to:
- 1.2.6 Schedule 9(1)(a) "have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest"; and
- Schedule 9(1)(b) "do what reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."
- 1.2.7 NGET also has a statutory duty under Section 9 (2) of the Electricity Act 1989:
- "(....) to develop and maintain an efficient, coordinated and economical system of electricity transmission; and*
- (...) to facilitate competition in the supply and generation of electricity."*
- 1.2.8 The Llandyfaelog substation is proposed to provide connections for two customers; Green Gen Cymru (GGC) an Independent Distribution Network Operator (IDNO) customer, and National Grid Electricity Distribution (NGED), Distribution Network Operator (DNO) customer. Additionally, based on its Beyond 2031 study for the Celtic Sea NESO (National Energy System Operator) has recommended Llandyfaelog as a connection point for 1.5GW of offshore wind which was previously reserved at the Site.

1.3 Site Selection

- 1.3.1 Stantec undertook a Siting Study on behalf of NGET to investigate the most suitable location for the Proposed Substation. This Siting Study identified potentially suitable locations for the development of the new substation, using constraints mapping, which were then assessed in relation to environmental and socio-economic constraints as well as technical considerations. The following factors were considered when assessing the potential sites of the proposed substation:
- The proximity to settlements and more rural isolated dwellings, and the degree to which existing features (e.g., woodland belts) contribute to visual containment or existing industrial character.
 - The proximity to existing suitable electrical infrastructure.
 - The presence of any rights of way, access routes or other recreational receptors. There are no National Trails within the Siting Study Area, however a range of recreational routes and local PRoWs are present.
 - Ease of access for general construction traffic based on any access restrictions.
 - Known designated or non-designated heritage assets within the approximate site boundary.
 - The presence or absence of designated or non-designated ecological sites within the approximate site boundary.
 - The presence of waterbodies such as ponds within 500m of the approximate site boundary.
 - The extent of the site (including access routes) within Flood Zone 2 and 3;
 - Local policy designations and planning history.
 - Presence of planning applications.
 - Landform and topographic constraints.
 - Potential 400kV overhead line work required to connect the site to the existing OHL.
- 1.3.2 The Siting study area located in southern Wales, spanned two council boundaries. It primarily fell within the local administrative boundaries of Carmarthenshire County Council, whilst proportionally smaller parts of the study area fell within the administrative boundary of the City and County of Swansea.
- 1.3.3 The Siting Study Area consisted of an area of 2km from the existing 4YV 400KV overhead line ('OHL') between towers 4YV139 south of Llangynog and 4YV226 to the west of Llanedi. A 10% buffer zone was applied to account for any potential sites that may fall on the border of the Siting Study Area.
- 1.3.4 The site selection process involved screening initial sites against a range of criteria that assessed their suitability, feasibility, and acceptability, based on the existing data and evidence from previous investigations. Following this process, a total of seven potential long list sites were considered but this process resulted in four being ruled out. The remaining three sites were shortlisted and considered in detail.
- 1.3.5 The Siting Study assessed the three shortlisted sites against several criteria. The outcome was that Llandyfaelog was the most suitable for the following reasons:

- In respect of the 6no isolated residential properties adjacent to the site, 2no properties front/face the site, which are located 150m east and 360m south of the site. LIDAR data suggests isolated residential properties to the south are screened from views via the intervening elevated landform at 125AOD whilst residential properties located east and west of the site have limited visibility due to existing intervening woodlands.
- The site is immediately adjacent to the existing overhead high-voltage line (OHL) so minimises environmental, landscape and visual, technical and cost implications for connection to the substation. The site is also crossed by an existing 132kV OHL.
- Wales Coastal Path (and NCN Route 4) is located approximately 1.4km to the west however views from this receptor are limited. Views from the Coastal Path are focused toward the Tywi estuary to the west. The landform and existing woodland west of the site function as suitable screening.
- Apart from edges of the southern part of the site, the site is largely free from flood risk constraints.
- Whilst there is BMV Agricultural Land (Grade 3a) and Ancient Woodland to the west of the site they will not be directly impacted by the substation.
- A Scheduled Monument (Castell y Domen, Gwempa) comprising the remains of a motte and ditch is located approximately 1.6km southeast of the site. Again, however, it is not considered that the substation will have a direct impact on this heritage asset.

1.4 Summary of the Proposal

1.4.1 The Llandyfaelog Project is comprised of the following principal elements:

- Platform and Air Insulated Substation (AIS), measuring 260 metres by 640 metres the platform comprises of hardstanding with drainage and earthing for electrical equipment. It will be surfaced with grey stone chippings. The National Grid 400 kV AIS substation will be located on the level platform in a fenced compound measuring 155 metres by 602 metres.
- The remaining space on the platform will be used for two smaller 132 kV substations, built and operated by NGED and Green Gen Cymru respectively. NGED and Green GEN Cymru will apply for separate consent to construct their proposed substation compounds, as well as the connections into the proposed 400 kV substation.
- Access to the A484, with operational access road to connect the platform to the A484.
- Modification works to the existing 400kV Overhead Line (OHL) to connect the substation to the existing OHL involving the installation of two new towers and one replacement tower circa 18m and 62m.
- Associated drainage and hard and soft landscaping.

1.5 Purpose

- 1.5.1 This DAS has been prepared in pursuant to the Welsh Government's List of Validation Requirements.
- 1.5.2 The purpose of this document is to demonstrate that the Applicant has fully considered the design and access issues as part of the comprehensive preparation of the scheme, prior to submission of this planning application.



2 Site and Context Analysis

2.1 Site Location

2.1.1 The Site is located approximately 6km south of Carmarthen, South Wales. The site is located within a predominantly agricultural setting, approximately 900m north of the village of Llandyfaelog and 700m northeast of the village of Upland Arms. The area of the proposed works is centred on E:241868 N:213542.

2.1.2 The Site Location is shown in **Figure 1** outlined in red.

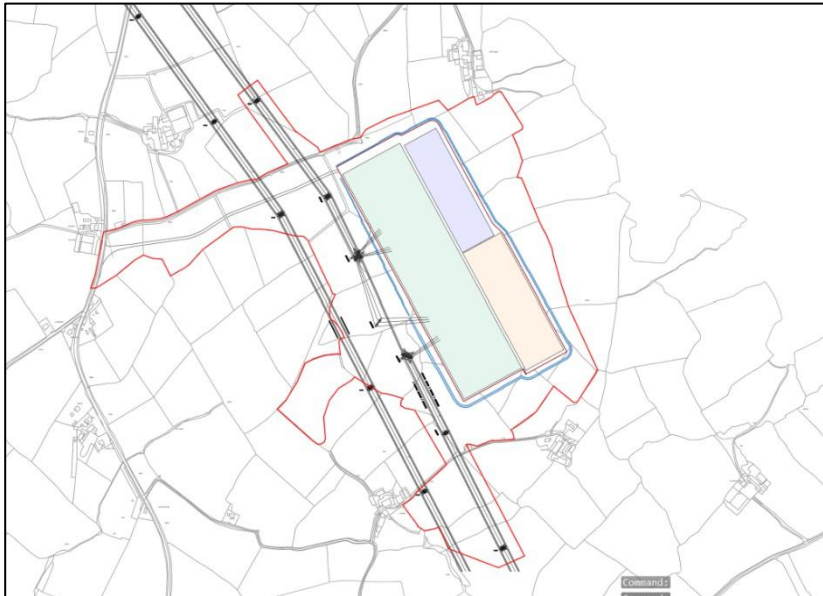


Figure 1: Site Location Plan

2.2 Site Description and Accessibility

2.2.1 The Site covers a total area of approximately 52 hectares (ha) and comprises several agricultural fields, in use as grazing and arable farmland. The Site occupies an elevated plateau within which is an area of relatively flat landform. The Site is bounded by a range of natural landscaping including trees and large hedges.

2.2.2 For the Proposed Development, a new site access road will be built approximately 600m in length. A new junction with the A484 will be created around 50m south from the existing C2074.

2.2.3 Public Right of Way (PRoW 29/14/2) crosses the southern part of the site, running east to west and directly intersects the Site beneath the existing OHL.

2.3 Designation and Site Constraints

2.3.1 With regard to policy designations and technical constraints of the Site:

- The Site is not subject to any statutory ecological, historical or landscape designations and is not covered by any local plan designations within the adopted Carmarthenshire Local Development Plan (CLDP) 2006-2021.
- The Site is not located within a designated landscape; however, the Tywi Valley Special Landscape Area (SLA) is located approximately 1.8km to the west. Further, the Site is

located within the National Landscape Character Area (NLCA) 33: Gwendraeth Vales which is described as an area of rolling hills, ridges and minor valleys, the area between the coastal and valley parts of the Tywi, the South Wales valleys and the black mountain part of the Brecon Beacons.

- There are two European designated areas for nature conservation within 5km of the Site. Carmarthen Bay and estuaries / Bae Caerfyrddin ac Aberoedd Special Area of Conservation (SAC) approximately 1.5 km northwest of the Site and Twyi River/Afon Twyi SAC which is approximately 4.6km north of the Site. One national statutory designated area for nature conservation, the River Twyi / Afon Twyi Site of Special Scientific Interest (SSSI) is located 1.5km northwest of the Site.
- There are eight designated historic assets within a 3km study area of the Site, including the following six listed buildings (including two bridges), all of which are listed at Grade II:
 - Glanrhydwr (Georgian rubble stone house) located c.1.3km east of the Site (26769);
 - Pont Anwyn (rubble stone bridge) located c.2km east of the Site (82287)
 - Church of St Maelog located c.1.3km south of the Site (26768);
 - Pont Rhydyronnen (rubble stone bridge), located c.1.8km south of the Site (82400)
 - Upland (Georgian, three storey house) and Former Stables at Upland, located c.1.4km west of the Site (21456 and 21457)
- There are two scheduled ancient monuments within the 3km study area comprising:
 - Castell y Domen, Gwempa, the remains of a motte and ditch of medieval date, located c.1.7km south-east of the Site (CM240); and
 - Pen Celli Standing Stone, the remains of a standing stone of probable Bronze Age date and assumed to be of funerary and / or ritual function, located c.1.7km east of the Site (CM122)
 - The nearest Registered Park and Garden is the Grade II Llechdwnni, located just over 3km south of the Site (PGW(Dy)21(CAM)) associated with the Grade II listed Old House at Llechdwnni (14553). The closest conservation areas to the Site comprise Llansteffan c.7km to the west and Carmarthen Town Conservation Area c.6km to the north.



3 Relevant Design Proposals

3.1 Overview

3.1.1 This Section sets out the relevant design policies for determining this application. It should be noted that the Planning Statement sets out the relevant planning policies and how the proposal accords with national and local policy. Therefore, this section of the DAS only relates to relevant design principles.

3.1.2 In this instance the following documents are considered material in the consideration and determination of this application with regards to design:

- Planning Policy Wales (Edition 12) (2024)
- Technical Advice Notes (TAN) 12: Design (2016)

Planning Policy Wales (Edition 12) (2024)

3.1.3 Planning Policy Wales (PPW) sets out that the Welsh Government is strongly committed to achieving the delivery of good design in the built and natural environment. Paragraph 3.3 of the PPW sets out that:

“Design is ... the relationship between all elements of the natural and built environment and between people and places. To achieve sustainable development, design must go beyond aesthetics and include the social, economic, environmental, cultural aspects of the development, including how space is used, how buildings and the public realm support this use, as well as its construction, operation, management, and its relationship with the surrounding area.”

3.1.4 Paragraph 3.5 of the PPW states that: *“Good design is inclusive design. Development proposals should place people at the heart of the design process, acknowledge diversity and difference, offer choice where a single design solution cannot accommodate all users, provide for flexibility in use and provide buildings and environments that are convenient and enjoyable to use for everyone.”*

3.1.5 Further, paragraph 3.7 sets out that good design promotes environmental sustainability. It explains that development should seek to maximise: *“energy efficiency and the efficient use of other resources including land, maximise sustainable movement, minimise the use of non-renewable resources, encourage decarbonisation and prevent the generation of waste and pollution”.*

Technical Advice Note (TAN) 12: Design (2016)

3.1.6 PPW is supplemented by topic-based Technical Advice Notes (TANs), of which there are 21 in total. These TANs provide detailed planning advice and are material considerations in the determination of planning applications in Wales. TAN 12 is of particular relevance to the proposal.

3.1.7 TAN 12 promotes ‘sustainability through good design’ and ‘Planning for sustainable buildings’. To create sustainable development, design must go beyond aesthetics and include the social, environmental and economic aspects of the development, including its construction, operation and management, and its relationship to its surroundings.

3.1.8 TAN 12 sets out the five objectives of good design:

- Access: Ensuring ease of access for all.



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- Character: Sustaining or enhancing local character; promoting legible development; promoting a successful relationship between public and private space; promoting quality, choice and variety; promoting innovative design.
- Community Safety: Ensuring attractive, safe public space; security through natural surveillance.
- Movement: Promoting sustainable means of travel.
- Environmental Sustainability: Achieving efficient use and protection of natural resources; enhancing biodiversity; designing for change.

3.1.9 These points are discussed within section 4 of this DAS.



4 Scheme Design

4.1 Introduction

- 4.1.1 This section provides a summary of key features of the Proposed Development, focusing on the principles of character, access, movement, environmental sustainability, community safety and response to policy.

4.2 Character

Scale and Layout

- 4.2.1 The scale and layout of the Proposed Development has evolved through the design process with consideration of the policies set out above. Whilst the design of the Proposed Development is bound by its functionality, the importance of protecting the natural environment and landscape has been recognised in the design of the development.
- 4.2.2 As set out above, the character of the area and wider context was considered at the site selection stage. Having selected the site, a micro-siting exercise took into account the immediate surroundings and site features, aiming to utilise the landform and natural screening to limit the landscape impacts of the Proposed Development.
- 4.2.3 The appearance of the Proposed Development is dictated to some degree by the inherent function and safety requirements which derive from its role as a substation. The Proposed Development only includes the equipment necessary for the effective, efficient and safe operation of the proposed substation.
- 4.2.4 Measuring 260 metres by 640 metres the platform comprises of hardstanding with drainage and earthing for electrical equipment. It will be surfaced with grey stone chippings. The National Grid 400 kV AIS substation will be located on the level platform in a fenced compound measuring 155 metres by 602 metres.
- 4.2.5 The remaining space on the platform will be used for two smaller 132 kV substations, built and operated by NGED and Green Gen Cymru respectively. NGED and Green GEN Cymru will apply for separate consent to construct their proposed substation compounds, as well as the connections into the proposed 400 kV substation.

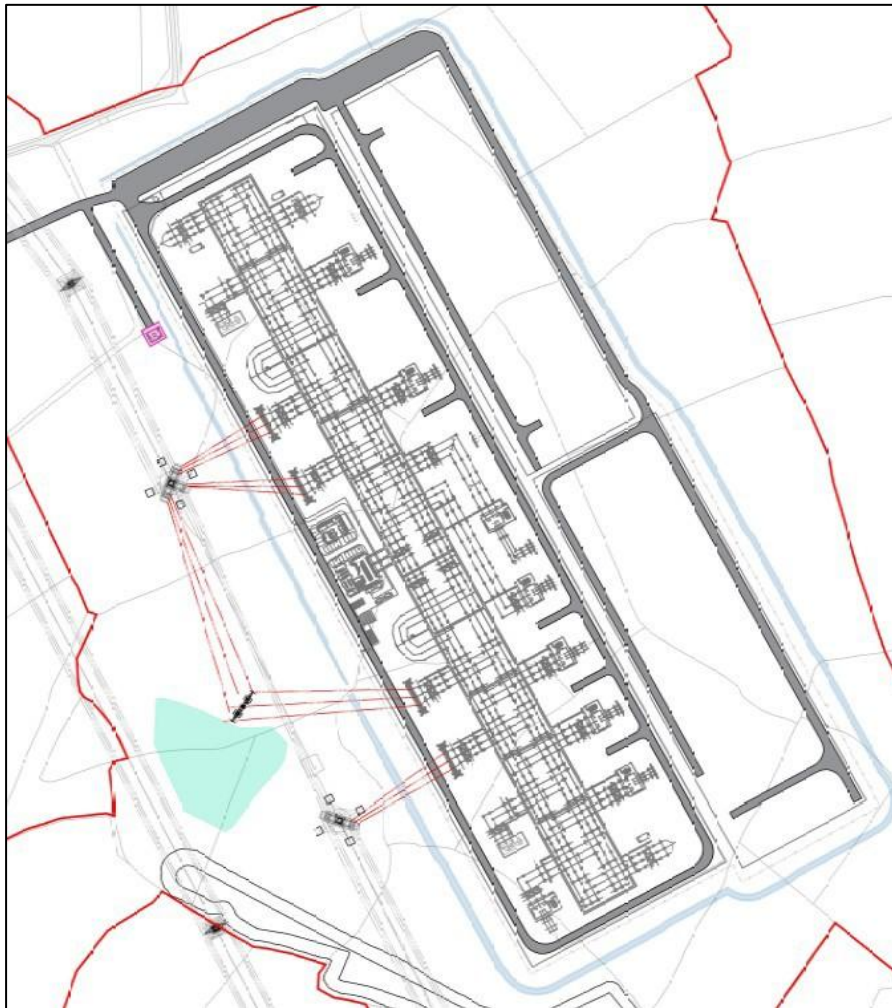


Figure 2: Indicative Site plan showing the platform design

- 4.2.6 The AIS substation equipment will consist of a variety of vertical structures supporting overhead busbars with ancillary equipment. The maximum height of the equipment will be approximately 15 metres. There will be up to 8 Supergrid Transformers (SGTs) located within the substation. Each transformer will be sited on a reinforced concrete base within the compound and surrounded by noise enclosures. There is also provision for 2 future reactive compensators.

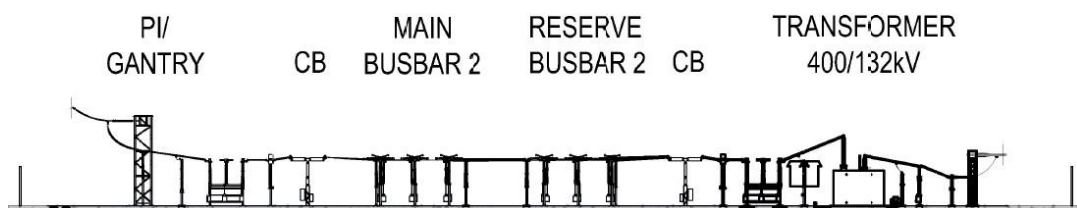


Figure 3: Plan extract showing the vertical structures across the Site.

- 4.2.7 A control building, amenities building, and storage units will be sited within the compound, measuring 23.3 metres by 26.3 metres, 14.7 metres by 17.6 metres, 6 metres and 2.5 metres respectively. The storage units are modified shipping containers. The control building will house computers and controls to operate the substation. The amenities building will contain office and welfare facilities.

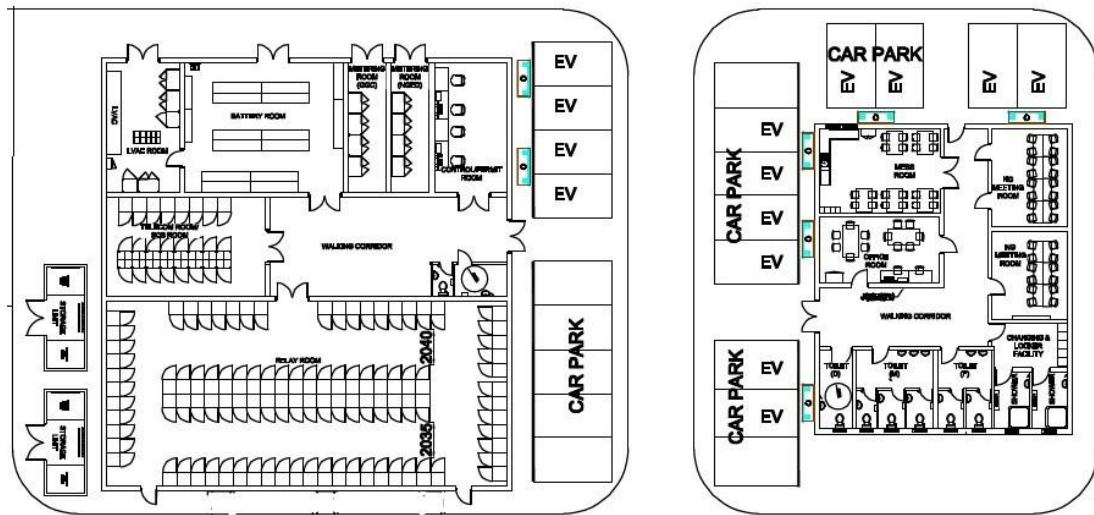


Figure 4: Indicative Plan view of Buildings

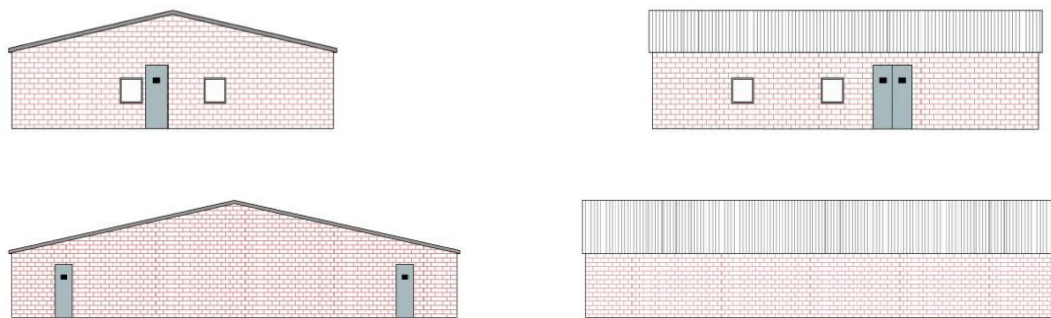


Figure 5: Indicative buildings elevation images

- 4.2.8 Close to the main entrance but external to the substation there will be a small DNO supply point required for a low voltage power supply to the site. Within the site adjacent to the buildings a package diesel generator is required to be used as back up if the low voltage power supply fails.
- 4.2.9 Car parking will be provided next to the control and amenities buildings as well as the workshop/storage units, providing up to 23 spaces (including EV charging facilities).
- 4.2.10 The compound will be enclosed by an electrified security fence (measuring 3.4 metres in height). Passive infra-red security lighting and closed-circuit television security cameras will surround the equipment and create a secure compound. The equipment will be lit for maintenance purposes, and any lighting solution will be prepared in accordance with the current Design Standards for Exterior Lighting.
- 4.2.11 The internal road and pedestrian area layout for the substation compound has been designed to allow the safe movement of vehicles and pedestrians and has had regard to relevant health and safety legislation and good industry practice. The site access road is designed to allow delivery of the SGTs, and operational and maintenance access around the substation.

4.3 Materials

- 4.3.1 The Substation equipment would comprise of a variety of steel structures and lattice work.
- 4.3.2 The control and amenities buildings will be of traditional block and brickwork construction.

4.4 Access and Movement

- 4.4.1 The Transport Assessment which has been prepared by Stantec, demonstrates out how the site will be accessed safely from the wider highway network in the construction and operational stages. It also demonstrates why a new access of the A484 was required to serve the Proposed Development.
- 4.4.2 Accessibility to the site more generally is also considered in the Transport Assessment. There are opportunities to access the site sustainably and by public transport. However it is acknowledged that owing to the location and functionality of the Proposed Development the primary means of access is likely to be by vehicle for operational purposes. That said that site will not be accessed daily once operational and visits are limited to maintenance purposes
- 4.4.3 Vehicular access to the Site will be from the A484 via a new bellmouth junction. The access would be used for construction traffic and operational access. The bellmouth junction will be made up of asphalt and grasscrete (grasscrete indicated in red in the diagram below).



Figure 6: Access to the Site will be from the A484 via a new bellmouth junction.

- 4.4.4 A metalled internal access road six metres wide would run from the bellmouth junction to the platform for a distance of approximately 600m. The asphalt bellmouth and internal access road will be bounded by a fence line, nominally 1.1m high and hedgerow.

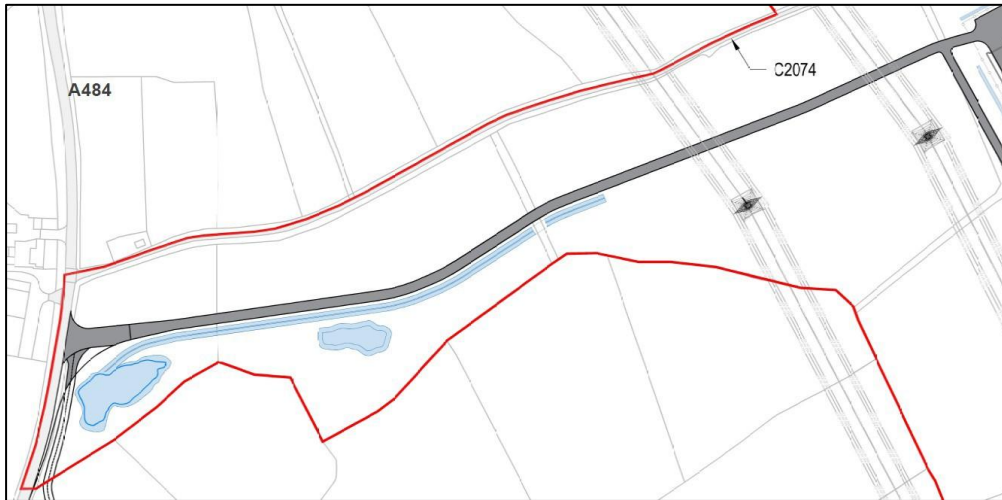


Figure 7: Internal highways arrangements

- 4.4.5 The proposed new access road for the substation will bisect the existing gravel access track leading from the C2074 to the single residential dwelling adjacent to the site on the A484. It should be noted that this gravel access track is privately maintained and does not form part of the adopted public highway. Access to the gravel track will be re-established via the new bellmouth.



Figure 8: The relationship between the existing access and the new bellmouth.

- 4.4.6 The existing accesses from the C2074 to the fields south of the road will be maintained with gates installed to manage and control access during the construction period.

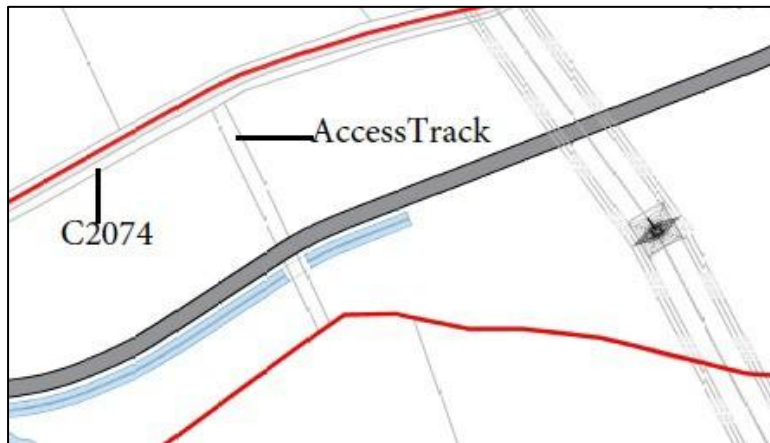


Figure 9: Existing Site Access

- 4.4.7 Due to the functional nature of the Proposed Development, there will be no public access to the Site. Hence there is no footway along the access road. There is level access around the substation buildings, and accessibility has been considered in the design of the buildings.

4.5 Environmental Sustainability

- 4.5.1 The design of the Proposed Development, in particular the single platform design evolved to minimise land take, enable the installation of a holistic drainage strategy, and limit construction impacts locally.

- 4.5.2 The approach to Green Infrastructure aims to allow the Proposed Development to assimilate into its surrounding as far as possible while also looking to incorporate retained landscape and ecological elements into the design where practicable:

- Enhancement / reinforcement of a number of existing hedgerows across the Site to retain field boundary patterns in perpetuity where possible, enhance visual screening opportunities, and enhance the existing green infrastructure network.
- Proposed native hedgerow planting to introduce new habitat connections where hedgerows are lost to construction wherever possible and suitable.
- Proposed native hedgerow planting along the northern and southern embankments of the proposed access track to compensate for the loss of field boundary hedgerows, provide additional visual screening, and provide amenity value.
- Seeding areas with species rich grassland where land would no longer be viable for agricultural use to increase amenity and ecological value, with particular focus on purple moor grass and rush pasture.
- Planting of woodland blocks southeast and directly west of the substation compound to provide visual screening from nearby properties and enhance key characteristics of the local landscape character.
- Planting of individual trees to the east of the substation to break up views towards the substation from sensitive receptors at Bancycafel.
- Creation of SuDS ponds south of the proposed access road to provide amenity value and potentially increase Net Benefit for Biodiversity (NBB).
- Provision of a 3m landscape bund which effectively wraps around the south-eastern corner of the substation compound planted with scrub up to an additional 5m to provide screening in views from the property to the southeast and from the A484.

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- Scrub planting throughout the Proposed Development, including along and between the landscape bund, to aid visual screening, provide additional green network connections, and enhance net biodiversity benefit. Enhancement and mitigation which provides a net gain for biodiversity includes:
- a band of species-rich native scrub to the south and south west of the substation, as well as an area to the south of the substation access road;
- two areas of mixed woodland to the south west of the substation, totalling to 0.5 ha;
- species-rich grassland surrounding the substation and either side of the access road;
- A pond and two SuDS basins planted with native aquatic and marginal species adjacent to the access road and to the west of the substation and swales around the perimeter of the substation and adjacent to the access track; and
- species-rich native hedgerows adjacent to the access track and in sections surrounding the substation, as well as enhancement of existing hedgerows where possible.
- The Proposed Development will also provide species specific measures including reptile hibernacula, bat boxes, dormouse boxes and bird boxes and is anticipated to include a sensitive lighting design avoiding light spill on habitats with suitability for bats and hazel dormice.

4.5.3 The measures are designed to deliver a measurable Net Benefit for Biodiversity (NBB) in accordance with Planning Policy Wales and the DECCA Framework. The proposals will:

- enhance and create habitats and improve habitat connectivity;
- support protected and notable species; and
- provide for long-term management and monitoring to secure biodiversity gains.
- Enhancement of existing field boundary hedgerows and provision of new hedgerows across the Site to:
 - maintain and/or provide green infrastructure connections across the Site.
 - strengthen existing hedgerow network within the Site and local landscape.
 - provide valuable sheltering and foraging habitat for protected and notable species including but not limited to hazel dormouse, bats, birds, reptiles, amphibians and badger.
- Earthworks to the southwest of the proposed development planted with scrub to provide:
 - a degree of visual screening from the nearby road network and properties;
 - ecological connectivity west to east across the Site; and,
 - valuable sheltering and foraging habitat for protected and notable species including but not limited to hazel dormouse, bats, birds, badger, amphibians and reptiles.
- Provision of a strong mixed woodland block transitioning into scrub and species-rich grassland to the west of the proposed development to:
 - provide a net benefit for biodiversity through the provision of valuable sheltering and foraging habitat for protected and notable species including but not limited to hazel dormouse, bats, birds, badger, amphibians and reptiles.



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- Inclusion of an improved drainage system across the Site including swales and SuDS ponds providing:
 - valuable wetland habitats for protected and notable species including amphibians and invertebrates;
- Extensive areas of species-rich grassland across the Site where agricultural practices would no longer be viable providing valuable ecological connectivity and habitat for invertebrates and other protected and notable species. In addition, where areas are identified for species-rich grassland the creation of purple moor-grass and rush pasture would be encouraged as a habitat of principal importance.
- The proposed development will also provide species specific measures including reptile hibernacula, bat boxes, dormouse boxes and bird boxes. It is anticipated that a sensitive lighting design will be incorporated into the proposed development to avoiding light spill on habitats with suitability for bats and hazel dormice.

4.6 Community Safety

Design

- 4.6.1 The Proposed Development by virtue of its design and function will be a secure facility with no public access.
- 4.6.2 The compound will be enclosed by an electrified security fence (measuring 3.4 metres in height). Passive infra-red security lighting and closed-circuit television security cameras will surround the equipment and create a secure compound. The equipment will be lit for maintenance purposes, and any lighting solution will be prepared in accordance with the current Design Standards for Exterior Lighting

Fire Safety

- 4.6.3 A Fire Safety Report will be prepared at the detailed design stage and could be secured by use of a suitably worded condition. The Fire Safety Report will demonstrate that the proposed development will satisfy all functional requirements.
- 4.6.4 National Grid conducts comprehensive risk assessments and collaborates with various government agencies to ensure each substation is individually secured and protected. All facilities meet government and industry standards, with teams regularly testing and strengthening system resilience to ensure the safe and efficient transmission of electricity.

Electric and Magnetic Fields

- 4.6.5 Electric and Magnetic Fields (EMFs) are produced by a current flowing through a conductor. The strength of the magnetic field from a substation can increase or decrease depending on the electricity demand in that area. Substations do not produce a significant external electric field however they do provide a magnetic field. As set out on the National Grid website¹ *“Magnetic field levels at the boundary of a substation are typically at a level of 1 or 2 μ T, but this decreases very quickly as you move away.”* At approximately 1-2 metres from the substation, the magnetic field is usually lower than the field found in the average home.
- 4.6.6 The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has set the UK guidelines for magnetic fields and these guides have been formally adopted by the Government. The ICNIRP ‘reference level’ for public exposure is 100 μ T for power frequency (50 Hz) magnetic fields.

¹ <https://www.nationalgrid.com/stories/energy-explained/is-living-next-to-substation-safe> [accessed on 12 October 2025).



4.6.7 The Proposed Development has been designed to comply with the ICNIRP guidelines.

4.7 Response to Planning Policy

4.7.1 The relevant planning policies are identified and have been considered, but are not repeated within this DAS. Please refer to the Planning Statement (prepared by Stantec, October 2025) which sets out how the proposed development has addressed the policy. The Planning Statement conclusion confirms that the proposed development has assessed and confirmed compliance with the adopted Development Plan as a whole, as required by S38(6) of the Planning and Compulsory Purchase Act 2004.

4.7.2 The proposed development has been designed to meet all the technical and policy considerations within the Planning Policy Wales and TAN 12: Design documents as well as responding to the Site context.



5 Conclusion

- 5.1.1 This application is submitted to Carmarthenshire County Council and seeks full planning consent for the delivery of a new 400kV substation (including the substation platform, access road and associated infrastructure) (the Llandyfaelog Project), near Llandyfaelog, Carmarthen, South Wales.
- 5.1.2 This DAS has provided an overview of the Site and the Proposed Development, outlined the design principles on matters of use, layout, amount, scale, appearance, landscaping, and access, that have informed the Developed Proposals. It has also provided a summary of the site selection process. The design and access issues associated with the Proposed Development have been assessed.
- 5.1.3 The Site was carefully chosen to minimise environmental and local impacts. The development aligns with local and national goals for a resilient, low-carbon electricity grid that meets current and future energy demands while ensuring reliable supply.
- 5.1.4 In summary, the proposed development has been well-designed, meets all the technical and policy requirements and responds appropriately to the Site context.

