HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

6.4.76 ES Volume D - WNDA Development App D11-5 - Assessment of Significance of Dame Sylvia Crowe's Landscape Design at the Existing Power Station

PINS Reference Number: EN010007

Application Reference Number: 6.4.76

June 2018

Revision 1.0

Regulation Number: 5(2)(a)

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Horizon Internal DCRM Number: WN0902-JAC-PAC-APP-00024

[This page is intentionally blank]

Wylfa Newydd Project

Horizon Nuclear Power

Assessment of Significance of Dame Sylvia Crowe's Landscape Design at the Existing Power Station

WN034-JAC-PAC-REP-00069 | 3

7 December 2017

Jacobs U.K. Limited

Document history and status

Revision	Date	Description	By	Review	Approved
0	19/09/2016	Draft document for comment	Maria Klimek	Sandra Honeywell	Rob Bromley
1	04/05/2017		Maria Klimek	Jonathan Dempsey	Rob Bromley
2	05/06/2017	2nd Revision – Document revised following client comments.	Elli Winterburn	Jonathan Dempsey	Rob Bromley
3	07/12/2017	Document Checking by Arup	Matthew McFarlane	Bethan McEwan	

Wylfa Newydd Project

Project No:	60PO8008
Document Title:	Assessment of Significance of Dame Sylvia Crowe's Landscape Design at the Existing Power Station
Document No.:	WN034-JAC-PAC-REP-00069
Revision:	3
Date:	7 December 2017
Client Name:	Horizon Nuclear Power
Client No:	TBC
Project Manager:	Rob Bromley
Author:	Maria Klimek

Jacobs U.K. Limited

95 Bothwell Street
Glasgow G2 7HX
United Kingdom
Tel: +44(0)141.243.8000
Fax: +44(0)141.226.3109

www.jacobs.com

Contents

List of Figures

List of Plates

List of Appendices

Executive Summary

The assessment of significance of Dame Sylvia Crowe's designed landscape at Wylfa Nuclear Power Station (hereinafter the Existing Power Station) was undertaken by Jacobs UK Ltd in accordance with the guidance provided in *Conservation Principles for the Sustainable Management of the Historic Environment in Wales* (Cadw, 2011). The assessment is based on a review of desk-based sources and a site visit which included a photographic survey.

Dame Sylvia Crowe's design for the Existing Power Station from the 1960s is considered successful in achieving a sympathetic transition between power station buildings and landform, and in screening the large substation from most directions while at the same time providing a recreational area (Purdy, 1999; Collens and Powell, 1999; Grove-White, 2015). Using the guidance provided by Conservation Principles, Crowe's landscape has been assessed to be of medium significance. This is primarily due to its historical association with Crowe, an eminent landscape architect, author and a pioneer in the field of large-scale planning (i.e. landscape planning for large-scale developments), whose career spanned over 70 years and several continents, and who made important contributions to the development and promotion of the discipline of landscape architecture.

this page is intentionally blank for double-sided printing

1. Introduction

Jacobs UK Ltd was commissioned by Horizon Nuclear Power Wylfa Limited (Horizon) to undertake an assessment of the significance of the landscape designed by Dame Sylvia Crowe as part of the development of the Existing Power Station in the 1960s. The landscape is located to the south of Wylfa Head, on the northern coast of Anglesey in Wales. Its extent is shown on figure 1.

The assessment of significance has been undertaken in accordance with the guidance provided in Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw, 2011).

1.1 Aims and objectives

The aim of the assessment is to understand the elements which make up the Dame Sylvia Crowe's designed landscape at the Existing Power Station, and to assess the significance of the designed landscaped based on its evidential, historical, aesthetic and communal value, in line with the guidance provided by Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw, 2011).

The objective of the assessment was to understand the history, design concept, planting and function of the designed landscape primarily by undertaking the following:

- a review of desk-based sources, including a literature review; and
- a site visit and photographic survey.

this page is intentionally blank for double-sided printing

2. Methodology

2.1 Sources of information

To put Dame Sylvia Crowe's designed landscape into its landscape context, a study area extending 4km in all directions from it was defined. For this study area, information was obtained from the following:

- Aerial photography;
- Ordnance Survey mapping;
- planning policy and guidance;
- LANDMAP;
- Isle of Anglesey County Council Landscape Strategy (2011); and
- published and online sources relating to Dame Sylvia Crowe and her work at the Existing Power Station.

A site inspection was also undertaken on 3rd, 4th and 5th May 2016.

LANDMAP (Natural Resources Wales, various dates), the Wales-wide, interactive information system, is an important resource and was used in this assessment. LANDMAP describes and evaluates aspects of the landscape covering Geological Landscapes, Landscape Habitats, Visual and Sensory, Historic Landscapes and Cultural Landscapes. All aspects have a single overall evaluation score. The overall score (from Low to Outstanding) is calibrated from little or no importance to a national or international scale of importance. This report uses the Visual and Sensory, Historic Landscapes and Cultural Landscape LANDMAP data for the study area, as these aspects best inform the heritage values (discussed in more detail in 2.2. below) on which the assessment of value is based.

Photographs were taken in accordance with the Landscape Institute Advice Note, Photography and Photomontage in Landscape and Visual Impact Assessment (Landscape Institute, 2011). A number of viewpoint locations have been photographed which show representative or illustrative views from publicly accessible areas in north Anglesey to inform the assessment of significance, and particularly understanding of the aesthetic value of the designed landscape. In this context, a representative view exemplifies a range of view locations and an illustrative view depicts a particular feature or aspect of the view. Copies of the photographs taken are provided in Appendix A.

2.2 Assessment of significance

The significance of Dame Sylvia Crowe's designed landscape was assessed using professional judgement informed by the guidance provided in Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw, 2011).

Based on this guidance, the significance of the landscape was assessed in terms of its:

- Evidential value: the potential of a place to yield evidence about past human activity.
- Historical value: the ways in which past people, events and aspects of life can be connected through a place to the present - it tends to be illustrative or associative.
- Aesthetic value: the ways in which people draw sensory and intellectual stimulation from a place.
- Communal value: the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory (Cadw, 2011, 38).

The use of the values identified in Conservation Principles as the basis for the assessment of the value of heritage assets aligns with the guidance provided by the Draft *Technical Advice Note 24: The Historic Environment (Welsh Government, 2017)* which states that these four heritage values need to be understood before the significance of the asset can be assessed (Ibid., 5).

3. Historic background

Sylvia Crowe was appointed by the Central Electricity Generating Board (CEGB) as the landscape architect for the Existing Power Station in 1961, following her work for them at Trawsfynydd Nuclear Power Station in Snowdonia National Park in the late 1950s. The landscape at Trawsfynydd is now designated as a Grade II* Registered Historic Park and Garden (Cadw reference GD64).

Construction of the Existing Power Station started in 1963. Crowe was closely involved in the aesthetic design of the power station and its landscaping. The comprehensive landscaping designed by Crowe included artificial hills which were built using material excavated during construction, planting, and a viewing platform.

The Existing Power Station became operational in 1971 and was shut down in 2015 after 44 years of power generation. It is currently undergoing decommissioning which is expected to take many years (Davidson, 2009). The Existing Power Station is listed on the Royal Commission on the Ancient and Historical Monuments of Wales' online database for the National Monuments Record of Wales (Coflein) and is classed as a post medieval industrial site (Coflein NPRN 306329).

3.1 Portrait of Dame Sylvia Crowe

Dame Sylvia Crowe (1901–1997) was one of the most influential British landscape architects of the 20th Century, a prolific writer and one of the founding members of the Landscape Institute.

Her nephew, Simon Crowe, writes that she was frequently referred to as the doyenne of the profession. He relates how from the age of 11 or 12 she was home-schooled having developed a form of tuberculosis, but since her mother had been one of the first women accepted into Oxford University she received a good foundation for her later eloquence (Crowe, 1999, 13).

Sylvia Crowe studied horticulture for two years at Swanley College (now Hadlow College) in Kent. Then, as an employee of Cutbush Nurseries, she was inspired by John Coote (the managing director of the nursery) who, influenced by his travels to Japan, was interested in extensive use of landform and hills in garden design. Crowe found that incorporating small hills in her designs could be a useful device for optically increasing the size of the garden and in 1937 she designed a Royal Horticultural Show gold medal-winning garden using this principle, and its use was later to become a feature in her work (Crowe, 1999, 18).

During World War Two she was an ambulance driver in a Polish brigade in northern France. On her return to England she served in the Auxiliary Territorial Service and was promoted to the rank of Sergeant.

Crowe set up her own practice in 1945. Over the next 45 years of professional practice, her professional interests spanned developments of all scales, from small-scale garden design to large-scale planning, including the post- war New Towns of Harlow and Basildon. She was also expert witness at public inquiries and an eloquent and persuasive writer and speaker. Finally, she was a friend of Sir Geoffrey Jellicoe, another giant of British landscape architecture of the 20th Century.

Sylvia Crowe was well known for the variety of her work involving small garden designs, industrial landscapes, new towns, power stations, and forestry. She advised on landscape design of seven reservoirs in England and Ireland. In the early 1970s, she carried out an analysis of 50 possible reservoir sites and then defended the proposed Rutland Water reservoir at inquiry (Collens and Powell, 1999, 21). Rutland Water is now thought to be one of the most admired reservoirs in England (Layfield, 1999, 8). Crowe was often consulted by Wayleaves officers on the routing of overhead lines and the siting of major substations (Purdy, 1999, 128).

She was famous for her passionate approach to design and her acute awareness of context. Often working as part of an interdisciplinary team, Crowe was keen to persuade her colleagues to recognise and take into serious consideration the significance of views, landform and local character, when determining the location and impact of new interventions in the landscape.

Sylvia Crowe was involved in promoting landscape architecture in the UK and internationally, through her work in Australia and her involvement with the International Federation of Landscape Architects. She was president of the Institute of Landscape Architects (now the Landscape Institute) from 1957 to 1959. In 1964 Crowe became the first landscape consultant to the Forestry Commission (Historic England, 2015) and persuaded the Commission to employ its own landscape architects from the early 1970s (Campbell, 1999, 92).

In 1967 she was awarded the Commander of the Order of the British Empire and was made Dame Commander of the Order of the British Empire in 1973 for an outstanding and long-term contribution to landscape architecture in a significant capacity at a national level (Historic England, 2015).

Crowe was the author of many books on landscape architecture, in which she confronted the challenges of new landscape issues. Exemplified by books such as her 1958 publication on garden design (Crowe 1958a), her textbooks on this topic are considered classics.

4. Literature review

A literature review was undertaken to explore Sylvia Crowe's approach to landscape design and the designed landscape at the Existing Power Station, and to establish the response to her work by other professionals.

4.1 Writing by Crowe

In her 1958 book, The Landscape of Power, Crowe argued that energy infrastructure can be incorporated into the landscape without destroying it (Crowe, 1958b). She saw industrial expansion as an inevitable stage in the evolution of human civilisation, but also recognised the challenge it posed to the British countryside which she considered to be our greatest heritage. She was excited by the concept of nuclear power generation and seemed to share the optimistic attitude towards technological advances predominant in the English-speaking countries at the time of her writing: *"Machines, which were originally a supplement to manual labour, now also serve as extensions of the brain. Man's intellect has extended beyond the exploitation of the earth, to the harnessing of cosmic forces"* (Crowe, 1958b, 12). However, at the same time she believed that the landscape which represents the organic side of life must be kept intact. She observed that larger developments, particularly in more open landscapes, were more easily absorbed into the landscape if their form suggested an extension of organic nature. The surroundings were to be modelled to link nature and construction together into "*the rhythmic flow of a true landscape*" (Crowe, 1958b, 12).

Writing about Nuclear Power Stations specifically, she accepted that nothing could bring the reactors and similar structures down to human scale, but urged for any treatment of the ground around the reactors to pick up and continue the pattern of the outer landscape in order to bind building and landscape together. She insisted that the towers and larger buildings should appear to rise from 'clean ground form', with any ancillaries such as car parks, approach roads, security fence or transformer gear sunk or otherwise hidden away to prevent them spoiling the clean visual effect of the main structure (Crowe, 1958b, 66). This principle was applied by Crowe in her work at Bradwell Nuclear Power Station by sinking the boundary fence in a ha-ha (a recessed landscape design element that creates a vertical barrier while preserving an uninterrupted view of the landscape beyond) and constructing earthworks to conceal the bulk of the transformer gear leading the eye smoothly to the reactor towers.

Crowe advocated the use of massed tree planting or landform to mask the lower buildings of a large industrial complex (Crowe, 1958b, 12). She observed that planting single or sparsely grouped trees close to the tall object to be looked at only accentuated its scale whereas planting in a mass created horizontal weight and was useful for hiding ancillaries, such as fences and generators (Crowe, 1958b, 12).

In terms of changing landscape character through adding planting to the infrastructure buildings, she was of an opinion that it is a superficial approach to landscape, which does not take account of the change already imposed by the proposed structure, nor of the past character of the site or its future potential:

"It may be that other hills in the district are covered with gorse, or chalkland scrub, and that the particular hill in question is only bare because it has been grazed. Therefore, if cover is required visually to obliterate the view of fences and ground construction, the local vegetation can legitimately be used, to preserve the character although not the exact detail of the landscape at the time the building arrived." (Crowe, 1958b, 37).

In her succinct Landscape Report No. 2 for CEGB on the Existing Power Station (Crowe, 1962), Crowe starts with an analysis of the landscape character of the surrounding area, taking note of the colouring and the pattern of the landscape. She then provides an assessment of the comparative value of the landscape, identifying both notable and 'scenically undistinguished' areas. She briefly addresses public use and access at the site, promoting a new footpath link, before providing a detailed account of the likely and intended relationship of the station to the landscape. Moving comfortably between very different scales she advises on hill creation or linking the new planting with nearby plantations, at the same time commenting on the best colour for the fencing or kerbs. Finally, she describes six representative viewpoints which merit special attention and suggests further mitigation measures to ensure their visual amenity. Crowe comes across in the report as observant and determined that her recommendations are given serious consideration.

4.2 Reviews of Crowe's work

In his contribution to the Sylvia Crowe Landscape Design Trust (LDT) Monograph Ian Purdy recounts how Crowe's ideas for ground-shaping at the Existing Power Station were initially met with criticism from the local planners (1999, 125). However, Crowe overcame these criticisms by having the planners driven around the local area to prove that the proposed shapes would fit well into their context. Purdy points to the effectiveness of her design for asymmetric, planted mounds in reducing the visual impact of the Existing Power Station and observes that the buildings appear to grow out of the landform, as conceived by Crowe. Purdy also notes that Crowe's 1958 book, The Landscape of Power*,* was pioneering and helped develop today's landscape and visual impact assessment process.

Duncan Campbell writing in the LDT Monograph about forestry at the Existing Power Station notes that the key design issue for Crowe was how to incorporate tall structures, in particular, the vast substation (some 30m high) into the landscape. Crowe's solution was to create steep mounds planted with trees around the north-eastern and south-eastern corners of the substation. This design was altered, however, with the re-siting of the south-west mound to the south-east corner of the substation, and increase of the contour gradient to accommodate a reduction of the mound footprints (Campbell, 1999, 91). Crowe's original proposals for the use of 'local species' for tree planting were also altered when the Forestry Commission carried out planting in about 1970. Campbell notes that the owners (BNFL Magnox Generation) have named the mounds 'Crowe Mounds', to acknowledge her significant contribution to the overall design at the Existing Power Station, and that Crowe would have supported any proposals for public access and nature trails on site.

Sylvia Crowe has been identified as a pioneer of today's Landscape and Visual Impact Assessment process by Spence:

"Constructions conceived as self-contained problems of design have been the bane of the landscape for the past century; but there is at last a dawning realization that every building, from a single house to a new town, from a small factory to a nuclear power station, must be considered in relation to its site and as part of the complex pattern of our national landscape" (Spence, 2015, 6).

Helen Grove-White, an art historian and artist conducting an artistic exploration of the Wylfa Newydd Power Station Site writes extensively about Crowe's approach, particularly at the Existing Power Station, in *Landmarks Publication.* Grove-White claims the interlocking between landscape and the power plant that Crowe insisted upon at the Existing Power Station is more successful than her work at Bradwell and Trawsfynydd:

"the building is equally prominent in the landscape but the colours, the disposition of building blocks within the land formations and the mounds planted with trees all add up to a better loved ensemble" (Grove-White 2015, 95).

Grove-White reports that the design team, a genuine collaboration between architects, engineers and landscape architect, won an award for the Existing Power Station. The success of Crowe's work at the Existing Power Station in managing the visual effect of a large industrial complex on a sensitive area is also identified by other authors (Collens and Powell 1999; Design Commission for Wales, 2015).

5. Dame Sylvia Crowe's landscape at the Existing Power Station

5.1 Landscape context

The landscape and visual context information presented below relates to the defined study area with the main focus on the immediate location of the designed landscape and covering the extents of the meaningful visibility of Crowe's landscape at the Existing Power Station. The local landscape context is shown on figure 2.

Several landscape-related designations are located within the study area including the Isle of Anglesey Area of Outstanding Natural Beauty, Isle of Anglesey Special Landscape Area, the North Anglesey Heritage Coast, Cemaes Bay Conservation Area and Cestyll Garden Registered Historic Park and Garden, which is located approximately 600m to the south-west of Crowe's designed landscape. The study area also contains the Wales Coast Path and National Cycle Route 566, which are important recreational routes, and numerous public rights of way (figure 3).

The topography of the study area is strongly influenced by rounded drumlin features, which are an important characteristic of the landscape. The surrounding landscape (plate 1) is characterised by the presence of irregularly shaped fields, enclosed by hedgerows (which are often overgrown and gappy), cloddiau (stone-faced earth banks usually with hedge on top), and stone walls. Vegetation is sparse except for occasional woodland belts and shelterbelts around farms and houses.

Plate 1. Local landscape context of the Existing Power Station. May 2016.

Anglesey's historic reputation as the 'breadbasket of Wales', providing grain and livestock for the mountainous mainland, is evidenced by the existing field pattern, and in the survival of a number of windmills formerly employed for grinding the grain. Evidence for early activity is provided by the presence of prehistoric monuments such as standing stones.

Crowe's designed landscape at the Existing Power Station is covered by the Anglesey Landscape Strategy (TACP and Isle of Anglesey County Council, 2011) Landscape Character Area 4: North West Coast which covers the coast of Anglesey between Afon Alaw estuary and Bull Bay. In the study area, this Landscape Character Area is characterised by a rocky and convoluted coastline, with a shingle beach and brackish lagoon at Cemlyn Bay. The area is quiet, but is crossed by the Wales Coast Path and contains evidence of man-made activity such as lime kilns, and most prominently, the Existing Power Station.

While it is not mentioned, the area in which Dame Sylvia Crowe's landscape is located has been evaluated by LANDMAP. A summary of this evaluation is presented in table 1 below.

Table 1 LANDMAP data for Dame Sylvia Crowe's Landscape Design at the Existing Power Station**.**

LANDMAP ASPECT	LANDMAP ASPECT AREA	OVERALL EVALUATION
Visual and Sensory	Wylfa Power Station	Low
Historic Landscapes	Wylfa	Outstanding
Cultural Landscapes	Wylfa Nuclear Power Station area	Outstanding

In support of its assessment of the Wylfa Historic Landscape as being of outstanding value, LANDMAP states that it is:

"Undoubtedly of national significance as a striking and dominant landscape of architectural brutalism and as a location for a controversial type of power plant. The word 'Value' here needs explaining in that the power station is an utterly intrusive element in the historic landscape and is identified here for its rarity and for its uncompromising appearance" (Natural Resources Wales, 2016).

LANDMAP similarly assesses the Wylfa Nuclear Power Station area cultural as being of outstanding value "*for its striking appearance as an architecturally brutal landscape and as an employer*" (Ibid.).

Much of the remaining study area lies within LANDMAP 'North West Anglesey' area, which is described as having an extensive drumlin field resulting in a *"classic 'basket of eggs' description for the landscape"*. This reinforces the importance of the drumlins in the landscape of the study area. The undulating nature of the drumlin landscape encloses and channels views in some locations but affords open views elsewhere from higher ground. There is a strong visual connection with the sea, which is intermittently visible across the study area. Other notable landmarks include the peak of Mynydd y Garn in the north-west of the island.

5.2 Design concept

In her Landscape Report No 2 (Crowe, 1962) for the CEGB, Crowe displayed her clarity of thought and skill when she began with a succinct description of the rolling landscape character of the area, pointing out the colouring of the landscape and the dominant tree species among the sparse vegetation. She assessed the value of the surrounding landscape areas, highlighting the magnificent coastline and the recreational value of Wylfa Head, and acknowledged that the power station would dominate the surroundings within approximately a one-mile radius. Since it was bound to become a new focal point, she emphasised the importance of a good [building] silhouette and colour relationship with the landscape and advocated a bold approach without any attempts at concealing the reactors and spoiling the drama of the structure (which she saw as a positive contribution), but instead suggested a purposeful group of power station buildings of varying heights.

The power station designed by Farmer and Dark was bound to be a dominating focal point in the landscape but the use of pastel colours inspired by the local landscape, as well as varied massing and skyline, as Crowe suggested, help to mitigate this (plates 2 and 3).

Plate 2. Local rock colouring. May 2016.

Plate 3. Applied colour scheme in context (seen from Wylfa Head). May 2016.

Crowe saw the substation as posing the greater risk of overriding the contour patterns with its large rectangular footprint. She decided that spoil from the site could be used to design two hills planted with local species to conceal the substation from key viewpoints (plate 4). The planting was to increase the apparent height of the hills and also to link the station to the surrounding landscape.

Furthermore, she proposed a footpath link to Porth-y-pistyll and insisted that parking and ancillaries should be sited on landward side of the development both to provide shelter and to protect the all-important views from along the coast. Her deep understanding of the landscape context comes across through pieces of advice relating to the smallest detail of the station design, such as the colour of the fencing or road kerbs.

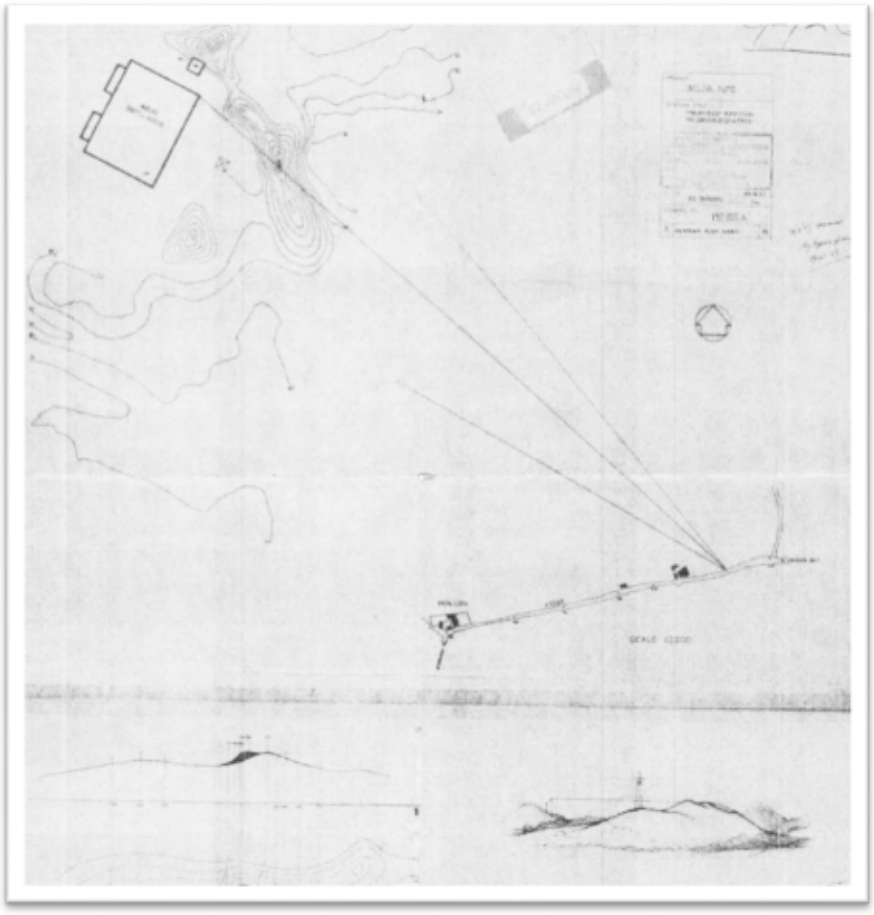


Plate 4. Crowe's drawing of proposed approach to ground shaping. 1966. (Sylvia Crowe and Associates, 1966).

Finally, she described the key viewpoints in the area and provided sketches illustrating the anticipated views from them. Plates 5 to 8 below illustrate some of the sketches from key viewpoints which were presented in the Wylfa Nuclear Power Station Landscape Report No. 2 (Crowe, 1962). These include views from Llanlleiana, east of Cemaes Bay, the A5025 and Porth-y-pistyll. Crowe's designs for the Existing Power Station evolved throughout the 1960s and 1970s, as revealed by her design drawings and reports. As built, Crowe's designed landscape comprised two artificial hills constructed with material excavated during the construction of the Existing Power Station, planted areas, footpaths and a viewing platform (plate 9).

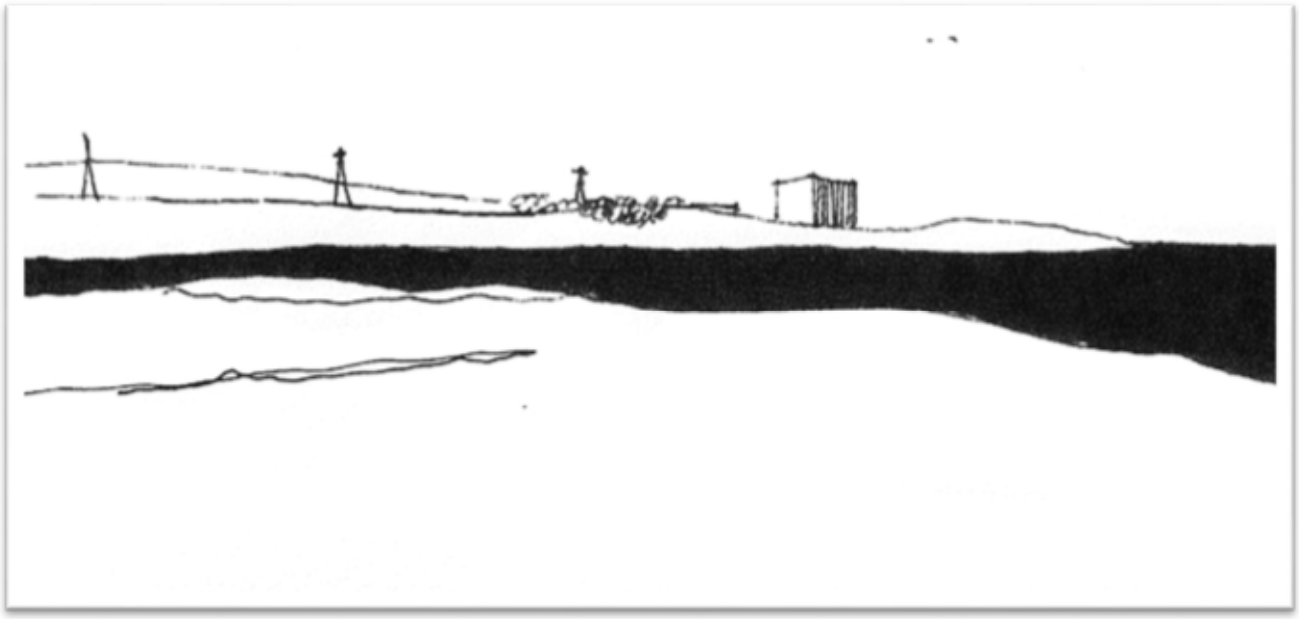


Plate 5. Crowe's sketch of view from Llanlleiana.

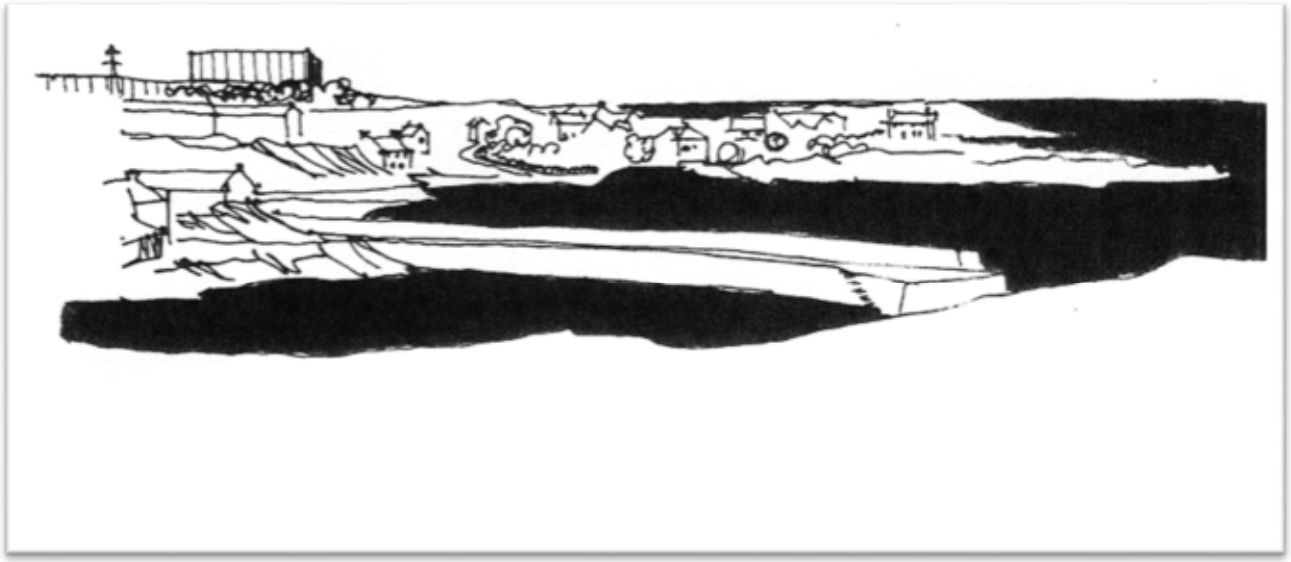


Plate 6. Crowe's sketch of view from east of Cemaes Bay.

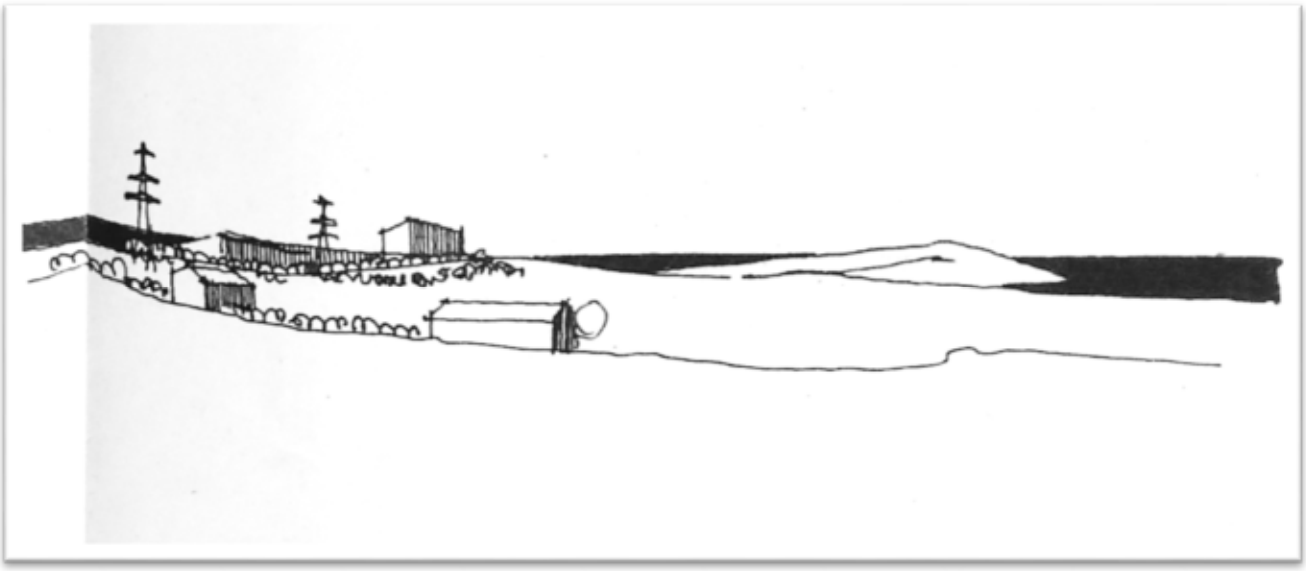


Plate 7. Crowe's sketch of view from the A5025 after re-shaping and planting.

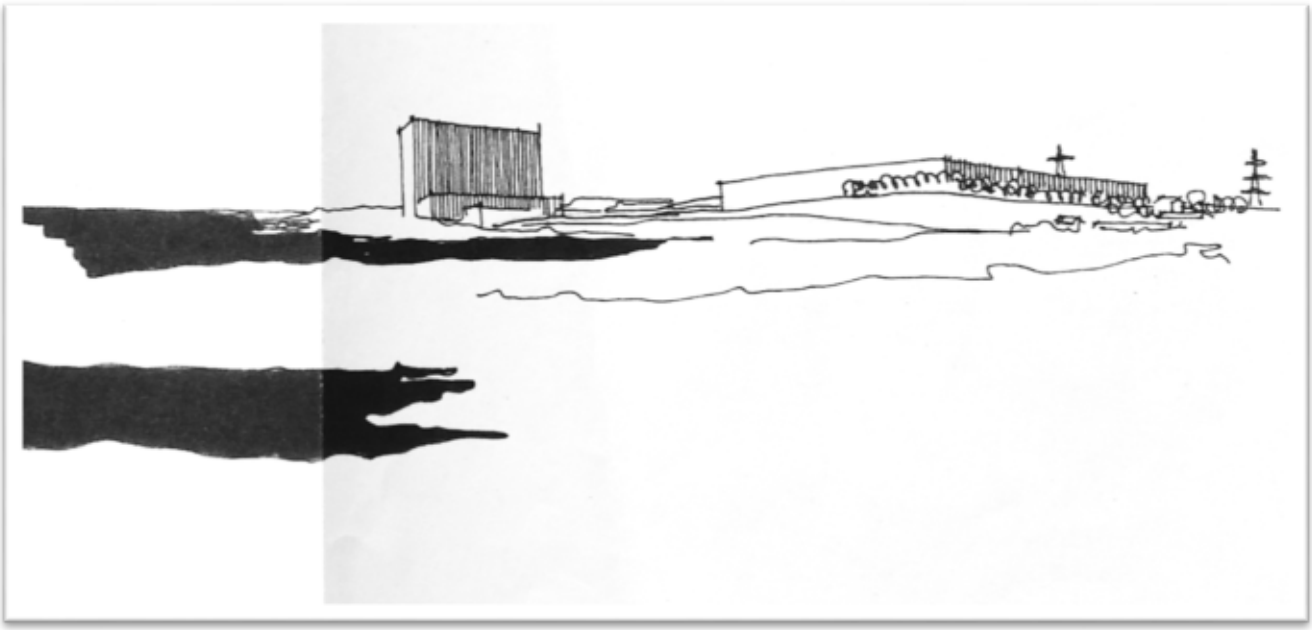


Plate 8. Crowe's sketch of view from Porth-y-pistyll after re-shaping and planting.

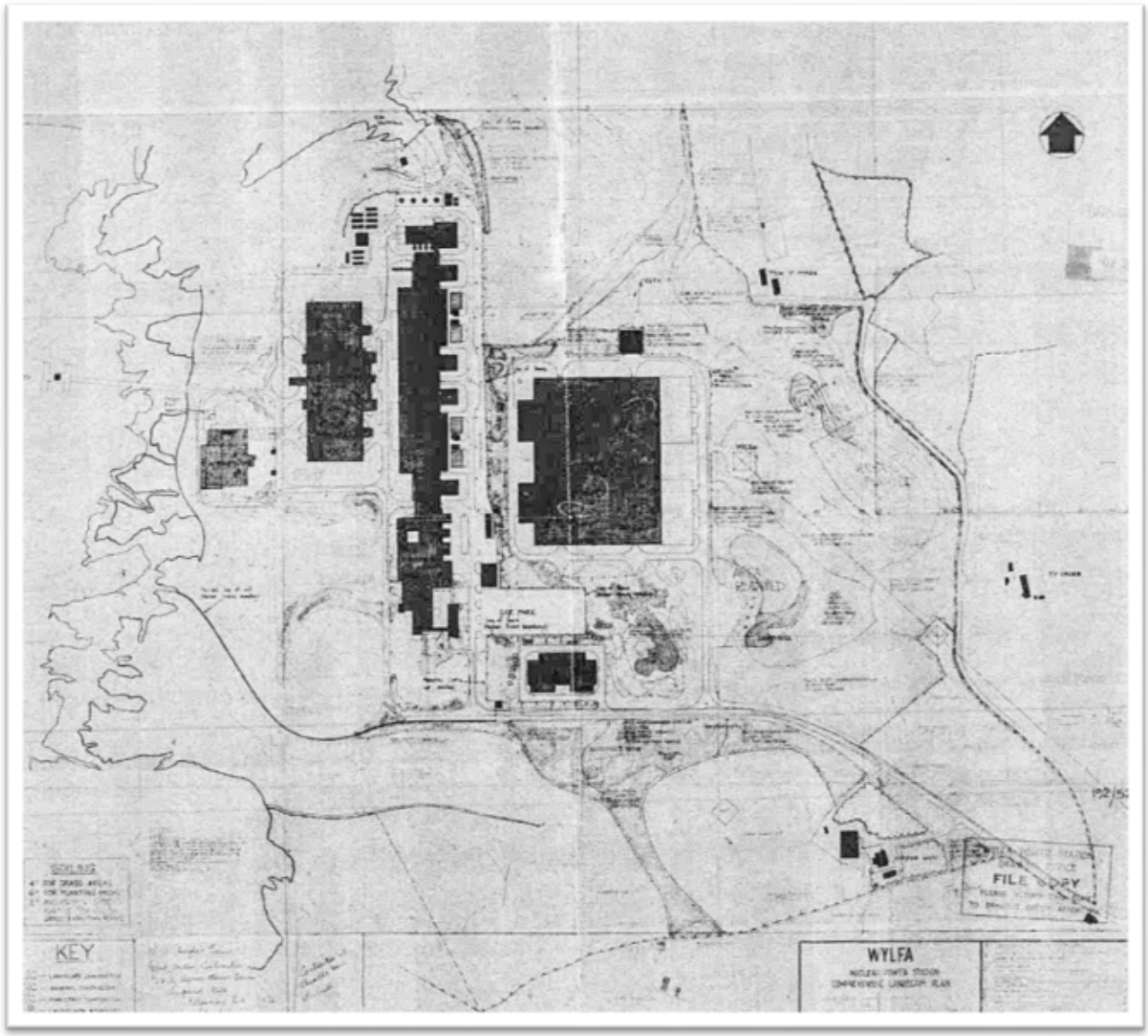


Plate 9. Crowe's comprehensive landscape plan drawing (Sylvia Crowe and Associates, 1966).

5.3 Artificial hills

Sylvia Crowe designed the two planted mounds (Tyn-y-Maes/The Saddle/East Hill and Camp Hill), rising to 40m and referencing the slopes of local hills, partly to conceal the substation and partly to integrate it into the landscape (figure 1). An unpublished report from 1992 by Travers Morgan Landscape notes that in comparison with the original 1962 drawings the constructed hills cover a significantly reduced area although Crowe's key recommendation of 40m OD has been achieved at the expense of an increase in contour gradient (Campbell, 1999, 91: plate 10). The resulting steep contours are out of keeping with the surrounding topography of the gently rolling landscape, but this is effectively concealed by planting, as shown in the photographs presented in appendix A.

Site survey confirmed that the artificial hills fulfil their intended role of screening the substation from the majority of nearby key landscape and visual receptors (see appendix A, Photographic survey). In addition, they appear very well composed in the views from the east, appearing between the rising landform of Wylfa Head to the right and the distant Mynydd y Garn to the left, with their slopes and overall height looking quite natural in this context (plates 1, 6 and 9 in appendix A).

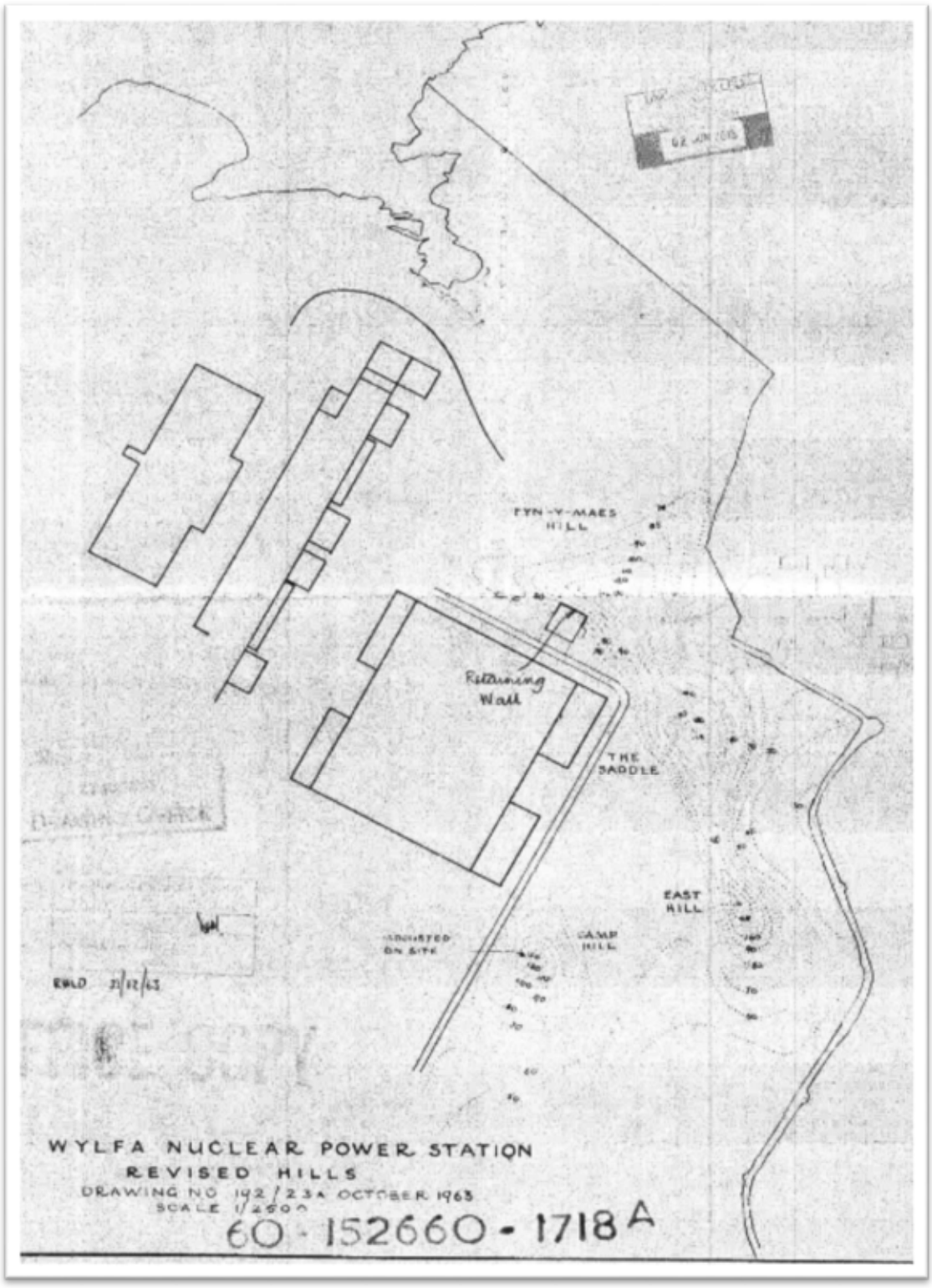


Plate 10. Crowe's drawing of revised hills. 1963. (Sylvia Crowe and Associates, 1966).

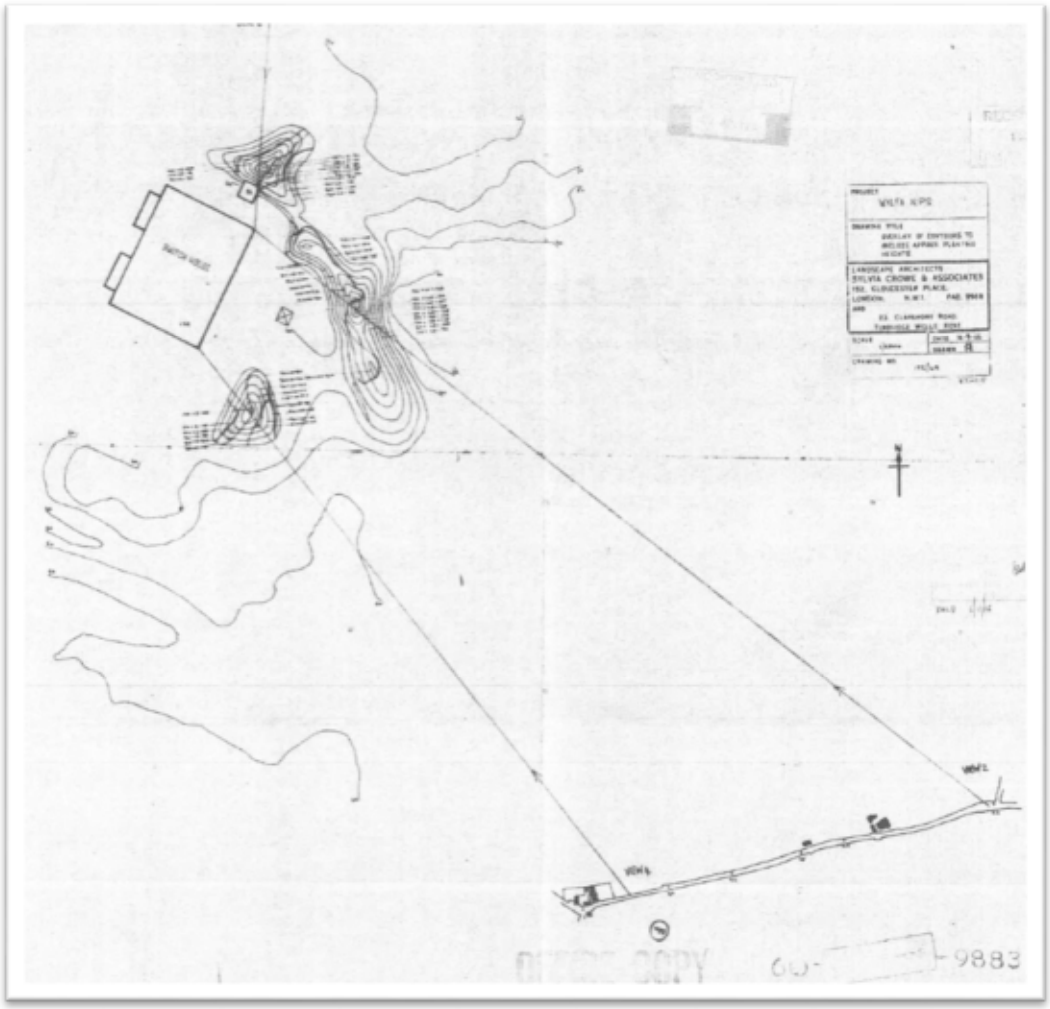


Plate 11. Crowe's overlay of contours to include approximate planting heights. 1966. (Sylvia Crowe and Associates, 1966).

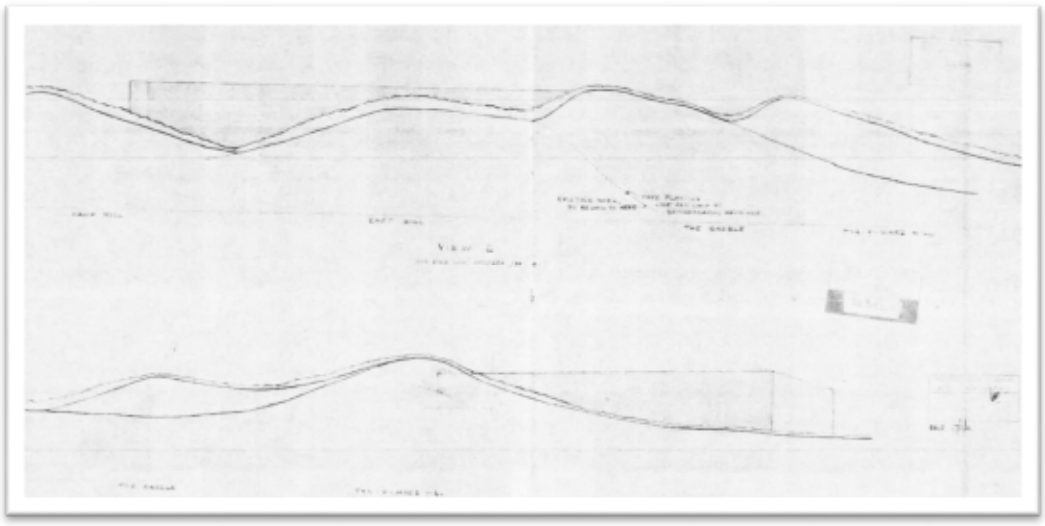


Plate 12. Crowe's perspective elevation of views from east of Cemaes Bay (top) and the sea (Sylvia Crowe and Associates, 1966).

5.4 Stone Wall

Crowe believed that the views of the Existing Power Station from along the coast were very important. She proposed that the security fence be omitted on the sea frontage and positioned close to the buildings elsewhere. She then designed a sympathetic transition between the fenced-off buildings and the surrounding landscape in the form of the curving wall on the south-western boundary of the site (plate 13). The stone wall, characteristic of the local landscape, extends from the car park to the beach. Viewed from the south-west, together with the bund behind it, it helps to conceal the security fence.

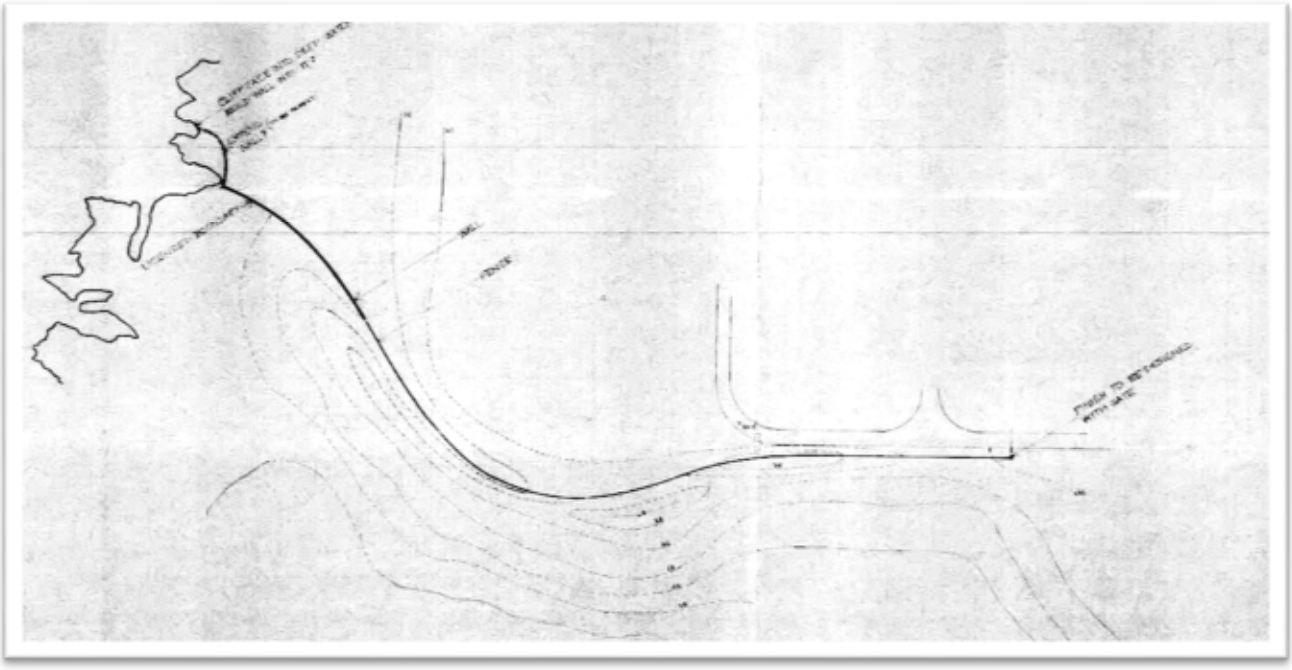


Plate 13. Crowe's south boundary contours and wall plan (Sylvia Crowe and Associates, 1966).

5.5 Planting

Sylvia Crowe's planting design utilised a mixture of pine and sycamore with addition of Leyland cypress, alder, hawthorn, blackthorn and willow to tie in with the local vegetation as well as that at nearby Cestyll Garden, while at the same time providing a naturalistic feel both up close and in views from more distant viewpoints (plates 14 and 15). The density of tree planting (Monterey pine, Leyland cypress, alder, sycamore, hawthorn and sea buckthorn) ensured that rather than being dwarfed by the adjacent substation the trees appear as a large mass, balancing out with their uneven outline the long straight lines of the substation building. In addition, by using a mixture of coniferous and deciduous trees Crowe ensured a lighter and changing look throughout the year, rather than the uniformity that a coniferous plantation would have achieved. Moreover, hawthorn and blackthorn add to the seasonal and community interest along the Wales Coast Path and Nature Trail with their attractive blossom in spring. Within the designed landscape, the transition between the dense sycamore and pine woodland and the scrub or grassy areas is interesting, though a number of dead trees within the woodland may indicate a lack of active management.

Crowe's planting scheme was not fully implemented by the Forestry Commission when the hills were planted around 1970, with Corsican and lodgepole pines being substituted for Monterey pines and Leyland cypress (Grove-White, 2015).

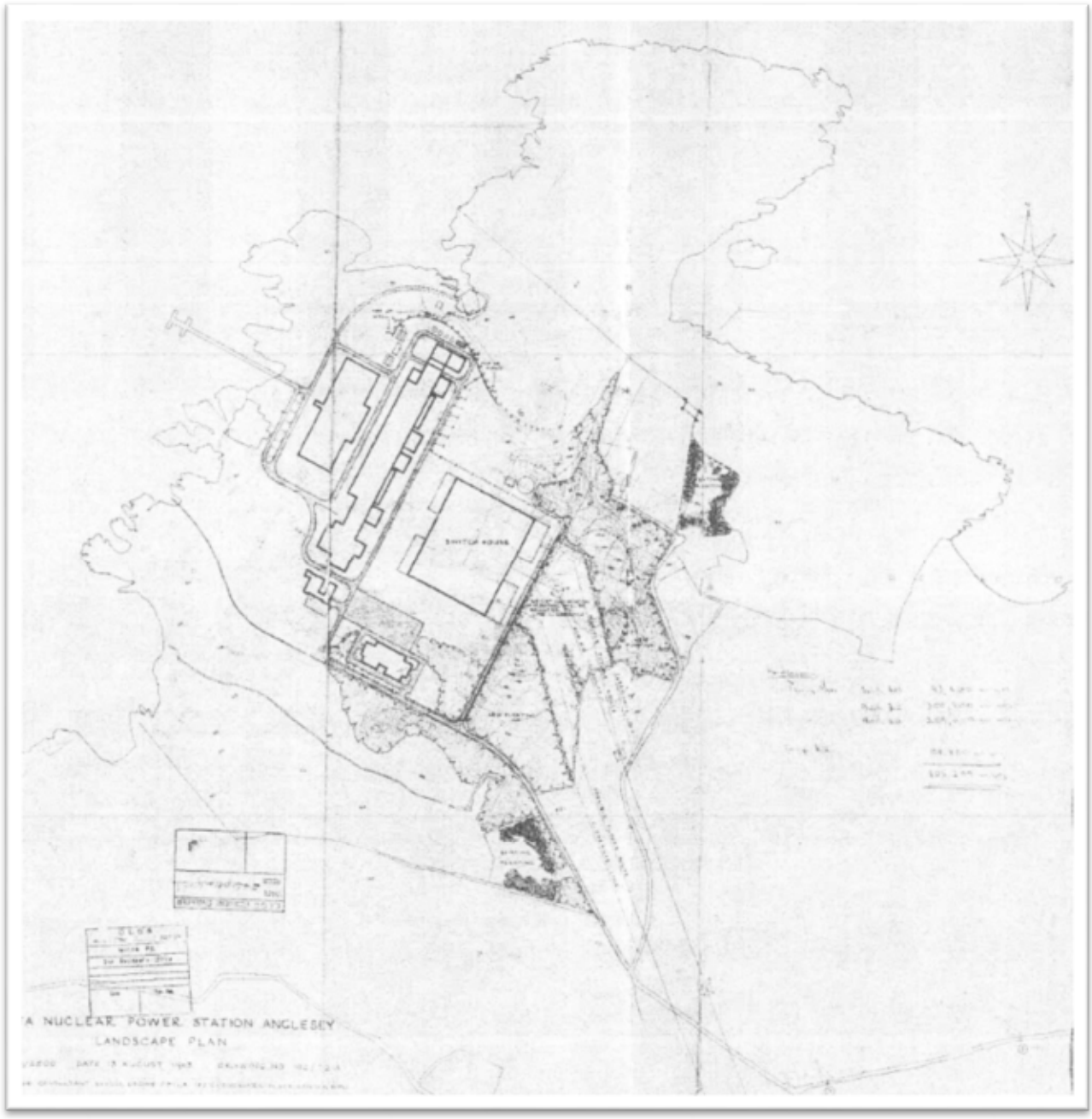


Plate 14. Crowe's landscape plan (Sylvia Crowe and Associates, 1966).

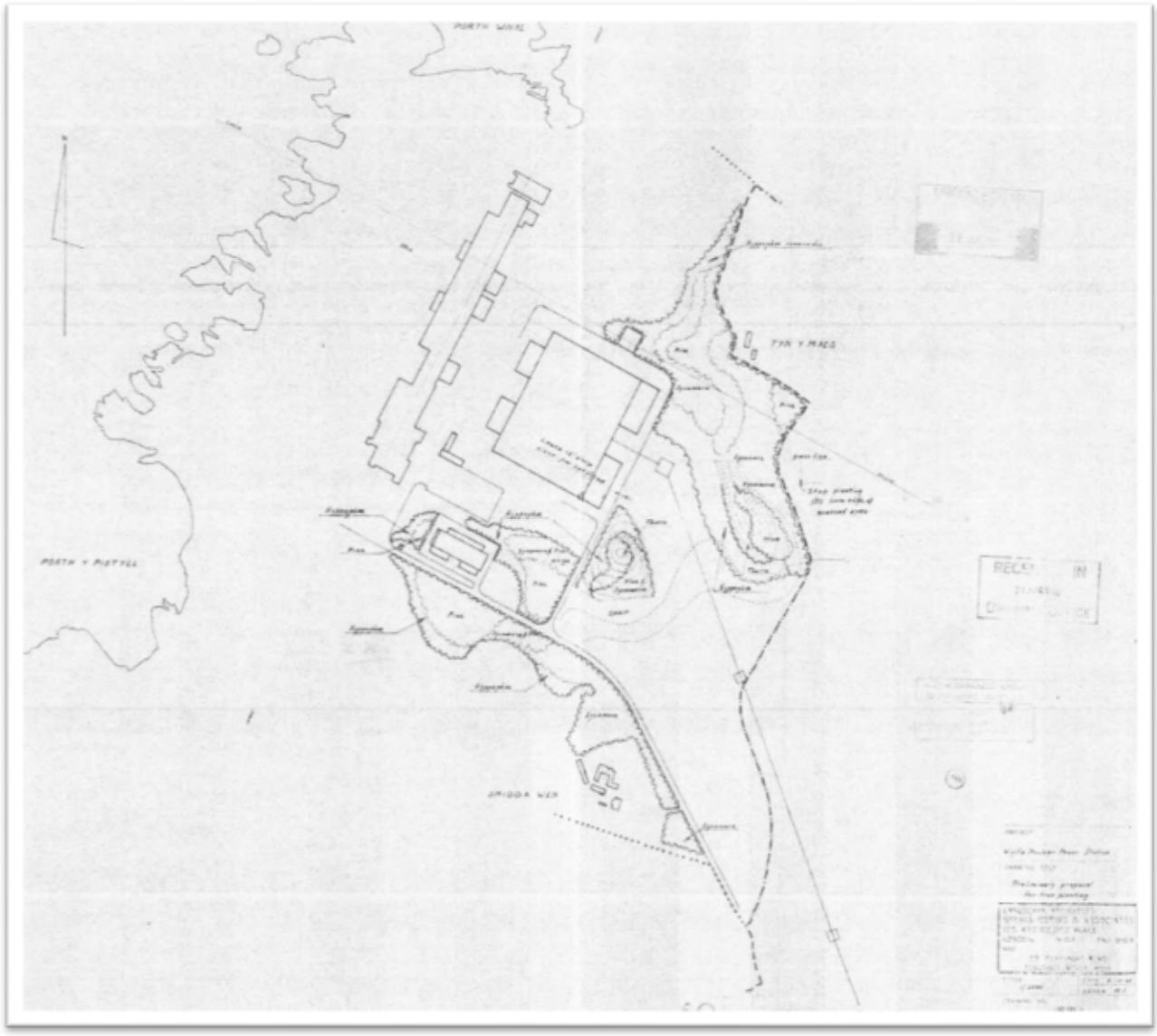


Plate 15. Crowe's preliminary proposal for tree planting. 1966. (Sylvia Crowe and Associates, 1966).

5.6 Footpaths and viewing platform

In her landscape report for CEGB, Crowe considered public use and access and acknowledged the nearby Wylfa Head as an important and frequented viewpoint. She suggested that the coastal footpath to Wylfa Head from Cemaes should be linked to the existing path at Porth-y-pistyll.

The existing landscape at Wylfa Head has some recreational value with several signposted grassy paths (including Wales Coast Path and a nature trail) criss-crossing the slopes of variable gradients, while offering a journey from the dense woodland to more open areas with occasional glimpses of surrounding parts of Anglesey or a pylon rising above the scrub (plate 16).

Plate 16. Views from the nature trail. May 2016.

Just before the viewpoint is reached the rough trail turns into slate steps. The circular viewing platform at the top of the northern hill offers a place to rest and a vantage point from which to look out over the Existing Power Station and out to sea (plate 17).

Plate 17. View north-west from the viewing platform. May 2016.

6. Discussion of assessment of significance

As outlined in section 2.2, Cadw (2011, 38) identifies evidential, historic, aesthetic and communal values of a heritage asset as the constituents of its overall heritage significance. The discussion below considers how each of these values relate to Dame Sylvia Crowe's designed landscape at Wylfa.

As a physical realisation of Dame Sylvia Crowe's design, the landscape at Wylfa forms part of the corpus of information that includes other primary and secondary evidence relating to its design, creation and subsequent history. This body of evidence can be seen to hold informative value and future research potential. However, for the purposes of a heritage significance assessment the role of the designed landscape as a heritage asset and its evidential value have a more specific definition. Therefore, for the purposes of this assessment, the **evidential value** of the designed landscape at the Existing Power Station derives from the physical survival of Crowe's layout, landscaping and planting which sought to minimise the imposition of the large power station on the surrounding landscape. The landscape implements many of the ideas put forward in her publication *Landscapes of Power,* through use of elements such as hills and massed tree planting to link the building and landscape, and survives substantially complete. The design of the landscape over 50 years ago adds to its value, as it demonstrates the function fulfilled by the now mature tree planting. A comprehensive collection of documentary evidence, comprising landscape reports and drawings, reveals the development of proposals for the site, and, when compared with the physical landscape, evidence changes to these proposals when implemented. The history and development of the designed landscape is well documented and therefore the. evidential value of the designed landscape at the Existing Power Station has been assessed to be medium.

The **historic value** of the landscape results from its connection with Dame Sylvia Crowe, one of the outstanding British landscape architects of the 20th century and a pioneer in the field of large-scale energy infrastructure planning. Crowe's comprehensive approach to landscape design is reflected at the Existing Power Station in the influence she exerted over the design of the power station as a whole, collaborating closely with the architects to influence the buildings' massing and colour scheme, helping to fit them into the landscape at the same time as making a bold statement about the 'cosmic' potential of nuclear energy. The inclusion of a viewing platform on one of the artificial hills offering vistas towards the Existing Power Station and the rugged coastline along Wylfa Head reflects the 'Brave New World' optimism associated with nuclear power generation at the time, encouraging the public to visit and enjoy the site.

Crowe provided landscape designs for nuclear power stations at Bradwell in Essex, and, most notably, Trawsfynydd power station in Snowdonia, now designated as a Grade II* Registered Historic Park and Garden. Working closely with the renowned architect Basil Spence, at Trawsfynydd, Crowe employed many of the design elements which were later applied at the Existing Power Station. For example, large areas of planting concealing unattractive elements of the complex using screening, and establishing a relationship between the power station and the wider landscape (Design Commission for Wales 2015). On the basis of the association with Dame Sylvia Crowe the historic value of the designed landscape has been assessed to be high.

In terms of **aesthetic value,** the artificial hills and dense planting mask the substation in views from multiple locations on Anglesey, as shown in photographs in appendix A. The naturalistic design of the hill contours and the mixed woodland planting enables the successful integration of the substation into its setting. The designed landscape blends in with its surrounding context, such that it could be mistaken for a natural feature by a lay person in views from the east or west of the site (see photographs in appendix A). This might please Crowe who reportedly took it as a measure of her success if the public, unaware of her designs, assumed *"it was all natural"* (Taylor, 2001).

The tree-planting design achieves a naturalistic appearance of mixed woodland (despite a substantial coniferous content out of character with the surrounding landscape) when seen from most nearby areas, although perhaps not from the access road directly to the south of the mounds. In addition, the choice of tree species, and particularly the use of pine, reflects the species composition of the nearby Cestyll Garden and aids its integration into the landscape. Similarly, the landform design successfully mimics some of the few more prominent hills on Anglesey, disguising its man-made origins and flowing with the rhythm of the surrounding landscape. Through a combination of these design decisions, and a colour scheme inspired by the colour of the sky and sea, the substation is invisible from most locations on Anglesey. Where visible it appears light, its form

broken up by the shape of the hills and associated tree line, and its perceived size reduced by the skilful contour design and use of mass tree planting.

However, the original planting scheme of Dame Sylvia Crowe's landscape design was not fully realised and the lack of effective management over the years also means that the woodland is in decline. Furthermore, as successful as the designed landscape is at contouring the substantial brutalist power station structures from the views of the surrounding area, its role remains one of camouflage and utility. LANDMAP recognises this in giving the area a low visual and sensory rating. In consideration of this the overall aesthetic value of the site has been assessed to be medium.

The designed landscape at the Existing Power Station derives **communal value** from the former role of the adjacent Existing Power Station as one of the larger employers on Anglesey and in north Wales from the 1960s. As part of the Existing Power Station, the designed landscape is likely to feature in the collective experience and memory of the local population. In addition, communal value derives from the presence of publicly accessible footpaths, including the Wales Coastal Path doubling up as Wylfa Nature Trail, with numbered points of interest along the route and the viewpoint looking out towards Wylfa Head. On this basis, the communal value of the designed landscape has been assessed to be medium.

7. Statement of significance

The landscape surrounding the Existing Power Station was designed in the 1960s by Dame Sylvia Crowe.

The designed landscape has been assessed to be of medium significance based on the following:

- its connection with Dame Sylvia Crowe, a pioneering, award-winning landscape architect who worked internationally and was instrumental in the founding of Landscape Institute, and who provided landscape schemes for two notable nuclear power stations in Wales;
- its value as evidence of the development and practice of landscape architecture in the post war period;
- its connection with the Existing Power Station and its unique and bold architecture;
- representing an expression of a bygone era of positive and hopeful attitudes towards large industrial and nuclear developments;
- being an example of good landscape design performing multiple functions; and
- its communal value resulting from its association with the Existing Power Station, which has been an important employer in Anglesey since the 1970s, and the presence of public footpaths, including the Wales Coastal Path, as an integral part of the design.

this page is intentionally blank for double-sided printing

8. References

Cadw. 2011. *Conservation Principles for the Sustainable Management of the Historic Environment in Wales.* [Online]. [Accessed: May 2016]. Available from: http://cadw.gov.wales/historicenvironment/conservation/conservationprinciples/?lang=en.

Campbell, D. 1999. *Forestry*. In: G. Collens and W. Powell (eds.). *Sylvia Crowe (LDT Monograph).* Reigate, England: Landscape Design Trust. pp.69–108.

Collens, G. and W. Powell (eds.). 1999. *Sylvia Crowe (LDT Monograph).* Reigate, England: Landscape Design Trust.

Crowe, S. 1958a. *Garden design*. London: Country Life.

Crowe, S. 1958b. *The Landscape of Power*. London: Architectural Press.

Crowe, S. 1962. *Wylfa Nuclear Power Station – Landscape Report No. 2*. CEGB. Unpublished.

Crowe, S. 1999. *The Early Years*. In: G. Collens and W. Powell (eds.). *Sylvia Crowe (LDT Monograph).* Reigate, England: Landscape Design Trust. pp.13–20.

Davidson, A. 2009. *Wylfa: Anglesey: Archaeological Assessment.* GAT report 842. [Online]. [Accessed: May 2016]. Available from: http://www.herwales.co.uk/her/groups/GAT/media/GAT_Reports/GATreport_842_compressed.pdf.

Design Commission for Wales. 2015. *Landmarks Publication*. [Online]. [Accessed: May 2016]. Available from: http://dcfw.org/landmarks-publication/.

Grove-White, H. 2015. *The Landscape of Power*. In: Design Commission for Wales. *Landmarks Publication*. [Online]. [Accessed: May 2016]. Available from: http://dcfw.org/landmarks-publication/.

Landscape Institute. 2011. *Advice Note: Photography and Photomontage in Landscape and Visual Impact Assessment*. [Online]. [Accessed: May 2016]. Available from: http://www.landscapeinstitute.org/PDF/Contribute/LIPhotographyAdviceNote01-11.pdf.

Layfield, F. 1999. *Preface*. In: G. Collens and W. Powell (eds.). *Sylvia Crowe (LDT Monograph).* Reigate, England: Landscape Design Trust. pp.7–8

Natural Resources Wales. Various Dates. *LANDMAP*. [online] [Accessed: May 2016] Available from: http://landmap-maps.naturalresources.wales/.

Natural Resources Wales. 2016. *LANDMAP Guidance Note 4: LANDMAP and the Cultural Landscape*. [Online] [Accessed: May 2016] Available from: https://naturalresources.wales/media/677880/landmap-guidance-note-4-landmap-and-the-cultural-landscape-2016.pdf.

Purdy, I. 1999. *The Landscape of Power*. In: G. Collens and W. Powell (eds.). *Sylvia Crowe (LDT Monograph).* Reigate, England: Landscape Design Trust. pp.121–132.

Spence, A. 2015. *Introduction*. In: Design Commission for Wales. *Landmarks Publication*. [Online]. [Accessed: May 2016]. Available from: http://dcfw.org/landmarks-publication/.

Sylvia Crowe and Associates. 1966. *Wylfa Nuclear Power Station, Anglesey*. Design drawings held by Horizon Nuclear Power.

TACP and Isle of Anglesey County Council. 2011. *Isle of Anglesey County Council Landscape Strategy*. [Online]. [Accessed: May 2016]. Available from: http://www.anglesey.gov.uk/Journals/2013/05/08/s/r/x/Anglesey-Landscape-Strategy-Update-2011.pdf.

Taylor, K. 2001. *Sylvia Crowe: Innovator and Exemplar*. Landscape Review 2001:7(1) pp.43–46.

Turner, T. 2016. *Garden Visit: Crowe, Sylvia*. [Online]. [Accessed: May 2016]. Available from: http://www.gardenvisit.com/biography/dame_sylvia_crowe.

Welsh Government. 2015. *Proposed Technical Advice Note 24: Historic Environment*. [Online] [Accessed: May 2017] Available from: https://consultations.gov.wales/sites/default/files/consultation_doc_files/160711-draft-technical-advice-note-24-en.pdf

Figures

FIGURE 1

Legend

Dame Sylvia Crowe's Designed Landscape

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	MAY 17	Initial Issue	AD	SH	JD	RB

Client

HORIZON NUCLEAR POWER

Project

WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT

Drawing Title

DAME SYLVIA CROWE'S DESIGNED LANDSCAPE
AT THE EXISTING POWER STATION

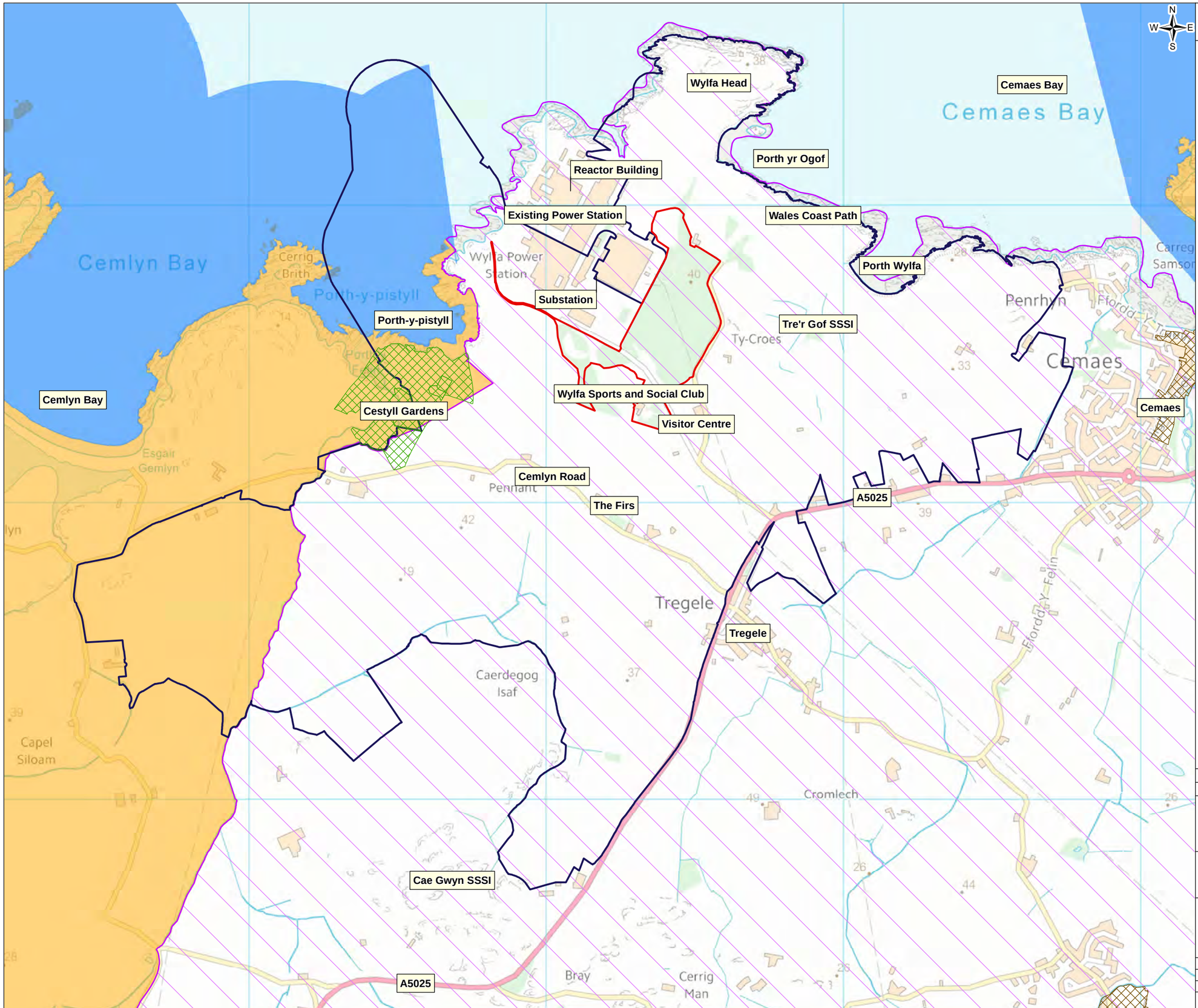
Scale @ A3	1:5,000	DO NOT SCALE
Jacobs No.	60PO8077	
Client No.		

Drawing No.

60PO8077_DCO_APP_DSC_01

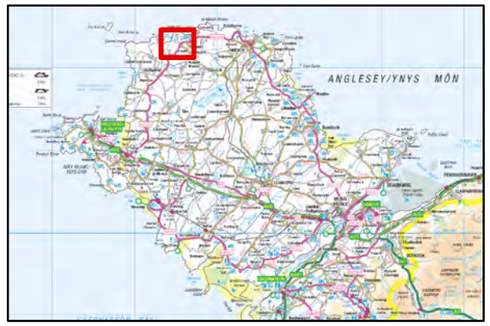
0 50 100 200 300 400 500 metres

FIGURE 2



Legend

- Wylfa Newydd Development Area
- Dame Sylvia Crowe's Designed Landscape
- Grade II Registered Park and Garden
- Conservation Area
- Special Landscape Area
- Heritage Coast
- Area of Outstanding Natural Beauty



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	MAY 17	Initial Issue	AD	SH	JD	RB

Client: HORIZON NUCLEAR POWER

Project: WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT

Drawing Title: DESIGNATED LANDSCAPES

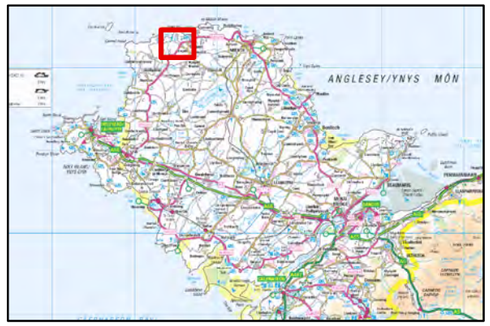
Scale @ A3	1:12,500	DO NOT SCALE
Jacobs No.	60PO8077	
Client No.		

Drawing No.: 60PO8077_DCO_APP_DSC_02

FIGURE 3

Legend

- Wylfa Newydd Development Area
- Dame Sylvia Crowe's Designed Landscape
- Public Right of Way
- Wales Coast Path
- National Cycle Network Route 556



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	MAY 17	Initial Issue	AD	SH	JD	RB

Client: HORIZON NUCLEAR POWER

Project: WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT

Drawing Title: LOCAL LANDSCAPE CONTEXT

Scale @ A3	1:12,500	DO NOT SCALE
Jacobs No.	60PO8077	
Client No.		

Drawing No. 60PO8077_DCO_APP_DSC_03

0 50 100 200 300 400 500 metres

Appendix A. **Photographic Survey**

Site survey work has been undertaken to gather information on the characteristics and significance of Crowe's landscape including the analysis of views towards and within the designed landscape.

Photography locations have been chosen to show representative views from a range of receptors and publicly accessible locations in north Anglesey, as shown on figure 1. A series of photographs from these locations, including some of those identified by Crowe in her 1962 report for CEGB, is provided below. The views from the north, east, south and west illustrate the visibility and extent of Crowe's landscape as well as the way it fits in the surrounding context and provides screening for the substation, which adds to its aesthetic value. The views from within Crowe's landscape provide an illustration of the design and testify to the site's evidential, aesthetic and community value.

Plate number	Section name	Plate title
1	Views from the north	View from Wylfa Head. May 2016
2	Views from the north	View from Wylfa Head. May 2016
3	Views from the north	View from Wylfa Head. May 2016
4	Views from the north-east	View from Wales Coast Path west of Cemaes. May 2016
5	Views from the north-east	View from Wales Coast Path south of Wylfa Head. May 2016
6	Views from the north-east	View from the track near Wales Coast Path south of Wylfa Head. May 2016
7	Views from the east	View from minor road to Llanbadrig Church. May 2016
8	Views from the east	View from Wales Coast Path east of Cemaes Bay. May 2016
9	Views from the east	View from Public Rights of Way west of Cemaes. May 2016
10	Views from the east and south	View from A5025 east of Cemaes. May 2016
11	Views from the east and south	View from A5025 south-east of Tregele. May 2016
12	Views from the east and south	View from A5025 just north of Tregele. May 2016
13	Views from the west	View from west of Cemlyn Bay. May 2016
14	Views from the west	View from National Cycle Route 566 east of Cemlyn Bay. May 2016
15	Views from the west	View from National Cycle Route 566 south-east of Cestyll Garden. May 2016
16	Views from the south-west	View from A5025 north-east of Llanrhuddlad. May 2016
17	Views from the south-west	View from A5025 south of Tregele. May 2016
18	Views from the south-west	View from National Cycle Route 566 south-east of Cestyll Garden. May 2016
19	Views from locations near the Existing Power Station	View from Public Rights of Way south-east of Existing Power Station. May 2016
20	Views from locations near the Existing Power Station	View from minor road south of Wylfa visitor centre. May 2016
21	Views from locations near the Existing Power Station	View from minor road by Wylfa Visitor Centre. May 2016
22	Views from locations near the Existing Power Station	View from Wales Coast Path south of Existing Power Station. May 2016
23	Views from within the designed landscape	On Crowe's mounds. May 2016
24	Views from within the designed landscape	On Crowe's mounds. May 2016
25	Views from within the designed landscape	On Crowe's mounds. May 2016

Plate number	Section name	Plate title
26	Views from within the designed landscape	On Crowe's mounds - under the pylon next to the substation. May 2016
27	Views from within the designed landscape	On Crowe's mounds. May 2016
28	Views from within the designed landscape	On Crowe's mounds. May 2016
29	Views from within the designed landscape	On Crowe's mounds - view south from the viewing platform. May 2016
30	Views from within the designed landscape	On Crowe's mounds - view south-east from the viewing platform. May 2016
31	Views from within the designed landscape	On Crowe's mounds - view west from the viewing platform. May 2016

Views from the north

Plate 1. View from Wylfa Head. May 2016

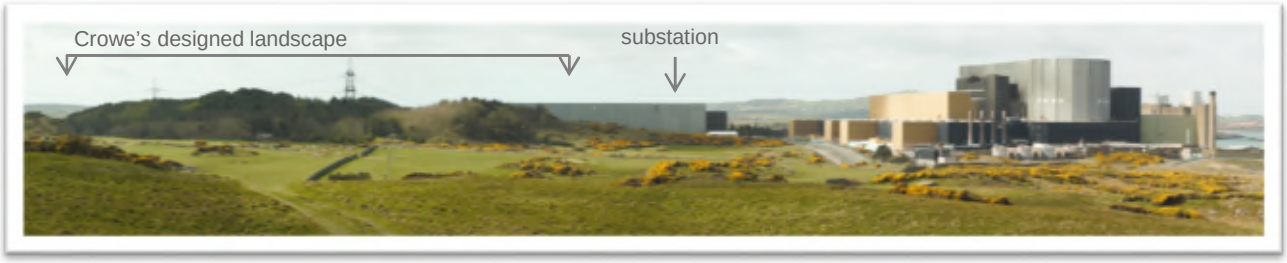


Plate 2. View from Wylfa Head. May 2016

Plate 3. View from Wylfa Head. May 2016

Views from the north-east

Plate 4. View from Wales Coast Path west of Cemaes. May 2016

Plate 5. View from Wales Coast Path south of Wylfa Head. May 2016

Plate 6. View from the track near Wales Coast Path south of Wylfa Head. May 2016

Views from the east

Plate 7. View from minor road to Llanladrig Church. May 2016

Plate 8. View from Wales Coast Path east of Cemaes Bay. May 2016

Plate 9. View from Public Right of Way west of Cemaes. May 2016

Views from the east and south

Plate 10. View from A5025 east of Cemaes. May 2016

Plate 11. View from A5025 south-east of Tregele. May 2016

Plate 12. View from A5025 just north of Tregele. May 2016

Views from the west

Plate 13. View from west of Cemlyn Bay. May 2016

Plate 14. View from National Cycle Route 566 east of Cemlyn Bay. May 2016

Plate 15. View from National Cycle Route 566 south-east of Cestyll Garden. May 2016

Views from the south-west

Plate 16. View from A5025 north-east of Llanrhuddlad. May 2016

Plate 17. View from A5025 south of Tregele. May 2016

Plate 18. View from National Cycle Route 566 south-east of Cestyll Garden. May 2016

Views from locations near the Existing Power Station

Plate 19. View from Public Right of Way south-east of Existing Power Station. May 2016

Plate 20. View from minor road south of Wylfa Visitor Centre. May 2016

Plate 21. View from minor road by Wylfa Visitor Centre. May 2016

Plate 22. View from Wales Coast Path south of Existing Power Station. May 2016

Views from within the designed landscape

Plate 23. On Crowe's mounds. May 2016

Plate 24. On Crowe's mounds. May 2016

Plate 25. On Crowe's mounds. May 2016

Plate 26. On Crowe's mounds - under the pylon next to the substation. May 2016

Plate 27. On Crowe's mounds. May 2016

Plate 28. On Crowe's mounds. May 2016

Plate 29. On Crowe's mounds - view south from the viewing platform. May 2016

Plate 30. On Crowe's mounds - view south-east from the viewing platform. May 2016

Plate 31. On Crowe's mounds - view west from the viewing platform. May 2016

FIGURE 1

Legend

- Dame Sylvia Crowe's Designed Landscape
- Photo Locations
- Public Right of Way
- Wales Coast Path
- National Cycle Network Route 556

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	MAY 17	Initial Issue	AD	SH	JD	RB

Client

HORIZON NUCLEAR POWER

Project

WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT

Drawing Title

APPENDIX A - FIGURE 1
PHOTOGRAPHY LOCATIONS

Scale @ A3	1:25,000	DO NOT SCALE
Jacobs No.	60PO8077	
Client No.		

Drawing No.

60PO8077_DCO_APP_DSC_A_01

0 125 250 500 750 1,000 1,250 metres