

Coed Ely Solar Farm Design & Access

The Urbanists Prepared by:

Address: Cardiff The Creative Quarter, Studio 410, Generator Building

Finzels Reach Bristol, BS1 6BX

Bristol

8A Morgan Arcade, Cardiff, CF10 1AF

info@theurbanists.net

Website: www.theurbanists.net

06.07.23 Issue date:

FINAL Drawing status:

Revision:

Email:

WP **Author:**

Checked by: LH

On behalf of:





All plans within this document are reproduced from Ordnance Survey with permission of the controller of His Majesty's Stationary Office (C) Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution/ civil proceedings. Licence No 100054593.



Contents

- 01. Introduction
- 02. Site Description
- 03. The Proposed Development
- 04. Legislative Context
- 05. Design Context and Approach
- 06. Planning Policy Assessment
- 07. Conclusion

01. Introduction

This Design and Access Statement (DAS) accompanies a full planning application for the development of a solar farm on land adjacent to Coed Ely in Rhondda Cynon Taf County Borough.

The development proposed is 'major development' and hence is accompanied by this DAS in accordance with the Planning Act. The DAS details the site, development proposals, and then examines the project against the principles of good design relevant planning policy.



02. Site Description -

The Site

The development site is located to the west of the Coed Ely settlement and south of the Thomastown settlement. The site is approximately 15ha and was formerly a colliery and subject to landfill use. In spite of its industrial past; the site now has a greenfield character and is used for grazing livestock (this will continue alongside the development). The site is owned by Rhondda Cynon Taff County Borough Council and has an active agricultural tenant.

The site is located west above the valley floor and typically slopes from west (the valley top) down to the east (the valley floor). There is currently direct access into the site from a private gated maintenance track that connects to the Parc Coed Elai road, which connects to the strategic highway network of the A4119 (the Ely Valley Road). A PRoW dissects the site, but this consists of a rural lane that is not part of the operational site area, and would be retained. The lane serves a series of dwellings and ends at an operational farm; it connects to the local Coed Ely highway network.

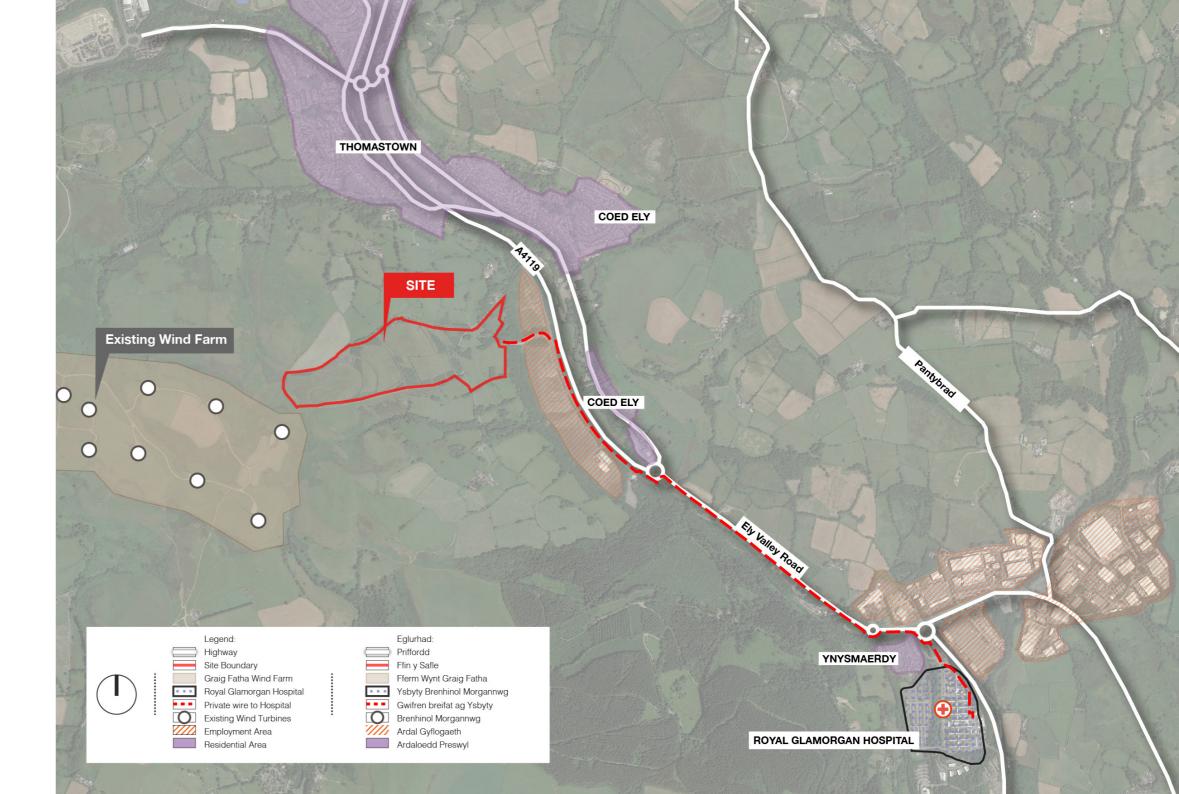
In the LDP the site falls outside of the designated settlement boundary and falls under the following designations: Special Landscaped Area, Sandstone Resourcing Area, and Land Reclamation Scheme. Immediately to the west of the site is the Tonyrefail Mountain SINC. The western extent of the site has been identified as being of SINC quality and no development is proposed in this area.

In respect of other statutory mapping the site is not designated as subject to flood risk constraints according to both the Development Advice Map and Flood Maps

for Planning, although there is some localised surface water flooding that would require management as part of the development. No part of the site is identified as being of high-quality agricultural land (all parts are below the 3a category) and none is designated access land or common land.

The majority of the site habitat is a mixture of semi-upland 'ffridd' habitats with mature hedgerows and tree planting demarcating the boundaries of the sloping fields. The vast majority of the grassland on the site is to be maintained alongside the proposed development, as are the trees and hedgerows.

The private wire connection to the Royal Glamorgan Hospital will start in the main development area and then leave the site via the access track constructed to build the Graig Fatha wind farm, run south along the Parc Coed Elai road and then further south via the A4119, which is currently being upgraded, and into to the Royal Glamorgan Hospital estate. The route will be within the existing highway environment and then the existing Hospital estate.



02. Site Description

02. Site Description -

The Local Area

The site is located in a Pre-Assessed Area for wind energy, and immediately to the west of the site is Graig Fatha Wind Farm, which stretches from the western boundary of the site into the wider valley landscape. To the east of the site is a large vacant strategic development site that could accommodate 31,000 sqm of employment space when delivered. This is located in the Parc Coed Elai estate, and one the key access routes to the site dissects the development plateaus of the strategic development site. The access route was built to deliver the Graig Fatha Wind Farm. Immediately to the north are two detached residential properties that are served off the rural lane / PROW, while to the south is an operating farm with associated dwelling and agricultural buildings.

Beyond Parc Coed Elai is the local highway network that connects to the A4119 (the Ely Valley Road where it passes east of the site) and the local valley settlements. The closest settlement is Coed Ely, which is located east and north east of the development and Thomastown which is located to the north of the development site. Further to the north is the larger settlement of Tonyrefail. Each settlement is characterised by the traditional vernacular of the South Wales Valleys with housing (a combination of traditional terraced housing and more modern detached properties) local retail services, key community infrastructure (including schools, surgeries and community halls), local employment premises and outdoor recreational facilities. To the south of the development site is the settlement of Ynysmaerdy, which includes the Royal Glamorgan Hospital and a large collection of light industrial, distribution and manufacturing uses. A large solar farm is also proposed on the opposite valley slope to the development site. This is a private venture that is not led by the Council.











03. The Proposed Development

O3. The Proposed Development -

The Development

Rhondda Cynon Taf County Borough Council is planning to develop a 6-megawatt peak solar farm. The total peak capacity of the solar farm is 7.25-megawatts of power per hour, but connection agreements are in place for 6-megawatts of power per hour. An export agreement for 5-megawatts per hour has been agreed with the national grid operator, National Grid Electricity, to export to the local electricity network. The remaining 1-megawatt per hour will be exported to the Royal Glamorgan Hospital via a private wire route, providing the Hospital with renewable electricity.

The solar farm will include the following parts:

- 10,992 solar panels mounted on steel frames known as a table, which will be approximately 2.5 metres above the existing site ground level.
- 4 electricity substations across the site to facilitate connection to the grid. These will be approximately 3 metres high.
- 18 inverters situated across the site and which would be screened below the solar tables.
- A 2m high perimeter fence around the margins of the solar panels.

The solar farm would have an east/west orientation, meaning 50% of the panels would be facing due east, and 50% due west. The panels would be pitched on steel frame structures that would sit approximately 2.5m above ground level. The solar panels would have a pitch of 10 degrees, which is a non-conventional pitch that has been selected to significantly reduce the glint and glare from the solar panels. Solar panels are designed to absorb sunlight, not reflect it but the proposed pitch would further minimise glint and glare from the panels. The spacing between the solar panels would be 4m; this along with the height of the panels above ground levels can ensure that existing site habitat is largely maintained and can continue to be grazed by sheep, which currently takes place on the site.

Throughout the operation of the solar farm sheep would continue to graze on the grass under and around the solar panels. Once every year the solar panels would be cleaned to ensure that they remain efficient. The solar farm would have a lifespan of 40 years.

The site would not require the creation of new access routes as it is currently accessible from Parc Coed Elai, a two-way single carriageway located to the east of the main solar farm area, and which connects directly to the A4119, via the access track that was built to construct and maintain the Graig Fatha wind farm. The rural lane that serves the local farm and residential dwellings also provides a viable access for the maintenance of the site. The existing access routes ensure that the development can be constructed and maintained without the need for vehicles to go through residential areas.



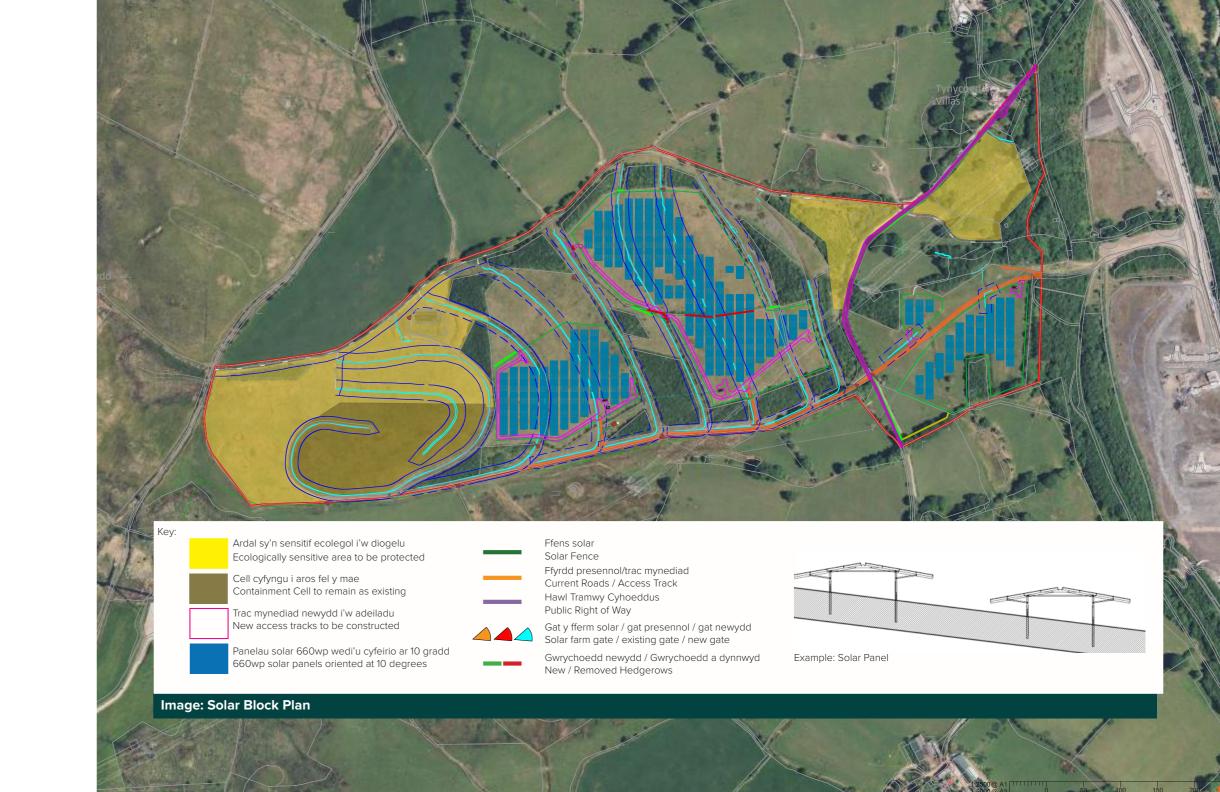




O3. The Proposed Development - Why is the Development Proposed?

Wales has declared climate and nature emergencies, and the Council is committed to playing its part. Making Rhondda Cynon Taf County Borough Council Carbon Neutral By 2030 is the plan that explains how the Council would contribute, and it includes the following targets to be achieved by 2030: to ensure the Council is carbon neutral; to ensure the wider County Borough is a close as possible to being carbon neutral; and, to contribute to Welsh Government's ambition to deliver a Net Zero public sector. The plan also commits the Council to work with public and private partners so that by 2040 all organisations operating in the County Borough are carbon neutral. The proposed solar farm project would help to deliver each of these targets, and it would also generate green energy to power our Council buildings.

The solar farm would help to deliver significant public sector decarbonisation. The annual energy generation from the solar farm would be approximately 6,570,000 kWh, which would deliver expected lifetime carbon savings of 7,355 tonnesCO2 for the Council and the Health Board. The solar farm would also help with significant cost savings, offering insulation from energy market volatility.



04. Legislative Context

04. Legislative Context

It is a statutory requirement under the Planning (Wales) Act 2015, that planning applications for the following types of development are accompanied by a Design and Access Statement (DAS):

- All planning applications for "major" development except those for mining operations, waste developments, relaxation of conditions (section 73 applications), and applications of a material change in use of land or buildings; and,
- All planning applications for a development in a Conservation Area or World Heritage Site Which consists of the provision of one or more dwellings or the creation of floorspace of 100 sg. m. (gross) or more.

Major development that is non-residential is defined as any development of over 1,000 sq.m. of new floor space, or development on a site with an area of 1 hectare or more. The proposal is categorised as major development and therefore the application is required to be accompanied by this DAS.

The guidance document prepared by Welsh Government and the Design Commission for Wales (2017) states that a DAS must demonstrate and clearly communicate the logical design process; the requirements of a DAS reflect the objectives of good design set out in Planning Policy Wales (PPW) and Technical Advice Note 12: Design (TAN 12). It advises that a DAS should communicate what is proposed and demonstrate the design process that has been undertaken to

reach the final proposal, explaining how the design has responded to the site, context, brief, vision, relevant policy and the objectives of good design.

The remainder of this DAS is structured to meet this guidance. The next section explains the design process that has been followed, describing how the design has sought to respond to the site character and brief. The final section identifies how the site responds to relevant planning policy and legislation, including the objectives of good design.

05. Design Context and Approach -

Background

When the proposed development was first considered the development brief to the design team was to explore the capacity of the entire site to accommodate a solar farm that would generate as much green energy as possible and have the greatest positive impact in in delivering public sector decarbonisation; delivering lifetime carbon savings for the Council and the Health Board, significant cost savings; and, offering insulation from energy market volatility. However, the brief was also clear the scale of development would need to be informed by the nature of the site, in particular its the ecological and landscape features and also any constraints posed by its previous industrial (coal mining) use. The design of the proposed scheme has therefore been informed by a full constraints and opportunities analysis of the site, which are listed below:

- Ecology
- **Ground Contamination**
- Trees and Hedgerows
- Landscape Character
- Visual Impact
- Glint and Glare
- Surface Water Management
- Highways
- Agricultural Land
- Private wire route

1/

O5. Design Context and Approach - Key Design Decisions

Ecology

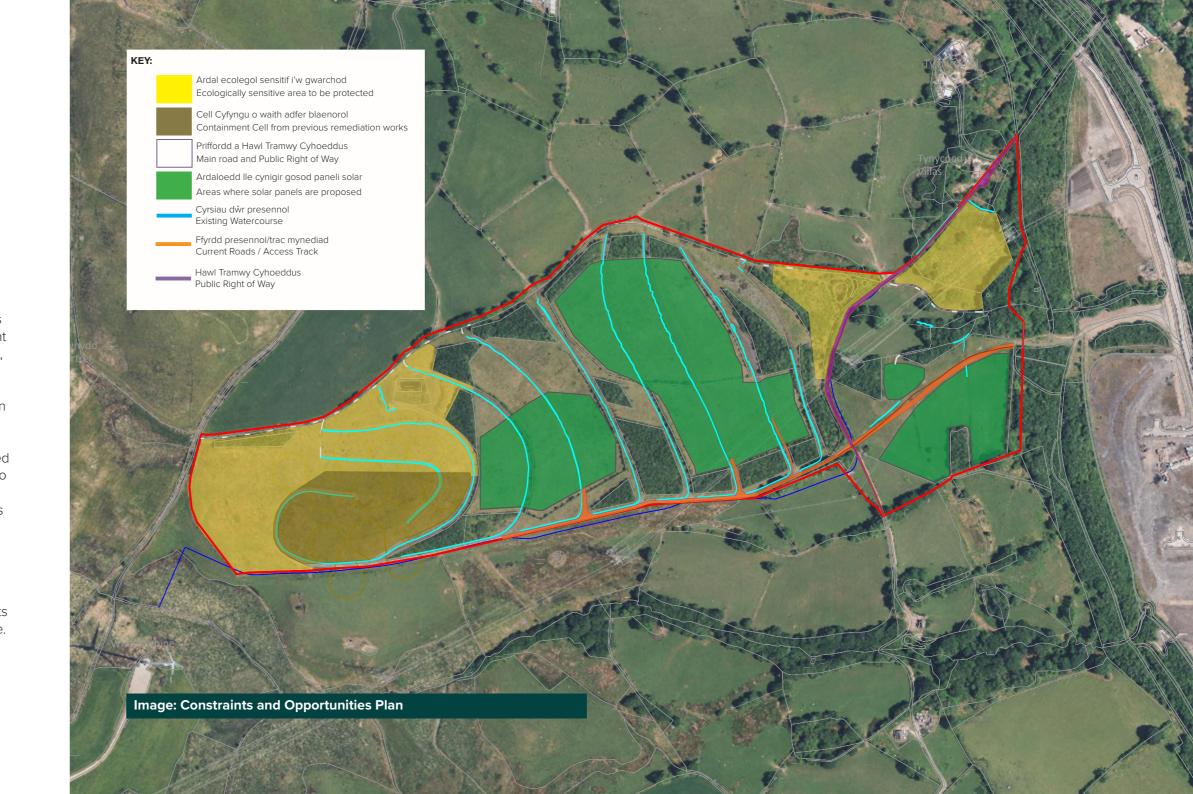
Although the development site is reclaimed land that has previously been used for industrial uses, it is now largely greenfield in nature, and if the development is unmitigated there could be effects on protected species and the loss of valuable existing natural habitat. However, the proposed design has been informed by Extended Ecology Phase 1 and Phase 2 Surveys and Report(s) which have identified priority species present on the site (nesting bird species including cuckoo, skylark and meadow pipit), provided guidance on how these should be protected and defined areas of habitat that should also be protected from development due to their biodiversity value. For example, the western extent of the site which is marshy grassland has been excluded from development due to its habitat value at the recommendation of the ecology surveys. A parcel in the north east of the site has also been excluded from development. In addition to the exclusion of key areas of the site, the remainder of the existing site habitat where solar panels will be located will be retained with panels integrated into the habitat. Some temporary loss and disturbance would be required during construction and some areas where new access tracks would need to be lost to deliver new access tracks, but the vast majority of the habitat would be retained. The height of the panels has also been selected to ensure sufficient space below for existing grazing of sheep to continue as part of a comprehensive management plan that has the potential to increase the value of the retained habitat. While the angle chosen to ensure that sufficient daylight will reach the ground to ensure retained habitat continues to grow as per the existing state.

Ground Contamination

The main site area is located on part of the former Coed Ely colliery site and has been subject to landfill use. Whilst the development does not require significant intrusion into the ground and the site has been subject to extensive reclamation, it is possible that contamination effects could arise from delivering the development, without suitable precautionary measures being followed. The key mitigation followed has been to exclude a former containment cell in the western section of the site from the solar farm area. The latter was created during the reclamation work and the exclusion will ensure that it will remain undisturbed. In respect of the solar panels and associated steel frames, they have been selected as they are relatively light and easy to implement without significant intrusion into the depth of the ground. They would also be implemented in accordance with an agreed piling methodology that would ensure existing contamination remains undisturbed and managed.

Trees and Hedgerows

There are mature trees and hedgerow on the site that could be subject to effects if a sensitive design approach is not followed. However, this will not be the case. The mature trees and vast majority of the hedgerows located on the site have been retained within the proposed layout, with appropriate offsets included so that they remain undisturbed and do not shadow the solar panels and reduce their efficiency. A section of hedgerow that does require removal represents



05. Design Context and Approach

O5. Design Context and Approach - Key Design Decisions

only 16% of the hedgerow on the site, and it has been assessed as having limited ecological value. As part of the development replacement hedgerow is proposed that would be more species rich and be located in key locations where it would help to screen views of the development.

Landscape Character

The development site is now largely greenfield in character, so the proposal would result in a material change in the landscape character of the site that could arise in landscape character effects. The site is also part of a designated Special Landscape Area and therefore its development may result in some minor effects on the wider Landscape Area. However, the development site is also part of a Pre-Assessed Area for wind energy generation and its landscape character is strongly defined by the Graig Fatha wind farm and also the built environment and infrastructure on the valley floor. The retention of large areas of the site for ecological and ground contamination reasons shall ensure that the landscape character change is limited.

Visual Impact

The site is located a considerable distance from residential receptors in Coed Ely, but it is elevated and can be seen via long distance views from the opposite valley slope and parts of the valley floor. Visual effects therefore need to be reduced as much as possible and the design has sought to do this. The existing

trees and the vast majority of the hedgerows are retained to screen views of the solar panels and integrate it into the landscape, new replacement hedgerow will limit the up-close visual impact of the development, and the panels have also been arranged to follow the site topography and site contours integrating them as much as possible. The retention of large areas of the site for ecological and contamination reasons further helps to assimilate the solar farm into the site and surrounding landscape and reduce its visual impact. Finally the height of the solar panels and supporting infrastructure has been minimised and would not exceed 3 metres in height above ground level, ensuring the solar panels have a low ground profile when compared to the wind turbines of the Graig Fatha wind farm that are in the background and define the key views of the solar farm where the visual impact would be most noticeable.

Glint and Glare

The proposed approach to reducing the visual impact of the development, specifically retaining site hedgerow and trees, following the site topography also ensure that glint and glare effects of the development are minimised. The specification and orientation of the panels has also been selected to reduce the effects further.





05. Design Context and Approach

O5. Design Context and Approach - Key Design Decisions

Surface Water Management

There are a number of small watercourses on the site and as part of the development these are to be retained, with the steel structures upon which the solar panels are installed located to avoid the watercourses. To manage surface water runoff from the solar panels, a surface water drainage strategy has been prepared. Surface water from the solar panels would fall into swales where it would receive pollution mitigation and be transferred to the existing watercourses on the site. The swales would attenuate and control the release of the surface water which would travel to the watercourses across the existing ground replicating the existing movement of surface water on the site. The drainage design would ensure that the current surface water run-off rate on the site remains the same following the completion of the solar farm.

Highways

The access design utilises existing access routes to the site. Vehicles required to construct the solar farm would access the site from the existing access track that was built to construct the wind farm development, which connects to Parc Coed Elai and the A4119. This would ensure construction vehicles do not go through residential areas. Operational vehicles would be low in number and relatively small but could also utilise this access track, or the lane / Public Right of Way that dissects the main development area, and which will be retained in its existing condition as part of the development design.

Agricultural Land

None of the land in the site is best or more versatile land, but it is actively grazed and this arrangement would continue. To ensure this can happen the solar panels have been designed to retain the existing grassland beneath, providing sufficient height of the ground for sheep to graze below the panels. The grazing of the land would be part of a wider management programme for the site that would aim to improve the ecological value of the site.

Private wire route

The route of the private wire from the main solar farm area to the Royal Glamorgan Hospital has been selected to follow the alignment of the local highway network ensuring that impacts on neighbouring land users is avoided. The majority of the ducting required for the wire has already been installed as part of the Ely Valley Road widening project, and the actual wire will be installed when the works on the widening project are ongoing to avoid any additional disruption to the highway and users.





06. Planning Policy Assessment

06. Planning Policy Assessment -

National Planning Policy

A planning appraisal of the development has been undertaken and is included in the planning application alongside this DAS. A full review of the proposed planning context is provided in the appraisal and this section will not repeat that in full. This section rather identifies the key findings of the appraisal reflects on how the proposed development and design approach meets the key requirements of local and planning policy and legislation, including the objectives of good design as set out in TAN 12.

Assessment Against National Planning Policy

National planning policy is overwhelmingly supportive of appropriate renewable energy developments and therefore it is considered that there is 'in principle' support for the proposed development. Appropriate renewable energy development is deemed to be that which can be delivered without unacceptable impact on natural resources and the amenity of local residents and communities. A snapshot of the support provided in national policy that underpins the judgement for 'in principle support' is below:

- Planning Policy Wales States that "the benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance."
- Planning Policy Wales Planning Authorities are to ensure their area's full potential for renewable and low carbon energy generation is maximised and renewable energy targets are achieved.

- Future Wales "Wales can become a world leader in renewable energy technologies. Our wind and tidal resources, our potential for solar generation, our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector".
- Future Wales Policy 17 identifies Pre-Assessed Areas, which is an area that
 has been modelled to identify the likely impact on the landscape of delivering
 major wind energy developments and where it has been found that the
 landscape is capable of accommodating development in an acceptable way.
 The development is located in such an area; this is a significant strength in
 the case for the development.
- Wellbeing of Future Generations Act Securing a supply of renewable energy is identified in guidance around the Act as essential to achieving wellbeing goals 1 (a prosperous Wales); 2 (a resilient Wales); 5 (a Wales of cohesive communities); and 7 (a globally responsible Wales).

Responding to TAN 12 (Good Design) and Placemaking

Section 5 provided an outline of the key design approaches that development has followed to ensure that it is responsive to the site character. It is therefore considered that it is fully in line with good design objectives set out in Technical Advice Note 12 as per the summary in the table to the right.

By meeting the good design objectives it is also considered that the development meets the requirement of Future Wales and Planning Policy Wales to practice placemaking and contribute to the creation of distinctive places. The development would deliver significant positive benefits in terms of renewable energy production and commitments by the Council and Health Board to decarbonise. The development's nature as an energy infrastructure project means that it must include certain equipment, but the design approach demonstrates that it has made every effort to respond to the site and reduce the impact on the wider residential settlements. It is therefore considered to fully align with the placemaking guidance of Future Wales and Planning Policy Wales.

TAN 12 Good esign Objective	Design Response
Access	The objective is not considered to apply; due to the nature of the proposed development access into it is restricted to construction personnel and site operatives. However, the development would not impact on existing access arrangements in the local area.
Character	The design of the development has sought to respond to the site, retaining important ecological habitat and natural resources (watercourses, hedgerow and trees). It also seeks to respond to the site topography to integrate the scheme as much as possible into the landscape and reduce the visual impact from local residential areas.
Community Safety	The development is appropriately restricted and protected with security fencing and CCTV cameras to ensure that it will operate safely. Construction would not impact on community safety with all construction vehicles using the strategic highway network and avoiding residential areas.
Environmental Sustainability	The development layout protects those areas of the site where priority species have been found and the site habitat is deemed to be of high quality. It also retains the existing trees and the majority of the hedgerow; where hedgerow is removed it would be replaced with a more species rich replacement. The containment cell, which was created when the site was remediated, is also to be left undisturbed.
Movement	The nature of the development means it cannot promote sustainable means of travel so the objective again does not comply. However, the development would generate a very low number of operational vehicles. It would also not prohibit wider sustainable travel by retaining the existing PRoW that goes through the middle of the site.

06. Planning Policy Assessment

O6. Planning Policy Assessment Local Planning Policy

Assessment Against Local Planning Policy

Local planning policy is more prescriptive, reflecting its development management purpose. However, in principle support for the scheme is considered to exist, as the sensitive site bespoke design approach ensures the development can meet the requirements of policy:

- CS2 Development in the South: The proposed development would create renewable energy, provide green energy into the grid and a local public facility; helping to strengthen the economy as required by the policy, including delivering inward investment to strengthen the economy.
- AW2 Sustainable Locations: The development site by its nature is outside
 of the settlement boundary, but it would not conflict with surrounding uses as
 required by the policy. Surrounding uses consist of agricultural and energy
 generation, which co-exist in the countryside landscape. The development
 would replicate this existing arrangement.
- AW5 New Development: The proposed development will be designed so
 that it retains the natural landscape and ecology features on the site, it will
 also be assimilated into the site topography to reduce its visual presence. As
 the policy requires this will ensure that the development safeguards natural
 resources and amenity of neighbours.

- AW6 Design and Placemaking: The infrastructure proposed as part of the development is relatively small in scale and height. The siting of the development has also been led by the ecological character of the site and its topography. The development thus meets the requirements of the policy.
- AW7 Protection and Enhancement of Built Environment: The risk to unknown
 archaeology is minimal given the nature of the proposed development and
 the historic reclamation works that have taken place. However, a desktop
 archaeology assessment is to be undertaken. The development would
 safeguard an existing public right of way and would not impact on open
 space. The development thus satisfies the policy requirements.
- AW8 Protection and Enhancement of the Natural Environment: There is a
 Site of Importance for Nature Conservation to the west of the development
 site, but the development would not impact directly on it and development
 has been kept out of the western extent of the site to provide a buffer and
 protect ecology in that area an ensure no indirect impacts on the SINC.
- AW10 Environmental Protection and Public Health: The nature of the
 development means it would have no impact on light, air and noise amenity.
 To ensure flood risk is not increased the development would have a SuDS
 system that maintains the existing run off rate and ensures no water pollution
 from soil erosion. The operation of the scheme would not result in pollution.
 Contamination and land instability would be prevented by constructing in
 accordance with the findings of site investigations.

- AW12 Renewable Energy: The development will maintain the majority of the existing habitat and this soil resources; the remainder will be subject to enhancement. Agricultural activity will also continue with grazing happening within the development as part of the biodiversity enhancement strategy. The retention and enhancement of the site habitat shall ensure no undue impact on wildlife and the natural environment. Finally, the integration of the development infrastructure into the site topography and avoiding ecologically rich areas of the site will ensure that the development would not be visually overbearing to the residents, which are located a considerable distance from the development. It is considered that the development is fully in alignment with this key local policy.
- SSA 23 Special Landscape Areas: The development site is part of a
 Special Landscape Area, but the approach to working with the localised site
 topography and retaining large areas of the site that are ecologically and
 landscape rich will ensure that it will not have a significant impact on the
 wider Area. The Landscape Area is part of the Pre-Assessed Area for wind
 development and there are already significant wind energy infrastructure
 framing views of the site.
- SSA 24 Land Reclamation Schemes: The site is part of the Coed Ely reclamation aftercare scheme. Construction of the development will therefore be informed by desktop research and site investigation to ensure contamination and land instability are fully considered. The nature of the development means significant excavation and intrusion will be minimal, so risks posed by contamination and ground instability are low.

07. Conclusion

This Design and Access Statement sets out the background to the proposed Coed Ely solar farm development; describing the site and its character and also the extent of the development proposed. It also demonstrates how the scheme design has evolved to be appropriate to the site and local areas, and how it meets relevant policy and legislation, including the objectives of good design. On this basis it is considered that the Statement meets the legislative requirements of a Design and Access Statement.

The delivery of the proposed development would help to deliver significant public sector decarbonisation. The annual energy generation from the solar farm would be approximately 6,570,000 kWh, which would deliver expected lifetime carbon savings of 7,355 tonnesCO2 for the Council and the Health Board. The solar farm would also help with significant cost savings, offering insulation from energy market volatility.

In light of the considered design approach that is respectful to the site and local area, and the significant benefits that would be delivered from the development, it is considered that the proposed development is suitable on design and policy grounds and suitable to be granted planning permission.

theurbanists

Cardiff

Email

The Creative Quarter 8a Morgan Arcade Cardiff, CF10 1AF

info@theurbanists.net

Bristol

Studio 410, Generator Building Finzels Reach Bristol, BS1 6BX

Phone

029 2023 6133

www.theurbanists.net