The Abergelli Power Gas Fired Generating Station Order

7.3 Index of Photographs

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

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Appendix 11.4 Visually Verified Montages and Methodology

A.1 Visually Verified Montages Methodology

1.1.1 This section has been prepared by AECOM to explain the methodology used for the production of the Visually Verified Montages (VVMs) for the Project.

1.1.2 The purpose of a VVM is to present an accurate visualisation of the Project, enabling its impact on the skyline, surrounding area and setting to be objectively evaluated. This methodology complies with the current photography and photomontage advice note, which can be found here:

- http://www.landscapeinstitute.org/PDF/Contribute/LIPhotographyAdviceNote01-11.pdf

1.1.3 Photographs and VVMs often form an important part of planning applications and Environmental Statements, in which the preparation and presentation of reliable visual information is integral to the assessment of landscape and visual effects. Photographs and VVMs are technical documents in this context, and should be produced and used in a technically appropriate manner.

a) Objectives

1.1.4 The overall aim of a VVM is to represent both the landscape context under consideration and the proposed development, as accurately as is practical.

1.1.5 The objective of a VVM is to simulate the likely visual changes that would result from a proposed development, and to produce printed images of a size and resolution sufficient to match the perspective in the same view in the field.

1.1.6 VVMs use photographs of an actual scene modified by the insertion of an accurate representation of the visible changes brought about by the Proposed Development. They are subject to the same inherent limitations as photographs, for example only showing the scene as it would appear under the same conditions that prevailed when the original photograph was captured. A properly constructed VVM can serve as a useful tool to illustrate the likely visual change that would result from a proposed development

b) Photography

i. Digital Photography

1.1.7 Changes in all aspects of photography and VVMs have taken place over the last ten years. 35mm colour film and the associated cameras and lenses have been almost completely supplanted by digital cameras; digital image processing is now a fundamental element of photography, both within the firmware of the camera and as a subsequent operation on a computer.

1.1.8 Printing has similarly become wholly digital, using a wide variety of devices offering different qualities of output. Future changes will undoubtedly further change the parameters for landscape photography. A good quality camera and lens are essential to the production of photographs and VVMs for landscape and visual impact assessment work.

ii. Digital Camera & Lenses

1.1.9 High resolution digital photography was captured with a Canon EOS 5D Mk III, a full-frame digital camera using a variety of fixed focal-length lenses to accommodate the necessary scope of the Development and relevant context. The camera was fixed to a tripod 1.5m above ground.

iii. Data capture

1.1.10 The photographer was provided with location information indicating the position of each viewpoint from which the required photographs were to be taken, plus a digital photograph of the desired view. For each photograph, the camera was positioned at a height of 1.5m above the ground level to approximate the human eye level. OS Location of the camera position was captured, as well as the focal length, date, time, weather and lighting conditions of the photograph. A variety of control points within the view were also accurately surveyed, in order to allow the 3D data to be camera matched or keyed into each photograph.

c) Image Processing

i. File conversion

1.1.11 The camera outputs a ‘raw’ file format, which was processed digitally to ensure colour accuracy. The final image was then outputted as a standard compressed file-type (JPG).

ii. Image correction

1.1.12 The compressed photographs were processed and stitched using the package Hugin, which provides a suite of advanced features and libraries for re-projecting and blending multiple source images into panoramics with exposure, vignetting and white balance correction. Despite the advances in digital photography over the last 10 years, the circular nature of lenses results in a small amount of distortion on the perimeter of images. Due to this, the very outer edges of an image are often not taken into consideration to minimise the risk of inaccuracy.

d) 3D model

i. 3D model creation

1.1.13 A three-dimensional computer model of the development and the various assessment features was supplied by WSP, in house GIS teams and other designers.

ii. Scale, height & position check

1.1.14 Once received, the model was positioned using Architectural general arrangement drawings, OS site plans and surveyed level information. The surveyed control points were then brought into the model, in an easily visible contrasting colour. Virtual cameras of matching specifications to the recorded camera and lens used for each view were then placed within the scene at the correct surveyed location. The virtual 3D camera was then rotated to the correct position using the captured photography as a backplate.

e) Rendering

i. Sunlight & daylight

1.1.15 The VRaySun and VRaySky are special features within our rendering software which are provided as part of the Chaosgroup Vray renderer, utilised by AECOM. Developed to work together, the VRaySun and VRaySky reproduce the real-life Sun and Sky environment of the Earth. Both are programed so that they change their appearance depending on a number of factors, such as the direction of the VRaySun; which was dynamically linked and geo-referenced to the real world position of the site, the time, day and month. Different sky options were also chosen (clear, overcast, etc.) to match the digital photography.

1.1.16 Using this lighting system, alongside the physically accurate material properties, the software calculated the effects of the sun and sky conditions on the appearance of the proposed scheme, maximising fidelity of the illustrated structures.

f) Post production

i. Post production

1.1.17 Once the rendering stage was complete, the images were brought into Adobe Photoshop to superimpose the proposed development onto the digital images of the site. The foreground details such as trees, buildings or signage were then overlaid as masks; ensuring the depth of the various items was represented correctly. If required, the rendered image was then further edited to accurately match the colour, saturation and environmental effects shown in the photograph. This is a qualitative or subjective process, but effort is made to ensure it provides objectively accurate views of the Development as proposed.

g) Review

i. Review

1.1.18 A final qualitative check of all of the AVRs was carried out with other members of the project team to ensure that they provided objectively accurate views of the Project from the information provided.

A.2 Table 1: VVM Viewpoint Information

Viewpoint No.	Viewpoint Name	Easting	Northing	Elevation	Distance to Stack (km)
1	North side of J64 of M4, on B4489	264903.57	199456.46	82.25 m	1.95
2	Fforest-newydd	263926.24	201366.08	107.38 m	1.61
3	Gower Way, Felindre	264164.92	202975.05	117.79 m	2.16
4	Llwyngwenno, Heol Glyn-Dyfal	263713.69	203508.13	162.98 m	2.86
5	Mynydd Pysgodlyn	263515.23	204260.20	234.74 m	3.58
6	Tor Clawdd, adjacent to Ring Cairn	267025.48	206300.56	309.40 m	5.22
7	Tor Clawdd, southern end	267111.55	204576.74	259.41 m	3.64
8	Rhyd-y-pandy road near Cynghordy	266079.85	203076.56	157.61 m	1.85
9	Public Right of Way, north of Aber-gelli fach	265289.87	202233.17	141.49 m	0.96
10	Trig Point, Mynydd Gelliwastad	267799.67	201456.50	212.89 m	2.28
11	Llangyfelach Churchyard	264667.81	198972.21	104.63 m	2.49
12	Carnglas	261771.15	194480.84	143.48 m	7.79
13	Three Crosses	257580.52	194915.11	129.59 m	10.2
14	Public Right of Way near Maes-eglwys Farm	265348.65	200565.45	74.48 m	0.76
15	Public Right of Way and minor road	265734.84	200069.07	91.36 m	1.25
16	Dorglwyd	265943.79	200652.58	92.16 m	0.77
17	Cefn Betingau Farm	265986.97	201509.92	108.78 m	0.50
18	Footpath on the north side of the A48 Clasemont Road	265591.10	198863.65	110.81 m	2.44
19	Fairwood Common on the boundary of the Gower AONB, adjacent to the B4271	257939.00	192692.00	212.89 m	11.45