

5 LANDSCAPE AND VISUAL CHARACTER

5.1 Introduction

5.1.1 This landscape and visual chapter is an updated version that is submitted in respect of appeal reference CAS-02641-G8G7M5 in September 2024. It addresses the comments made by PEDW in its *ES Completeness Report* issued in June 2023. The updates in relation to landscape and visual matters are:

- The assessment of construction effects has been reviewed and updated as necessary in light of any updates to the baseline and EIA guidelines;
- The cumulative effects assessment in relation to landscape and visual matters has been updated to consider the current position; and
- Additional winter photography from representative viewpoints has been provided.

5.1.2 This chapter of the ES presents the results of the Environmental Impact Assessment (EIA) for the potential landscape and visual impacts that would result from the development proposal.

5.1.3 It is intended that the ES will provide statutory and non-statutory consultees with sufficient information to determine the potential significant impacts of the development proposal on the receiving environment and will inform the issue of appropriate planning consent by the local authorities. It will also inform any consent conditions.

5.1.4 In particular, this ES chapter:

- Presents the existing environmental baseline established from desk studies, and consultation;
- Presents the potential environmental effects of the landscape and visual impacts arising from the development proposal, based on the information gathered and the analysis and assessments undertaken;
- Presents the potential environmental effects on the visual amenity of the study area and from the selected viewpoints including changes to the composition of views and the perception and response by receptor groups to these changes;
- Identifies any assumptions and limitations encountered in compiling the environmental information; and
- Highlights any necessary monitoring and/or mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

5.1.5 The site, hereafter referred to in this report as the ‘application site’, is centred on National Grid Reference (NGR) ST 307787 (E), 167506 (N) approximately 1.6km to the northwest of Barry, approximately 1.2km to the north-east of Rhoose and approximately 0.7km east of Tredogan. It lies with the administrative boundary of the Vale of Glamorgan Council (VoGC). Cardiff Airport lies adjacent and immediately to the west. Cardiff is approximately 12 km to the north-east of the application site.

5.1.6 A plan showing the location of the application site and its context are shown in the Site Location Plan in **Figure 5.1**.

5.1.7 This report considers the effects on:

- Landscape elements and features;
- Landscape character; and

- Visual amenity.

5.1.8 A detailed methodology is provided in **Appendix 5.1**.

5.1.9 This chapter provides an overview of the application site within the landscape and visual context of the surrounding area and sets out the planning context of the application site with reference to landscape issues. The existing baseline landscape features and landscape character, which together make up the landscape resource, are described and reference is made to published landscape character studies and any relevant landscape designations. The current visibility of the application site from selected representative viewpoints in the surrounding landscape is also assessed.

5.1.10 A description of the development proposal is provided and the potential effects on the landscape resource and the visual environment are identified. Mitigation measures, which form an integral part of the development proposal, are also described together with how these measures are likely to prevent, reduce or offset any perceived adverse effects. The Indicative Concept Masterplan provided at **Figure 2.6** provides further detail of mitigation.

5.1.11 Landscape effects refer to changes arising from the development proposal on the physical elements that make up the landscape and which influence its character. These, together, form the landscape resource. Visual effects refer to the changes to existing views available from representative Viewpoints within the landscape surrounding the application site.

5.1.12 An assessment has been made of the effects of the development proposal on the visual environment during the first winter following completion of the development (Year 1) and for the summer 10 years after completion of the development (Year 10).

Consultation

5.1.13 The Landscape and Visual Assessment (LVA) and this chapter has been prepared in consultation with the Landscape Officer at the Vale of Glamorgan Council, within which the application site lies.

5.2 Methodology and Assessment Criteria

Relevant Guidance

5.2.1 This chapter has been prepared with regard to best practice as described in the documents below:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition Landscape Institute and the Institute of Environmental Management and Assessment GLVIA3, (2013);
- GLVIA3 Statement of Clarification 1/13;
- An Approach to Landscape Character Assessment, Natural England (2014);
- Photography and Photomontage in Landscape and Visual Impact Assessment Advice Note 01/11, Landscape Institute (2011); and
- Planning Policy Wales LANDMAP Guidance Note 1: LANDMAP and Special Landscape Areas (2016) and
- Planning Policy Wales LANDMAP Guidance Note 3: (2013).

5.2.2 The Guidelines for Landscape and Visual Impact Assessment (GLVIA3) are broad guidelines rather than detailed prescriptive methodologies. The methodologies tailored for the assessment of the development proposal are based on GLVIA3 guidance and are presented in detail at **Appendix 5.1** and summarised below.

5.2.3 Landscape and visual studies provide an analysis of the physical and perceptual attributes of an area. The assessment of landscape issues relates to the potential effect of development on the landscape resource, which encompasses landscape character, quality and distinctive features, including topography, drainage, vegetation and built features, whereas the study of visual constraints is concerned with the potential effect on views and visual amenity.

5.2.4 The analysis of visual constraints includes the identification of important views towards the application site, which are generally from a range of visual receptors, both public (highways and public rights of way) and private (residential properties and places of employment). Visual receptors are of varying sensitivity to change, with views from the ground floors of private residences generally accepted as being more sensitive to change than those from highways or places of work where attention is focussed elsewhere. Public rights of way through rural areas with attractive landscapes, which are used for recreational purposes, are also usually accepted as being of high sensitivity to change.

Landscape Assessment Methodology

5.2.5 The landscape assessment combines the results of both an objective and subjective appraisal of the landscape. This appraisal consisted of three stages including a desk study, a field survey and an analysis of the likely effects resulting from the development proposal in the light of these studies.

5.2.6 The study area for the assessment extends to a radial distance of 5km from the application site boundary. Whilst there may be the potential for effects of the development proposal to extend beyond this limit, it is considered that the visual perception of the development proposal within the landscape is likely diminish with ever increasing distance and the development proposal, where visible, would be seen as an increasingly smaller component of the wider composite view.

List of Figures

- Figure 5.1 Site Location Plan
- Figure 5.2 Landscape Designations
- Figure 5.3 Historic Designations
- Figure 5.4a LANDMAP Geology
- Figure 5.4b LANDMAP Landscape Habitats
- Figure 5.4c LANDMAP Visual & Sensory and Landscape Character Areas
- Figure 5.4d LANDMAP Cultural Landscapes
- Figure 5.4e LANDMAP Historic Landscapes
- Figure 5.5 Zone of Theoretical Visibility (ZTV) and Viewpoints
- Figures 5.6 Viewpoint photography (Summer)
- Figure 5.7 Representative CGI
- Figure 5.8 Viewpoint photography (Winter) (new figure)
- Figure 5.CA 1.1 Cumulative Sites selected for ZTVs (new figure)
- Figure 5.CA 2.1 to 2.5 Cumulative Site ZTVs (new figure)

Desk Study

5.2.7 The desk study involved an examination of 1:25,000 scale Ordnance Survey maps and aerial photographs to establish the general context of the study area. This was followed by an analysis of relevant documentation (reports, development plans, assessments, government guidance etc.) to clarify the landscape and planning context. This was followed by an analysis of relevant documentation (reports, development plans, assessments, government guidance etc.) to clarify the landscape and planning context.

Fieldwork

5.2.8 Fieldwork involved a visual survey of the application site and the surrounding area to assess its character and identify key landscape elements and features. To inform the EIA, site specific surveys were undertaken within the environs of the application site to record the character and identify key landscape features and visual analysis as per the methodology in GLVIA3. A summary of the surveys undertaken to inform the landscape and visual assessment is outlined in Table 5.1 below with the viewpoints visited listed in Table 5.2.

Table 5.1: Summary of site-specific survey data.

Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
Landscape and visual survey	Barry to the east, Llancarfan to the north, Rhoose to the west and shoreline at Porthkerry Park to the south.	Environs and shore-based survey along the long-range Wales coastal path and the local network of public rights of way and public highways relating to the application site.	N/A	03 rd May 2019, 04 th June 2019 and 26 th June 2019.	N/A

Analysis

5.2.9 Based on the findings of the desk study and field survey, distinctive elements in the landscape, the pattern of their arrangement and dominant features were identified and the existing character and quality of the affected landscape described.

5.2.10 An assessment was then made of the degree of change to various landscape components or elements and the overall landscape character that would result from the development proposal and the nature of any potential effects was assessed.

5.2.11 Effects on the landscape can be defined as the relationship between the sensitivity of the landscape receptor and the magnitude of any change which the proposals would create. Effects may be adverse, beneficial or neutral in nature.

Visual Assessment Methodology

5.2.12 An assessment has been undertaken to determine the degree of visual effect of the development proposal upon visual receptors in the surrounding landscape.

Desk Study

5.2.13 In order to help determine the extent of the study area for a landscape and visual assessment, a computer generated Zone of Theoretical Visibility (ZTV) is frequently used. Preparation of a ZTV is recommended in GLVIA3 which states: "it makes clear that the area so defined only shows land from which the proposal may theoretically be visible" (para. 6.8, p.103).

5.2.14 The ZTV Plan (**Figure 5.2**) shows areas from which the development proposal may be visible. The ZTV takes account for the screening effects of existing significant vegetation blocks (modelled at 12m) and built form (modelled at 9m), uses an assumed observer height of 1.5m. Five origin points have been used to represent the parameters of the development proposal. Landform data was taken from OS Terrain 5 mapping, using point data across the application site. The range of proposed building heights (between 8m – 16m) for building plots is listed on **Figure 5.2**.

5.2.15 A 5km radius has been selected for the extent of the study area used for this assessment which is considered to be consistent with GLVIA3 guidelines which refer to a "need for an approach that is in proportion to the scale of the project that is being assessed and the nature of the likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional."

5.2.16 Visual receptors include the public or community at large and residents and visitors to an area. Viewpoints looking towards the development proposal have been selected from varying distances and directions to represent these visual receptors. These include views from the Public Rights of Way (PRoW) and areas of Access Land, highways, places of recreation and other potentially important areas including Scheduled Ancient Monuments.

5.2.17 Ten Representative Viewpoints were put forward to the Landscape Officer at the Council in early June 2019, and a further 12 additional viewpoints were proposed by them for assessment as follows:

- Valeways Millennium Trail (Promoted Route).
- Porthkerry Country Park (Important visitor area).
- Wales Coast Path (Promoted Route) / Porthkerry village (Conservation Area).
- Ceri Road (Open Space and Public Right of Way).
- The Knap (listed park) and promenade (Important visitor area).
- Whitmore Bay: Friars Point (Important visitor area).
- Whitmore Bay: Nells Point (Important visitor area).
- Valeways Millennium Trail Llancarfan (Promoted Route) Register of Outstanding Historic Landscapes in Wales) (SLA).
- Llanbetherby (Conservation Area) (SLA)
- Moulton (Public Right of Way) (SLA)
- Moulton Roman Site (Scheduled Ancient Monument) (SLA)
- Church Hill Wood (Public Right of Way) (SLA)

Fieldwork

5.2.18 The provisional identification of representative Viewpoints was refined by subsequent fieldwork, at which stage visual receptors identified from the desk study together with the viewpoints put forward by the Landscape Officer were visited and either confirmed or omitted. These Viewpoints included those from highways and public rights of way. Existing views from a representative number of these locations were recorded photographically (see **Figure 5.2** for Viewpoint locations).

5.2.19 Baseline photographs were taken at eye level from the representative viewpoints, using a digital SLR camera with an f1.4 50mm fixed focal length lens in 35mm film format in accordance with Landscape Institute guidelines. The representative Viewpoints are shown in **Figures 5.3a – 5.3p** of the ES and a description of each representative Viewpoint has been provided in section 5.8. Four of the viewpoints were selected for representative computer generated images of the development proposal (shown on **Figures 5.4a – 5.4d**). A summary of the viewpoints is shown in Table 5.2 below.

Analysis

5.2.20 The existing views were then compared with those that would result if the development proposal was to be constructed. The comparative changes in the views have been assessed for the winter of the first year following completion of the development proposal and then for the anticipated views of the development proposal in the summer months 10 years after construction.

Limitations of the Landscape and Visual Assessments

5.2.21 The visual assessment has been based on analysis of OS mapping of the application site and the surrounding area and on a field survey of views towards the application site from publicly accessible viewpoints in the surrounding landscape. Although every effort has been made to include viewpoints in sensitive locations and locations from which the development would be most visible, not all public viewpoints from which the development would be seen have necessarily been included in the assessment.

5.2.22 The visual assessment and associated field work has been carried out during late Spring/early Summer 2019 with near full foliage on deciduous trees and hedgerows. Views towards the development proposal may increase during the winter months with the absence of foliage on trees and hedgerows and conversely decrease during the summer months with trees and hedgerows in full leaf. Given the timing of the field work, professional judgement has been used to anticipate the likely visibility of the prosed development during the winter months.

5.2.23 With the exception of the application site itself, no access to private land or property was obtained during the course of the assessment.

Table 5.2: Viewpoints.

View Point	View Point Orientation	View Point Description	Selected for Representative Computer Generated Image
VP1	Layby on Porth Road	Looking south west at a distance of 369m from the nearest site boundary at contour 77 AOD.	
VP2	Junction of Porth Road and PRoW P4/17/1	Looking south west at a distance of 153m from the nearest site boundary at contour 73 AOD.	YES
VP2a	Along PRoW P4/17/1	Looking west at a distance of 107m from the nearest site boundary at contour 70 AOD.	
VP3	Junction of Porth Road and Blackton Lane	Looking south east at a distance of 10m from the nearest site boundary at contour 60 AOD.	YES
VP4	Near junction of Port Road and Porthkerry Road	Looking south east at a distance of 100m from the nearest site boundary at contour 60 AOD.	
VP5	View from Porthkerry Road	Looking east at a distance of 5m from the nearest site boundary at contour 60 AOD.	
VP6	Junction of un-named lane and Porthkerry Road	Looking north east at a distance of 200m from the nearest site boundary at contour 60 AOD.	
VP7	Junction of Porthkerry Road and end of runway	Looking north at a distance of 501m from the nearest site boundary at contour 60 AOD.	YES
VP8	Along PRoW P4-20-1 from West Ridge	Looking north west at a distance of 507m from the nearest site boundary at contour 74 AOD.	YES
VP9	Cold Knap Point, Barry	Looking north west at a distance of 2680m from the nearest site boundary at contour 15 AOD.	
VP10	Friars Point, Whitmore Bay, Barry	Looking north west at a distance of 3451m from the nearest site boundary at contour 15 AOD.	
VP11	Wales Coast Path, Neil's Point, Whitmore Bay, Barry	Looking north west at a distance of 3952m from the nearest site boundary at contour 25 AOD.	
VP12	Public Road, Moulton	Looking south at a distance of 2140m from the nearest site boundary at contour 71 AOD.	
VP13	Valeways Millennium Heritage Trail near Llanbetherby	Valeways Millennium Heritage Trail near Llanbetherby	
VP 14	Valeways Millennium Heritage Trail near Font-y-gary	A very brief of glimpse of the new built development may be visible above the airport runway through the airport boundary fencing.	
VP 15	Ceri Road near recreation area	Looking east at a distance of 739m from the nearest site boundary at contour 65 AOD.	

5.3 Baseline Conditions

Landscape Baseline

5.3.1 The aim of the baseline study is to describe the individual components of the physical landscape which are present on-site and within the study area and to provide an understanding of how the landscape's constituent elements including its character, its spatial variation, geographic extent, condition and the way in which the landscape is experienced and the value attached to it may be effected by the development proposal.

5.3.2 The application site is centred on National Grid Reference (NGR) ST 307787 (E), 167506 (N) approximately 1.6km to the northwest of Barry, approximately 1.2km to the north east of Rhoose

and approximately 0.7km east of Tredogan. Cardiff Airport lies adjacent and immediately to the west. Cardiff is approximately 12 km to the north east of the application site.

- 5.3.3 The application site makes up part of the 'Gateway Development Zone' of the 'St Athan – Cardiff Airport Enterprise Zone and is c.87ha. It is located on a gently sloping site which falls from the north east at 70m AOD to between 50 and 55m on the southern boundary of the application site.
- 5.3.4 The application site comprises irregular shaped arable and pasture fields bounded by predominantly low hedgerows with occasional hedgerow trees. There are blocks of small woodland and small wooded valleys of Whitelands Brook and Bullhouse Brook to the south running down to Porthkerry Country Park.
- 5.3.5 The infrastructure of Cardiff Airport dominates the landscape and lies immediately to the west of the application site. A hotel is located at the junction of Porthkerry Road on the western boundary of the application site and Port Road which forms the northern boundary. There are no high voltage overhead power lines on the application site.

Description of Surrounding Area

Landscape Designations

- 5.3.6 The application site does not form part of any statutory landscape designations. There are no nationally designated landscapes within the study area.
- 5.3.7 The application site is situated less than 100m south of the locally designated and non-statutory Nant Llancarfan Special Landscape Area at its closest point in the northeast of the site. Porthkerry Country Park which is also locally designated as a Green Wedge in the LDP forms most of the southern boundary of the application site. A Landscape Designation Plan is provided in **Figure 5.5**.

Settlements and Built Form

- 5.3.8 The nearest settlements to the application site are:
 - Barry (approximately 1.6km to the east);
 - Rhoose (approximately 1.2km to the south west);
 - Tredogan (approximately 0.7km to the north west).
- 5.3.9 Distances are taken from the centre of the application site to the closest edge of the settlement.
- 5.3.10 There are a small number of individual farm complexes and private residences within the surrounding area. These include:
 - Model Farm (within the application site located off port Road);
 - Blackton Farm (approximately 0.8km from the northern boundary of the application site);
 - Welford (immediately north of Port Road on the northern boundary of the application site);
 - Cwm-cidy Farm (0.95km to the east of the application site);
 - Properties associated with Upper and Lower Porthkerry Farm complex including the Old Rectory at Lower Porthkerry (approximately 0.35km from the southern boundary of the application site)

Listed Buildings and Conservation Areas

- 5.3.11 The Conservation Areas within the Study Area are shown in **Figure 5.5**.

- Porthkerry Conservation Area (approximately 0.65km from the southern boundary of the application site).
- Barry Garden Conservation Area (approximately 1.25km from the south east boundary of the application site).
- Rhoose Conservation Area (approximately 1.05km from the western boundary of the application site).
- Penmark Conservation area (approximately 1.7km north west from Port Road on the northern boundary of the application site).
- Llancarfan Conservation area (approximately 3.12km north west from Port Road on the northern boundary of the application site).

5.3.12 Listed Buildings are shown on the Historic Designation Plan in **Figure 5.6**. There are a number of listed buildings in the study area. These are generally located in clusters associated with the Conservation Areas listed above. There are some which fall outside the Conservation Areas and may have potential inter-visibility with the development proposal noted below:

- 4 Grade II listed buildings associated with Cwm-cidy Farm (0.95km to the east of the application site);
- 2 Grade II listed buildings associated with Lower Porthkerry Farm (approximately 0.01km from the south western corner of the application site);
- Grade II listed Porthkerry viaduct (approximately 0.65km from the southern boundary of the application site);
- Grade I Listed Fonmon Castle and associated Grade II listed structures – (approximately 2.7km from the western boundary of the application site);
- 3 Grade II listed buildings in Fonmon approximately 2.6km from the western boundary of the application site);

Scheduled Ancient Monuments (SAMs)

5.3.13 There are a number of SAMs in the study area which may have potential views of the application site. These include:

- The Bulwarks Camp (approximately 0.88km from southern boundary of the application site);
- Site of Medieval Mills and Leat at Cliffwood (approximately 0.48km from southern boundary of the application site);
- Westward Corner Round Barrow (approximately 0.7km from southern boundary of the application site);
- Moulton Roman Site (approximately 1.8km from northern boundary of the application site);
- Penmark Castle (approximately 2km from north west corner / boundary of the application site);
- Castle Ditches near Llancarfan (approximately 2.85km from northern boundary of the application site);
- Walterston ringwork (approximately 3.5km from northern boundary of the application site);
- Highlight Church Remains (approximately 2.4km from the north east corner of the application site);

Public Highways

- 5.3.14 Port Road forms the northern boundary to the application site and joins the A4226 to the east of Model Farm. This trunk road runs east to west connects Barry with St Athan. Port Road runs along the eastern boundary of Cardiff Airport where it meets a minor road to Porthkerry Country Park. Port Road continues west to Rhoose.
- 5.3.15 The A4226 is the major A road in the study area and also runs northwards at the roundabout junction with the B4266 which in turn runs south to Barry.
- 5.3.16 There are local roads off the A4226 which serve the small villages within the study area such as Moulton, Penmark and Llancarfan.

Rail

- 5.3.17 The coastline railway connects Barry with Rhoose and is less than 0.7km away from the application site at its closest point near Porthkerry Viaduct.

Topography

- 5.3.18 The application site is located on gently sloping land 70 to 50m AoD which faces south towards the coast which is less than 1.2km away at its closest point. The surrounding landscape is classified as rolling lowland in the Visual and Sensory Aspect Area with wooded lowland valleys to the south. The east to west valley associated with the River Waycock approximately 0.9km to the north. However, the land generally rises travelling north of the application site to approximately 90m AoD near Whitton Rosser Farm close to the northern boundary of the Study Area. To the north-east of the Study Area the land in the Open Lowland Valleys is generally lower lying than the application site.

Trees, Woodland and Hedgerows

- 5.3.19 The study area is classed predominantly as a 'Mosaic' landscape in the Habitats Aspect Area LANDMAP classification, indicating a mix of woodland arable and pasture farmland.
- 5.3.20 Notable areas of small woodland in the area immediately south of the application site tend to be confined to valley edges and watercourses such as in Bullhouse Brook valley. An area of predominantly mixed woodland is located in Porthkerry Country Park where the railway runs. Fragmented pockets of deciduous woodland are located along the River Waycock Valley and include Churchill Wood.
- 5.3.21 Immediately north of the A4226 but south of the Waycock Valley are two blocks of predominantly deciduous woodland Welford (140m²) and Middleton Woods (220m²). There are small woodland blocks set with farmland scattered throughout the study area.
- 5.3.22 Field boundaries are generally formed from mature hedgerows often with trees. Low hedgerows are locally present on the application site; however, those associated with the A4226 to the north of the application site are generally thicker and taller. Further north the hedgerows are frequently well treed and mature.

Public Rights of Way (PRoW) and Public Access

- 5.3.23 The study area contains numerous PRoW footpaths but very few bridleways. The PRoW footpaths are distributed particularly on its western side associated with Llancarfan and within and around Porthkerry Country Park.
- 5.3.24 The application site has one PRoW footpath P4/17/1 which runs on its eastern side boundary, southwards from Port Road to Lower Porthkerry. There is a Restricted Byway which continues southwards from here to Porthkerry church south of the railway and eventually links with the Wales Coastal Path.

5.3.25 The closest PRoW outside the application boundary are:

- Public footpath P4/14b/1 - running northwards and across the A4226 to Blackton Farm, 295m to the north of the application site at its closest point;
- The closest Public footpath to the application site in Porthkerry Country Park and north of the railway line include B1/28/1, P4/20/1, B1/26/1, all within 1km of the boundary of the application site.
- Cardiff Airport has severed several PRoW, but there are several connecting Rhoose with the Wales Coastal Path, including: P7/2/1, P4/1/2 and P4/3/1 860m, 1.6km and 2.5km away from the application site respectively.
- The Wales Coastal Path follows the coastline to the south of the application site.

5.3.26 There are no areas of Open Access Land within the application site.

Watercourses and Waterbodies

5.3.27 The application site is drained by a number of minor water courses including the Whitelands Brook and the Bullhouse Brook. There are also a number of springs, and a well, located within the application site boundary. These minor watercourses follow the topography of the application site to converge and flow towards the southeast of the study area, and eventually discharge beneath a railway viaduct, located off the south-east corner of the site.

5.3.28 Major watercourses within the study area reflect the topography of the surrounding landscape. The majority of the major watercourses flow southwest towards Llancatal and Burton, before converging on the western edge of the study area and eventually discharging into the Bristol Channel.

5.3.29 The River Waycock (flowing from east to west) passes through the study area at an approximate distance of 860m from the application site. The Moulton Brook flows from east to west through the centre of the study area approximately 2.4km north of the application site. The Ford Brook (flows from east to west) passes to the north of the application site at an approximate distance of 3.0km.

5.3.30 The River Waycock, Ford Brook and the Moulton Brook all eventually discharge into the Nant Llancarfan approximately 3.2km north west of the application site. The Nant Llancarfan aligns to the northwest of the study area, passing through Llancarfan approximately 3.9km north-west of the application site. The Nant Llancarfan flows from north to south, eventually discharging into the Kenson River (located approximately 2.9km west of the application site).

5.3.31 The Kenson River looks to flow from east to west and discharge into the River Thaw. The River Thaw extends along the southwest study area boundary and is located approximately 4.0 km west of the application site. The River Thaw eventually discharges into the Bristol Channel. The edge of the Bristol Channel is noted approximately 682m south of the application site.

5.3.32 The land surrounding the application site to the south contains a numerous drainage ditches, springs and minor watercourses that issue on areas of higher ground and drain into the major river systems.

5.3.33 There are numerous static waterbodies in the study area. Barry Docks are located approximately 2.6km to the east of the application site boundary. A number of ponds appear to have been created as a result of depressions in the landscape created by former quarries. These are located approximately 3.0 km west and south-west of the application site.

5.3.34 A number of small tidal ponds are located towards the southern and south-western extremities of the Bristol Channel shore line (approximately 3.5 km west of the application site). A number

of ponds associated with Goldsland Brook are located approximately 3.0km north east of the application site.

Recreation

- 5.3.35 Porthkerry Country Park is located approximately 540m east of the application site. The Park contains numerous public footpaths and an Ordinary watercourse (Nant Talwg).
- 5.3.36 Cliff Wood (Golden Stairs) is a designated Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI) that is located approximately 0.3km south east of the application site. This SSSI and LNR is connected to the Wales Coast Path via a public footpath. The Wales Coastal Path follows the coastline to the south of the application site.
- 5.3.37 Ffwrn Walters SSSI is located approximately 1.2km north east of the application site and contains a zoological garden and areas of woodland.
- 5.3.38 Barry Island SSSI is also intersected by the Wales Coast Path. Barry Island is located approximately 2.2 km south east of the application site and appears to include a carpark, play facilities and a tourist railway.
- 5.3.39 Fonmon Castle is located approximately 2.6km west of the application site and forms an area of public interest.
- 5.3.40 The East Aberthaw Coast SSSI (located approximately 2.8km south west of the application site) appears to be intersected by the Wales Coast Path.
- 5.3.41 Nant Whitton Woodlands is a designated SSSI and Local Nature reserve located approximately 3.9km north west of the application site. Public footpaths dissect the Nant Whitton Woodlands providing access to the wider site area.

LANDMAP Aspect Areas

- 5.3.42 LANDMAP is the formally adopted methodology for landscape assessment and is advocated by Planning Policy Wales (PPW), is promoted by the Countryside Council for Wales (CCW) and is considered to be a “whole” landscape approach that covers all landscapes, designated and non-designated in Wales.
- 5.3.43 LANDMAP separates each character area into nationally consistent data sets into the following five categories (Aspects):
 - Geological Landscape;
 - Landscape Habitats;
 - Visual and Sensory Landscape;
 - Historic Landscape; and
 - Cultural Landscape.

Each category is provided with an evaluation level as follows:

Evaluation	Definition
Outstanding	Of national importance
High	Of regional or county importance to the aspect
Moderate	Of local importance to the aspect
Low	Of little or no importance to the aspect
Unknown	Insufficient information exists to evaluate the area

Refer to LANDMAP Aspect Area Plans in **Figures 5.7a – 5.7g**.

5.3.44 A summary of each LANDMAP Aspect Area and description covering the site are provided in Table 5.3 below:

Table 5.3 LANDMAP Aspect Areas

Aspect type	Area ID	Area name	Classification	Evaluation Value
Geological Landscape	VLFGLGL962	Barry-Rhose	Lowland hills and valleys	High
Landscape Habitat	VLFGLLH840	Rhose-Moulton	Mosaic	Moderate
Visual and Sensory	VLFGLVS641	Rhose Hinterland (southern and eastern part)	Mosaic Rolling Lowland	Moderate
Historic Landscape	VLFGLHL030	Porthkerry Rural (southern and eastern part)	Regular Fieldscapes	Moderate
Cultural Landscape	VLFGCLC039	Vale of Glamorgan Rural Rural Landscape		High

5.3.45 Whilst all LANDMAP Aspect areas have been considered, the main foci are on the Landscape Habitat, Visual and Sensory and Historical and Cultural Landscape LANDMAP Aspect Areas. An assessment of these and their relevance to the site are described below.

5.3.46 For the purposes of this report the Visual and Sensory areas which potentially fall within the visual envelope of the development proposal (identified from the ZTV) have been assessed. These are as follows:

- **Rhose Hinterland** VLFGVS641 (host Visual and Sensory Aspect Area);
- **Porthkerry Country Park and Environs** VLFGVS987 Visual and Sensory Aspect Area (immediately south);
- **Cardiff Wales Airport** VLGLVS723 Visual and Sensory Aspect Area (immediately north and west);
- **Llancarfan and Waycock Valleys** VLFGVS453 Visual and Sensory Aspect Area (north and west). Very small part affected – confined to upper slopes.
- **Upper Waycock Valley / Dyffryn Area** VLFGVS608 Visual and Sensory (north east). Very small part affected.

5.3.47 LANDMAP provides the following descriptions of each of the identified Visual and Sensory Aspect Area as follows:

Rhose Hinterland (host Visual and Sensory Aspect Areas)

"The aspect area is a gently undulating lowland plateau landscape situated close to the coast. It has a maximum height of approximately 77m AOD at New Farm, toward the north east of the area, and a low point of approximately 15m AOD, towards the coast at Rhose Point. The landcover is a pattern of mostly medium to large scale arable fields set in managed hedgerows. The area contains no woodland. The plateau quality, and absence of woodlands, enables long views from the area, towards Barry and occasionally Somerset, it also gives the area a feeling of openness. Settlements within the area consist of scattered farms. Several

roads cross the area. The A4226 links the airport with Cardiff and Barry. The B4265 then runs west to Llantwit Major. A railway line runs close to the coast linking Barry and Bridgend. Tranquillity is most affected by the presence of the airport. Hedgerows are generally well maintained. However, there is suburbanisation of the area especially along the main roads. Change detection 2014: Aberthaw Quarry expanded into area, plus housing at Rhoose."

Porthkerry Country Park and Environs

"The aspect area is a wooded lowland valley. Used as a country park it is situated next to the coast and bordering urban Barry. The maximum height of the area is approximately 70m AOD towards its north eastern boundary with Barry. Its lowest point is just above sea level. The landcover is a mixture of fields with hedgerows on upper slopes, grassland areas on the valley floor and woodlands. The woodland areas form the majority of the landcover and are situated on the valley sides. This gives the valley a confined quality. There are three farms scattered throughout the area. There is one minor access road which terminates at the park facilities and car park. These are well situated to minimise their overall effect. A railway line linking Barry to Bridgend bisects the area and the viaduct provides a dramatic and positive feature. The area is well used by local people for dog walking and other recreational pursuits. The character is of a pleasant country park, of cut glades and woodlands but showing signs of wear in places such as in the woodlands and on the stream edge. There are some detractors, especially the noise from Cardiff Airport. Change detection 2014: housing on edge of Barry excluded."

Cardiff Wales Airport

"The aspect area is an open lowland plateau which has been developed to create Cardiff Airport. The highest point in the area is approximately 70m AOD near the airport hotel and the lowest 45m AOD towards the northern boundary of the airport near the A4226. The landcover is development and can be described as continuous expanses of open land consisting of hard standing and grasses with some concentration of airport and ancillary buildings with the development of a business park with hotel to the north. The large expanse of open space creates an area of long, wide views, which has an exposed quality. Only one road passes through it which is the access road to the airport terminal. The area is bordered by several main roads and this together with the take-off and landing of aeroplanes has a major effect on tranquillity. The nature of the landscape of the airport (its flat functional sterility) makes building clutter easily visible, particularly the BA 747 maintenance facility which dwarfs the other elements which this include fences, ancillary buildings, roads, lighting and signage. Change detection 2014: less flights so less disturbance."

Llancarfan and Waycock Valleys

"The area is a steep sided narrow and enclosed lowland valley, which contains a tranquil landscape of streams, woodlands and small farms. The highest point of the valley is approximately 85m AOD in the north west, the lowest approximately 5m AOD near the village of Llancadle. The landcover of the valley is a mosaic pattern of pastoral fields and hedgerows, the latter often containing trees and there are substantial areas of woodland. The woodland areas are generally situated on the steeper upper slopes of the valley sides and assist in creating a confined sense of enclosure to the valley. The settlements of the area consist of a number of scattered farms and the village of Llancarfan. There is evidence of historic fortifications on the plateau edge and further lines provided by soil slip patterns on steep slopes. Several minor road cross the area, which tend to be centred on Llancarfan. However the area remains tranquil. The Llancarfan and Waycock Valleys are a well maintained landscape of unspoilt hedgerows and fields, conservation area villages and steep wooded valley sides. The power lines in the Waycock valleys are a detractor."

Upper Waycock Valley / Dyffryn Area

"The upper Waycock Valley is a broad gently sloping valley traversed by several minor watercourses. The highest point of the area is approximately 103m AOD in the north at the head of the Waycock Valley. The lowest point is approximately 25m AOD in the south west. The landcover is a mosaic of mostly pastoral fields with some arable enclosed by trimmed hedgerows with trees. Woodlands are dispersed throughout the area, generally on upper valley slopes and spurs. Settlement is centred on Dyffryn, which is an attractive village of stone dwellings, stone walls and a stream running alongside the road. Dyffryn Gardens are a formal designed gardens nearby, with an improved access to the road to the A48 to the north. Farms and occasional dwellings are scattered across the area. These are linked by quiet minor roads and a network of public footpaths and generally the area is tranquil. However, the area borders Barry to the south east as well as the A4226, hence tranquillity is affected here. In general the rural landscape is well maintained and the farms and settlements maintain their character. Detractors are pylons which cross the area to the south and the prominent edge of Barry on the hill top to the south. The adjacent golf course also significantly modifies the landscape character."

5.3.48 In addition, and in accordance with 'LANDMAP Information Guidance Note 3' (June 2010), plans have been prepared to show the following LANDMAP data with respect to the 'Visual and Sensory' aspect layer (see **Figures 5.7c to 5.7d**):

- Question 46 - 'Scenic Quality';
- Question 48 - 'Character Evaluation'; and
- Question 50 - 'Overall Evaluation'.

Visual and Evaluation Justification text
sensory

Rhoose Hinterland

46	Moderate	<i>Well managed pastoral landscape of hedgerows and fields which offers many moderately attractive views to sea to south and the rest of the Vale plateau to the north.</i>
48	Moderate	<i>Neutral, pleasant character but through its open flat character is influenced by adjacent uses such as the airport.</i>
50	Moderate	<i>Well managed pastoral landscape of hedgerows and fields which offers many moderately attractive views to sea to south and the rest of the Vale plateau to the north. The area is in fairly good condition with fairly consistent character with slight variation to the west. The area has a neutral, pleasant character but through its open flat character is influenced by adjacent uses such as the airport. It possesses many elements which are common to a farmed plateau which are not rare. The area is therefore assessed as moderate</i>

Porthkerry Country Park and Environs

Visual and sensory	Evaluation	Justification text
46	High	<i>The aspect area offers many picturesque views to landscape elements such as framed grassed areas, wooded valley sides., viaduct and sea.</i>
48	High	<i>The enclosing topography, tree cover and relationship with the sea gives the aspect area a sense of distinctive place and character.</i>
50	High	<i>Offers many picturesque views to landscape elements such as framed grassed areas, wooded valley sides, viaduct and sea. It is in fairly good condition although there are signs of wear and is of consistent character. The enclosing topography, tree cover and relationship with the sea gives the aspect area a sense of distinctive place and character. The enclosing topography, tree cover and relationship with the sea gives the aspect area a sense of distinctive place and character. The aspect area offers a strongly enclosed wooded valley, which is quite rare in the study area. The overall evaluation is therefore high.</i>
Cardiff Wales Airport		
46	Low	<i>Offers few views of a pleasing picturesque quality but rather views to an open and flat landscape dominated by fences and the huge airport terminal. There are several major detractors in the area including the BA hangar</i>
48	High	<i>Exciting and distinctive place with strong movement and interest of planes landing and taking off. BA hangar is huge visible building.</i>
50	Low	<i>Offers few views of a pleasing picturesque quality, but rather views to an open and flat landscape dominated by fences and the huge airport terminal. The area has been heavily developed with large scale buildings and infrastructure. Airport is exciting and distinctive place with strong movement and interest of planes landing and taking off. BA hangar is huge visible building. Cardiff Airport is the only functioning commercial airport in the vale area. However, the visual and sensory qualities of the area are not rare but share much in common with other areas, for instance RAF Athan and Llandow Industrial Estate</i>
Llancarfan and Waycock Valleys		

Visual and sensory	Evaluation	Justification text
46	High	<i>High quality scenic landscape with many picturesque views to fields, hedgerows and steeply wooded valley sides in an aesthetic composition.</i>
48	High	<i>Distinctive character defined by the strong enclosing topography, historic settlement pattern and features, woodland cover all creating a strong sense of place.</i>
50	High	<i>High quality scenic landscape with many picturesque views to fields, hedgerows and steeply wooded valley sides in an aesthetic composition. The integrity of the area is intact with consistent character and no inappropriate development within the settlements. The power lines in the Waycock do not mask the areas intrinsic qualities. The integrity of the area is also maintained within the rural landscape where hedgerows are maintained. The aspect area possesses a distinctive character defined by the strong enclosing topography, historic settlement pattern and features, woodland cover all creating a strong sense of place. The narrow enclosure and continuity of historic character are relatively rare. The overall evaluation is therefore high</i>
Upper Waycock Valley / Dyffryn Area		
46	Moderate	<i>Attractive panoramic views across the coalfield plateau including to the Brecon beacons to the north. The aspect area has broad, pleasing views to well managed countryside with a coherent field pattern and woodlands with settlements well integrated with the landscape and surrounding vegetation. The settlements have stone walls and streams also add to the picturesque quality of this area...</i>
48	High	<i>Unspoilt and contains well managed landscapes and picturesque settlements and gardens which help give the area a distinctive sense of place...</i>
50	High	<i>Broad, pleasing views to well managed countryside with a coherent field pattern and woodlands with settlements well integrated with the landscape and surrounding vegetation. The settlements have stone walls and streams also add to the picturesque quality of this area. The area is unspoilt, well managed and is in good and consistent condition throughout. The overall evaluation for the area is therefore high.</i>

5.3.49 LANDMAP Guidance Note 2 (2010) has been used to inform an understanding of how the development proposal may affect the various LANDMAP aspects. Paragraph 6.2.3 states "is advised that the Visual & Sensory overall evaluation is mapped, (Collector survey question 50) as well as the scenic quality and character evaluation criteria (Collector survey questions 46 and 48) to help identify aspect areas which may experience "likely significant effect". Attention should be focused on the outstanding, high and moderate aspect areas for further assessment. Aspect areas with an outstanding or high overall evaluation-score, or aspect areas with a moderate overall evaluation score but an outstanding or high evaluation in either scenic quality or character evaluation criteria, could be starting points for the assessment of significant effect."

5.3.50 The overall evaluation for the **Porthkerry Country Park and Environs, Llancarfan and Waycock Valleys** and **Upper Waycock Valley / Dyffryn** aspect areas is High (suggesting the potential for significant effects). The latter two aspect areas have very little overlap with the ZTV. The remaining Visual and Sensory Aspect areas **Wales Cardiff Airport** with Low overall evaluation and **Rhoose Hinterland** (the host aspect area) judged as Moderate suggests that significant effects may be unlikely.

5.3.51 With regards to the Historic Landscape Aspect Area, the application site falls within the **Porthkerry Rural** (VLGLHL030). This Aspect Area has a Moderate overall evaluation, the justification for which is the aspect area "*has been encroached upon by modern development, in the form of Aberthaw, Rhoose and Cardiff International Airport, a significant proportion of the regular fieldscape contained within the Aspect Area as shown on historic OS mapping has survived intact, as has the pattern of dispersed, small-scale settlement which appears to be of medieval origin. The large multivallate hillfort of The Bulwarks has also remained largely intact and represents a site with significant potential for further study and development as a public amenity.*"

5.3.52 In respect of the Cultural landscape aspect layer, the application site falls within the **Vale of Glamorgan Rural Landscape** (VLGLCL039). The overall evaluation is High as it is relatively untrammelled and evolved surviving agricultural and historic landscape. '*The Aspect Area is intended to encapsulate the landscape's historic past, and its size - surrounding the proliferation of small settlements and hamlets - helps to demonstrate that the Vale is essentially an evolved agricultural landscape. It contains abundant evidence of man's occupation and exploitation and its economic value (especially in the mediaeval period), evidenced by the large number of stone-built fortifications. Other evidence includes tumuli, earthworks and burial chambers from prehistory, Early Christian places of devotion and learning, monastic granges, a deserted mediaeval village, field systems and farmsteads. More recent attributes typical of a prosperous landscape are the 16 registered parks and gardens and their associated manor houses. The relatively unspoiled nature of the landscape is evidenced by the high number of designated Conservation Areas, testament in themselves to the gradual evolution and acceptable development over time. The rural landscape is served by a bewildering variety of narrow roads between (away from the coast) mostly unkempt hedgerows. Planning policies and the costs of upgrading these ancient communications routes have the culturally beneficial effect of limiting dormitory development in this highly attractive hidden landscape.*'

Visual Resource

5.3.53 The ZTV and Viewpoint Location Plan are provided in **Figure 5.2**.

5.3.54 The ZTV shows that the most prominent areas of potential visibility of the development proposal occur in areas to the east and south west at distances between approximately up to 0.7km from the application site. The ZTV also indicates that some parts of the application site are potentially visible across Cardiff Airport. The ZTV indicates that some of the application site is potentially visible from the ridge between Moulton and Pen Onn just over 2km to the north. Continuing

northwards, it is also potentially visible from ridges further north, approximately 3 and 4km away. Part of the application site is potentially visible from the beach south of The Knap in Barry.

Baseline Visual Receptors

5.3.55 The ZTV indicates that the development proposal would not generally be visible to the north east or from the western outskirts of Barry to the east. To the east, views diminish quickly beyond 650m from the eastern edge of the application site. To the south, views are shown to be relatively well contained by the railway approximately 650m away from the southern boundary and by local woodland. The eastern edge of Rhoose approximately 750m away is indicated as having potential views. There are potential views of part of the development proposal from the north west, including Tredogan approximately 350m away from the north western edge of the application site. North of the A4226 the landscape is incised by valleys and potential views of the development proposal are confined to ridge tops and south facing valley sides. Settlements such as Penmark, Llancarfan do not fall within the ZTV extent.

Residential Properties

5.3.56 The closest residential properties which are within the ZTV and would therefore have potential views of the application site are identified as:

To the north of the application site along Port Road:

- Model Farm within the application site on the northern boundary
- Welford Farm approximately 180m to the north east of the application site boundary
- New Farm Port Road approximately 640m to the north east of the application site boundary

To the west of the site along Porthkerry Road:

- Upper Porthkerry Farm immediately adjoining the south western boundary of the application site
- The Stables, 90m to the south east of the south west corner of the application site
- Lower Porthkerry Farm 130m to the south east of the south west corner of the application site
- The Old Rectory at Lower Porthkerry – approximately 230m to the south of the application site boundary
- Residential properties on the north east edge of Rhoose which have views across Cardiff Airport towards the application site.

Commercial Properties

5.3.57 There are three hotels which are close to the application site and within the ZTV and would therefore have potential views of it:

- Hotel/Private Property at Lower Porthkerry – approximately 230m to the south of the application site boundary
- The Holiday Inn Express off the roundabout junction between Port Road and Porthkerry road
- Sky Plaza Motel off Port Road opposite Model Farm
- Celtic International Hotel off Port Road opposite Model Farm

Public Highways

5.3.58 The application site is located within the surroundings of the following public highways:

- Port Road / A4226 located parallel to the northern boundary of the application site
- Porthkerry Road located to parallel to the south western boundary of the application site

Public Rights of Way (PRoW)

5.3.59 The application site is located within the surroundings of the following public rights of way (PROW) and are within the ZTV:

- Most of the length of footpath P4/17/1 and northern section of restricted byway P7/6/1 which runs south of the application site from Lower Porthkerry and follows the course of Whitelands Brook along the eastern boundary of the application site to the Welford on Port Road.
- Parts of the public footpath B1/41/1 in Porthkerry Country Park, within 1km of the boundary of the application site.
- A short section of footpath east of the church at Porthkerry P7/7/1, within 1km of the boundary of the application site.
- Most of the length of P4/20/1 which runs west to east from Whitelands Brook to West Ridge and the railway line within 1km of the application site.
- Short sections of footpaths P4/15/1 and P4/21/1 (Valeways Museum Heritage Trail) adjacent to the western boundary of Cardiff Airport, both 1.4km away from the application site western boundary.
- Specific and short sections of the Wales Coastal Path to the south of the application site at The Bulwarks and Bull Cliff, 750m and 1km from the southern boundary of the application site.

Recreation

5.3.60 The proposals are located within the surroundings of the following areas of recreation which have been identified on the Vale of Glamorgan Council interactive mapping web site. The following sites fall partly or completely within the extent of the ZTV:

- Porthkerry Country Park which lies less than 0.5km from the south east boundary of the application site.
- Ceri Road recreation ground on the eastern outskirts of Rhoose (approximately 700m south west of the western boundary of the application site)

Landscape Designations

5.3.61 The ZTV confirms that the development proposal does not fall within the visual envelope of any statutory landscape designations.

Selection of Representative Viewpoints

5.3.62 The ZTV for the development proposal was used to guide the selection of representative viewpoints for the visual assessment. The selected viewpoints are not intended to cover every possible view, but rather are representative of a range of receptor types e.g. residents, horse riders, walkers, cyclists and road users from various directions and distances from the application site boundary.

5.3.63 A visual assessment from the representative viewpoints was carried out in April and May 2019 to determine how the development proposal might influence the visual amenity for these typical receptors. The assessment was carried out as part of the site survey, with the photographic

assessment recording the character of the view and the existing visibility of the application site. The viewpoint photographs, detailed visual assessments and representative computer generated images from four of the viewpoints (VP2a, VP3, VP7 and VP9) are provided in **Figure 5.3**.

5.4 Description of Proposals

- 5.4.1 Hybrid application comprising demolition of existing buildings and erection of 44.75ha Class B1/B2/B8 Business Park, car parking, landscaping, drainage infrastructure, ecological mitigation and ancillary works (all matters reserved aside from access) within Area A and change of use from agricultural land to country park (Use Class D2) within Area B.
- 5.4.2 The business park proposes approximately 1.7 million sq. ft Class B1, B2 and B8 floorspace, car parking, landscaping, drainage infrastructure and ecological mitigation. It will provide high quality offices, light industrial and warehousing and distribution units as shown on the Indicative Concept Masterplan at Drawing JCD0064-003 Rev T.
- 5.4.3 Primary vehicular access will be provided via a new arm from the existing Port Road/A4226 roundabout. Legal & General's total landholding extends to 109ha. As part of the proposals 42ha of land will be transferred to the Vale of Glamorgan Council to facilitate an extension to Porthkerry Country Park to the south with better walking and cycling connections from Port Road to the existing Country Park.
- 5.4.4 The application site lies on heavily improved agricultural land divided by managed hedgerows. These features have low value in terms of recreation and ecology. Despite this much of the existing hedgerow network and landscape buffers have been incorporated into the green infrastructure of the scheme layout concurrent with incorporation of existing semi-natural features and provision of new green space in a network of connected features within and adjoining the scheme.
- 5.4.5 The vegetation removal that will be associated with the proposed scheme is a section of the group of immature trees shown as Group 2 in the Tree Survey placed on the highway verge to accommodate the new access and visibility splays and made up of a mix of *Crataegus monogyna* (Common Hawthorn), *Quercus robur* (Pedunculate Oak), *Fraxinus excelsior* (Common Ash), *Salix caprea* (Goat Willow), *Acer pseudoplatanus* (Sycamore), *Prunus avium* (Wild Cherry) and identified as tree quality category B2. In addition to the impact noted above the following trees/tree groups will be impacted: G1 (category C), G12 (category C), G13 (category U), Group 14 (category B) and 4 number Ash trees T69 (category B), T70 (category B), T71 (category C) and T72 (category B). Consequently, no category A trees will be removed as a result of the development proposal.
- 5.4.6 The following hedgerows will be impacted mainly to accommodate the new spine road: H1 (part), H5, H10 (part), H15, H17, H18 (part), H19 (part) and H20 (part).

Proposed Mitigation

- 5.4.7 As shown on the Indicative Concept Masterplan (**Figure 2.2**), a new belt of native woodland is proposed along the eastern boundary in association with the existing PRoW. A new belt of native woodland planting is proposed along the extent of the southern boundary in association with the new attenuation areas. An area of new woodland is proposed in the south west corner to soften the impact on the group of properties associated with Lower and Upper Porthkerry Farms. The extensive new native planting proposed as part of the new green infrastructure will more than mitigate for the loss of the vegetation listed in paragraphs 5.4.4 and 5.4.5 above.
- 5.4.8 The proposed 42ha extension to the very well used Porthkerry Country Park will benefit the communities within the settlements close by as well as the wider community within the Vale.

5.5 Planning Policy Context

Planning Policy Wales and Technical Advice Note 23 (TAN 23)

5.5.1 Chapter 7 of Planning Policy Wales and TAN23: Economic Development, set out the Welsh Government's planning objectives and policies in respect of economic development. They state that the planning system should support economic and employment growth alongside social and environmental considerations and within the context of sustainable development.

National Character Areas

5.5.2 LANDMAP is the formally adopted methodology for landscape assessment and is advocated by PPW and is promoted by Natural Resource Wales. It is considered to be a "whole" landscape approach that covers all landscapes, designated and non-designated in Wales.

Cardiff Airport – St Athan Enterprise Zone – Strategic Development Framework (SDF)

5.5.3 This document is in draft form and has yet to be adopted. The development proposal is in the 'Gateway Development Zone' one of three zones that make up the Cardiff Airport – St Athan Enterprise Zone:

'The Gateway Development Zone includes potential development land to the east of Cardiff Airport. It comprises two land parcels with land to the north owned by the Vale of Glamorgan Council and land to the south owned by Legal and General.'

'The site has been identified as having the potential to be a destination for local and international business including office accommodation, education/training facilities, leisure development and transport logistics. Together with the Aerospace Business Park, the Gateway Development Zone is allocated in the Vale of Glamorgan Deposit LDP as a strategic employment site.'

5.5.4 The SDF goes onto summarise the landscape context of the Enterprise Zone as:

'The Enterprise Zone is not located within any national landscape designations although Glamorgan Heritage Coast is adjacent to the southern boundary of the St Athan Aerospace Business Park. Special Landscape Areas (SLA) have been designated to protect areas of the Vale of Glamorgan that are considered to be important for their geological, natural, visual, historic or cultural significance. The Upper and Lower Thaw Valley SLA is adjacent to the eastern boundary of St Athan Aerospace Business Park whilst the Nant Llancarfan SLA is situated to the north of the Gateway Development Zone and west of Cardiff Airport.'

'The landscape within the Enterprise Zone boundary is generally considered to be of low quality according to Natural Resources Wales' LANDMAP, although parts of the Gateway Development Zone are evaluated as 'Moderate' and the southern parts of St Athan as 'Outstanding'. Along the coastline, the landscape is considered to be of generally outstanding quality.'

'Potentially sensitive visual receptors include proprieties within the settlements on the western edge of Barry (between 1 km and 1.5 km from the Gateway Development Zone), Penmark and Llancarfan to the north and the larger village of Rhoose to the immediate south. However, the potential for significant visual impacts is likely to be low given the existing topography, vegetation and tree cover as well as the presence of existing development.'

5.5.5 The section on Green Infrastructure within the SDF states that:

'The Gateway Development Zone itself offers coastal views and access and views to a mature coastal country park. The location provides easy access to a choice of established and

desirable villages and towns within the Vale of Glamorgan as well as access to city living in Cardiff. In design terms, the setting creates the opportunity for adding value to sites overlooking the southern edge of the Gateway Development Zone. The illustrative masterplan indicates office and leisure uses within these prime areas.'

'...Importantly, the green infrastructure network of the Gateway Development Zone will connect to an expanded Porthkerry Country Park that will provide an important public open space with opportunities for habitat creation and enhancement. The illustrative masterplan suggests that the landscape treatment of the east/west spine road from a point east of the junction with Port Road should represent a transition point from the less formalised landscape of the extended park through to the more formalised approach to landscaping taken along the remainder of this road as well as the main north/south spine road.'

Vale of Glamorgan Local Development Plan LDP (2017)

5.5.6 The development proposal falls within The Vale of Glamorgan Council area. The Adopted Proposal Map indicates that the development proposal is a Strategic Site – Cardiff Airport and Port Road, Rhoose. In terms of landscape and visual impacts the following policies are relevant to the development proposal, relevant extracts from the Local Development Plan (LDP) are provided here.

Policy SP2(3) Strategic Site – Cardiff Airport and Port Road Rhoose

5.5.7 *Cardiff Airport 5.41 The LDP Strategy recognises the importance of Cardiff Airport to the future prosperity of the Vale of Glamorgan, as does its designation (along with St Athan) as part of the 'St Athan – Cardiff Airport' Enterprise Zone. This strategically located flagship site is intended to stimulate inward investment and consolidate the role of the Vale of Glamorgan within the Capital Region.*

5.5.8 *To facilitate the Enterprise Zone, Policy MG10 allocates 77.4Ha of land surrounding the airport, which is intended to focus on business and employment uses catering specifically for the needs of the aerospace industry and high- tech manufacturing. Policy MG10 expands upon this strategic allocation designation, which will require a Masterplan to demonstrate how a comprehensive development can achieve the strategic goals identified within the LDP, alongside the provision of a sizeable extension to the existing Porthkerry Country Park to the west of Barry (Policy MG28 refers to this).*

Policy SP 5 - Employment Requirements

5.5.9 *In order to ensure the continued prosperity of the Vale of Glamorgan and promote growth in the capital region, 492 hectares (369 ha net) of land is allocated to meet regional and local employment needs. The 'St Athan – Cardiff Airport' Enterprise Zone forms part of this allocation in the LDP.*

Policy MG 10 - St Athan – Cardiff Airport Enterprise Zone

5.5.10 *Land is allocated adjacent to Cardiff Airport and Port Road, Rhoose (77 ha) and at the aerospace business park St Athan (305ha) for the development of 382 hectares of strategic employment land (class B1, B2 and B8) forming part of the St Athan – Cardiff Airport Enterprise Zone. The development of the enterprise zone will be guided by a masterplan to include the following elements:*

- ***The refurbishment of the existing 70,000 sqm hanger at St Athan (17.95 ha);***
- ***An aerospace business park north and south of the runway at St Athan;***
- ***A business park for aviation support services at Picketston (11.79 ha);***
- ***A new northern access road at the St Athan Enterprise Zone (Policy MG16 refers);***

- **New aerospace, education, research and development, manufacturing, office and other ancillary development at the Cardiff Airport and gateway development zone (77 ha);**
- **A 42 hectare extension to Porthkerry Country Park (Policy MG28 refers);**
- **Provision of sustainable transport infrastructure; and**
- **The incorporation of sustainable energy centre at the Cardiff Airport and gateway development zone.**

Located immediately to the east of the Airport, and south of Port Road, this strategic employment site measures approximately 77.4 hectares and draws benefits from its designation as an Enterprise Zone, alongside the Welsh Government's Aerospace Space Business Park at St Athan, as well as its proximity to the motorway network. Development of the site will encourage inward investment and consolidate the role of the Vale of Glamorgan within the Capital Region.

In order to deliver a high quality, comprehensive and sustainable development on this strategically important site, a Masterplan will be required to guide the development at the St Athan and Cardiff Airport Enterprise Zone considering the elements set out within Policy MG10. For the Cardiff Airport Gateway Development Zone this will include the following elements:

- a. *Employment - the strategic employment site will be developed for B1, B2 and B8 uses, which will be required to be related to appropriate manufacturing, research and development.*
- b. *Land for the extension of Porthkerry Country Park – Given the fine landscape qualities of the Vale of Glamorgan, and the need to promote sustainability, development to the south of Port Road is only considered acceptable as part of a comprehensive development including the transfer to the ownership of the Vale of Glamorgan Council (together with appropriate negotiated financial contributions) of land for a 42 ha extension to Porthkerry Country Park (Policy MG28 refers).*
- c. *The provision of an energy centre, such as a Combined Heat and Power (CHP) Plant, to ensure the development has high sustainable credentials.*
- d. *Sustainable transport infrastructure including consideration of a route for a potential rail link to Cardiff Airport across the site to ensure the development does not compromise future proposals to enhance sustainable access to the airport.*

Policy MG28 – Public Open Space Allocations

5.5.11 This includes 42ha extension to Porthkerry Country Park immediately south of the Cardiff Airport Enterprise Zone which is part of this Strategic Site development proposals.

Policy SP10 - Built and Natural Environment

5.5.12 *Development proposals must preserve and where appropriate enhance the rich and diverse built and natural environment and heritage of the Vale of Glamorgan including:*

5.5.13 The areas and aspects most pertinent to this landscape and visual assessment of the development proposal and within the 5km study area are;

1. *The architectural and / or historic qualities of buildings or conservation areas, including locally listed buildings;*
2. *Historic landscapes, parks and gardens;*
3. *Special landscape areas; - Nant Llancarfan adjoins the application site immediately to the north is subject to Policy MG17 Special Landscape Areas.*

Policy MG17 – Special Landscape Areas (SLA)

5.5.14 Nant Lancarfan SLA is located immediately to the north of the application site.

Within the special landscape areas identified above, development proposals will be permitted where it is demonstrated they would cause no unacceptable harm to the important landscape character of the area.

SLAs have been designated to protect areas of the Vale of Glamorgan that are considered to be important for their geological, natural, visual, historic or cultural significance.

A LVIA will be required for any development that is likely to have a significant impact upon landscape character or have a significant visual effect within the wider landscape (by virtue of its size or prominence or degree of impact on the locality) and will be prepared in accordance with the latest Landscape Institute and the Institute of Environmental Management and Assessment guidelines.

5.6 Effect on Landscape Elements and Features and Assessment of Significance

5.6.1 The effect on landscape elements relates to the direct effect on the physical fabric of the application site arising from the proposals. These are assessed as follows:

Site Topography

5.6.2 The application site is located at between 64.52m along Port Road and 51.63m AOD on a southwest facing slopes of the southern boundary.

Sensitivity: The undulating farmland surrounding the application site is considered to be of Medium value and Medium susceptibility as its inter-visibility with the wider surrounding area is restricted by intervening topography. The overall sensitivity is therefore considered to be Medium.

Magnitude: The overall application site topography would remain largely unchanged, however within the site at a local level remodelling will be required especially for the larger building plots, site access roads and localised regrading to create level platforms by up to 5m. The Magnitude of Change is therefore considered to be Medium.

Effect: With a Medium sensitivity and a Medium Magnitude of Change, the development proposal would result in a Moderate effect on site topography.

Trees and Hedgerows

5.6.3 The fields separating the application site generally comprise bushy native hedgerows, containing isolated hedgerow trees. The development proposal has been designed to retain all of the boundary hedgerows, with the exception of a short section to accommodate the eastern access point off Port Road, negating the requirement for hedgerow removal.

A survey of trees undertaken by RPS (May 2019) confirms that the proposed layout will require the removal of a section of category B trees in G2 to accommodate the access.

Sensitivity: The on-site hedgerows and trees are considered to be of Medium value and susceptibility. The Rhoose Hinterland Visual and Sensory Aspect Area surrounds the Cardiff Wales Airport Aspect Area and is bordered by the Porthkerry Country Park and Environs Aspect Area to the south east. LANDMAP's evaluation of Value in Visual and Sensory terms is Medium. The landscape elements and features within the application site are not particularly unique. Therefore, their overall sensitivity is considered to be Medium.

Magnitude: There would be a minor loss of trees and hedgerows to accommodate the access, as a result of the development proposal. Consequently, there would be an overall Low effect on trees and hedgerows.

Effect: With a Medium sensitivity and Low Magnitude of Change, the development proposal would result in a Minor effect on hedgerows and trees on the application site according to the assessment criteria.

Farmland

5.6.4 The Preliminary Ecological Appraisal (RPS, 2019) indicates that the application site comprises heavily improved agricultural land divided by managed hedgerows. These features have low value in terms of recreation and ecology. Despite this much of the existing hedgerow network and landscape buffers have been incorporated into the green infrastructure of the scheme layout concurrent with incorporation of existing semi-natural features and provision of new green space in a network of connected features within and adjoining the scheme.

Sensitivity: The farmland is considered to be of low value and of low susceptibility due the lack of any statutory designations. The overall sensitivity is considered to be Low.

Magnitude: the ecological appraisal advises that the layout has been designed to avoid higher value habitats, with much of the existing hedgerow network and landscape buffers incorporated into the green infrastructure of the scheme layout. However, the farmland will be changed to developed land. The magnitude of change is therefore considered to be High.

Effect: With a Low sensitivity and High Magnitude of Change, the development proposal would result in a Moderate (but localised) effect on the farmland within the application site.

Public Rights of Way

5.6.5 Most of the length of footpath P4/17/1 and northern section of restricted byway P7/6/1 which runs south of the application site from Lower Porthkerry and follows the course of Whitelands Brook along the eastern boundary of the application site to the Welford on Port Road.

Sensitivity: Public Rights of Way are considered to be of High susceptibility and value and consequently are of High sensitivity.

Magnitude: There would be a Negligible effect on the PRoW within the redline boundary of the application site.

Effect: With a High sensitivity and a Negligible Magnitude of Change, there would be Minor effect on Public Rights of Way through the application site according to the assessment criteria. However, in reality it is considered that there would be Negligible/No effect.

Landform and Enclosure

5.6.6 The landform surrounding the south of the application site is characterised by the sloping south facing land that slopes downwards towards the country park and the coastline. The land to the west has been heavily remodelled to accommodate the runway for the airport. To the north Port Road lies on a localised ridge before the land slopes gently away. The sense of enclosure within the study area is influenced by the topography and the presence of intervening woodland and hedgerow boundary vegetation. As the development proposal would fit within the existing field boundaries, the landform and the enclosure would not change as a result of the development proposal.

Sensitivity: The undulating surrounding landform is considered to be of Medium value and Medium susceptibility as its inter-visibility with the wider surrounding area is restricted by intervening topography. The overall sensitivity is therefore considered to be Medium.

Magnitude: The overall landform would remain largely unchanged except at a local level where remodelling will be required especially for the larger building plots, site access roads and localised regrading to create level platforms. The Magnitude of Change is therefore considered to be Medium.

Effect: With a Medium sensitivity and a Medium Magnitude of Change, the development proposal would result in a Moderate effect on landform and enclosure.

Settlement Pattern

5.6.7 The larger settlements within the study area comprise Rhoose (south west) and Barry (east). Cardiff Airport complex lies adjacent to the north. The Holiday Inn Express lies adjacent to the north and a number of other hotel complexes lies along Port Road. There would be no change in the settlement pattern as a result of the development proposal.

Sensitivity: The larger settlements have Low value and Low and their inter-visibility is restricted by intervening topography. The overall sensitivity is therefore considered to be Low.

Magnitude: The settlement pattern would remain largely unchanged. The Magnitude of Change is therefore considered to be Low.

Effect: With a Low sensitivity and a Low Magnitude of Change, the development proposal would result in a Negligible effect on the settlement pattern.

Table 5.4 Summary of effects on landscape elements.

Landscape Elements	Value	Susceptibility	Sensitivity	Magnitude	Effect	EIA Significance
Site Topography	Medium	Medium	Medium	Medium	Moderate (localised)	Yes
Hedgerows and Trees	Medium	Medium	Medium	Low	Minor	No
Farmland	Low	Low	Low	High	Moderate	Yes
Public Rights of Way	High	High	High	Negligible	Negligible/No Effect	No
Landform and Enclosure	Medium	Medium	Medium	Medium	Moderate (localised)	Yes
Settlement Pattern	Medium	Medium	Medium	Medium	Moderate	Yes

5.7 Effect on Landscape Character and Assessment of Significance

5.7.1 The effect on the LANDMAP Aspect Areas relates to the direct effect on the characteristics of the surrounding landscape from the proposals. These are assessed as follows:

The Rhoose Hinterland Aspect Area (VLFGLVS641)

Sensitivity

5.7.2 The Rhoose Hinterland Visual and Sensory Aspect Area surrounds the Cardiff Wales Airport Aspect Area and is bordered by the Porthkerry Country Park and Environs Aspect Area to the south east. LANDMAP's evaluation of Value in Visual and Sensory terms is Medium. The Aspect Area offers some natural enclosure by way of its undulating rolling topography mature woodland blocks and the surrounding urbanising influences especially its proximity to both Cardiff Airport and Barry. Also, the landscape elements and features within the application site are not particularly unique. Therefore, the susceptibility to the type of development proposed is judged to be Medium. Therefore, its overall sensitivity is considered to be Medium.

Magnitude

5.7.3 The proposals would result in the conversion of a small part of the host Aspect Area from a predominantly agricultural landscape to a new mixed development of employment use. Consequently, the Magnitude of Change would be High locally but Low in the context of the whole Aspect Area.

Effect

5.7.4 With a Medium sensitivity and a Low Magnitude of Change, the development proposal would have a Major effect locally on the Rhoose Hinterland Visual and Sensory Aspect Area. However, In the context of the whole Aspect Area as the Magnitude of Change is judged to be Low the effect would be Minor which is not significant in terms of EIA.

Porthkerry Country Park and Environs Aspect Area (VLFGLVS987)

Sensitivity

5.7.5 This aspect area lies to the south within a wooded lowland valley and is used as a country park, bordering urban Barry. LANDMAP's evaluation of Value in Visual and Sensory terms is Medium. The landcover is a mixture of fields with hedgerows on upper slopes, grassland areas on the valley floor and woodlands. The woodland areas form the majority of the landcover and are situated on the valley sides. This gives the valley a confined quality. The character is of a pleasant country park, of cut glades and woodlands but showing signs of wear in places such as in the woodlands and on the stream edge. There are some detractors, especially the noise from Cardiff Airport. Therefore, its overall sensitivity is considered to be High.

Magnitude

5.7.6 As a result of limited inter-visibility, the proposals would result in no changes to this Aspect Area as a result of the proposed employment use. Consequently, the Magnitude of Change would be Negligible in the context of the whole Aspect Area.

Effect

5.7.7 With a High sensitivity and a Negligible Magnitude of Change, the development proposal would have a Minor effect locally on the Porthkerry Country Park and Environs Aspect Area Sensory Aspect Area.

Cardiff Wales Airport

Sensitivity

5.7.8 This aspect area lies to the west and is an open lowland plateau which has been developed to create Cardiff Airport. LANDMAP's evaluation of Value in Visual and Sensory terms is Low. The

landcover is development and can be described as continuous expanses of open land consisting of hard standing and grasses with some concentration of airport and ancillary buildings with the development of a business park with hotel to the north. The area is bordered by several main roads and this together with the take-off and landing of aeroplanes having a major effect on tranquillity.

Magnitude

5.7.9 The proposals would result in limited changes to this Aspect Area as a result of the proposed employment use. Consequently, the Magnitude of Change would be Low in the context of the whole Aspect Area.

Effect

5.7.10 With a Low sensitivity and a Low Magnitude of Change, the development proposal would have a Negligible effect locally on the Porthkerry Country Park and Environs Aspect Area Sensory Aspect Area, which is not significant in terms of EIA.

Llancarfan and Waycock Valleys

5.7.11 This aspect area lies to the north and west and is a steep sided narrow and enclosed lowland valley, which contains a tranquil landscape of streams, woodlands and small farms. LANDMAP's evaluation of Value in Visual and Sensory terms is High. The landcover of the valley is a mosaic pattern of pastoral fields and hedgerows, the latter often containing trees and there are substantial areas of woodland. The woodland areas are generally situated on the steeper upper slopes of the valley sides and assist in creating a confined sense of enclosure to the valley. The Llancarfan and Waycock Valleys are a well maintained landscape of unspoilt hedgerows and fields, conservation area villages and steep wooded valley sides. The power lines in the Waycock valleys are a detractor.

Magnitude

5.7.12 As a result of limited inter-visibility, the proposals would result in no changes to this Aspect Area as a result of the proposed employment use. Consequently, the Magnitude of Change would be Negligible in the context of the whole Aspect Area.

Effect

5.7.13 With a High sensitivity and a Negligible Magnitude of Change, the development proposal would have a Minor effect locally on the Llancarfan and Waycock Valleys Aspect Area, which is not significant in terms of EIA.

Upper Waycock Valley/Dyffryn Area

Sensitivity

5.7.14 This aspect area lies to the north east and is a broad gently sloping valley traversed by several minor watercourses. LANDMAP's evaluation of Value in Visual and Sensory terms is Medium. The landcover is a mosaic of mostly pastoral fields with some arable enclosed by trimmed hedgerows with trees. Woodlands are dispersed throughout the area, generally on upper valley slopes and spurs. In general, the rural landscape is well maintained, and the farms and settlements maintain their character. Detractors are pylons which cross the area to the south and the prominent edge of Barry on the hill top to the south.

Magnitude

5.7.15 As a result of limited inter-visibility, the proposal would result in no changes to this Aspect Area as a result of the proposed employment use. Consequently, the Magnitude of Change would be Negligible in the context of the whole Aspect Area.

Effect

5.7.16 With a Medium sensitivity and a Negligible Magnitude of Change, the development proposal would have a Negligible effect locally on the Llancarfan and Waycock Valleys Aspect Area, which is not significant in terms of EIA.

Nant Llancarfan SLA

5.7.17 LANDMAP's evaluation of Value in Visual and Sensory terms is High. The landcover of the valley is a mosaic pattern of pastoral fields and hedgerows, the latter often containing trees and there are substantial areas of woodland. The woodland areas are generally situated on the steeper upper slopes of the valley sides and assist in creating a confined sense of enclosure to the valley. The Llancarfan and Waycock Valleys are a well maintained landscape of unspoilt hedgerows and fields, conservation area villages and steep wooded valley sides. The power lines in the Waycock valleys are a detractor.

Magnitude

5.7.18 As a result of limited inter-visibility, the proposals would result in no changes to this SLA as a result of the proposed employment use. Consequently, the Magnitude of Change would be Negligible in the context of the whole SLA.

Effect

5.7.19 With a High sensitivity and a Negligible Magnitude of Change, the development proposal would have a Minor effect locally on the Nant Llancarfan SLA, which is not significant in terms of EIA.

Summary

5.7.20 The assessment of significance of the impact on the 5 LANDMAP Aspect Areas and the 1 SLA identified within the ZVT concludes that the level of predicted impact of the development proposal will not result in impact of EIA significance on landscape character (see summary Table 5.5 below).

Table 5.5: Summary of effects on landscape character

Landscape Elements	Value	Susceptibility	Sensitivity	Magnitude	Effect	EIA Significance
Rhoose Hinterland Aspect Area	Medium	Medium	Medium	Low	Minor	No
Porthkerry Country Park and Environ Aspect Area	High	High	High	Negligible	Minor	No
Cardiff Airport Aspect Area	Low	Low	Low	Negligible	Negligible	No
Llancarfan and Waycock Valleys	High	High	High	Negligible	Minor	No

Upper Waycock Valley / Dyffryn Area	Medium	Medium	Medium	Negligible	Negligible	No
	High	High	High	Negligible	Minor	No

5.8 Effect on Visual Amenity and Assessment of Significance

Residential Receptors

Welford Farm complex

5.8.1 Views towards the development proposal are partially contained from the private residence within the Welford Farm complex as a result of intervening road side boundary vegetation, however there would be views of the new buildings above this vegetation to the south.

Sensitivity: Views from residential properties are generally considered to be of high value, susceptibility and overall sensitivity.

Magnitude: The development proposal would be lower lying, would not break the skyline however, as buildings would be visible to the south west the Magnitude of Change is considered to be high.

Effect: With a High sensitivity and a High Magnitude of Change, the effect would be Substantial which is significant in EIA terms.

New Farm Port Road

5.8.2 Views towards the development proposal are largely contained by intervening roadside vegetation immediately to the south of the property largely concealing views of the new development.

Sensitivity: Views from residential properties are generally considered to be of high value, susceptibility and overall sensitivity.

Magnitude: The development proposal would be low-lying, would not break the skyline and would be concealed by existing vegetation, the Magnitude of Change is considered to be low.

Effect: With a High sensitivity and a Low Magnitude of Change, the effect would be Moderate which is significant in EIA terms.

Upper Porthkerry Farm

5.8.3 Views towards the development proposal are largely open across the area especially to the north.

Sensitivity: Views from residential properties are generally considered to be of high value, susceptibility and overall sensitivity.

Magnitude: The development proposal would be clearly visible and break the skyline in this part of the application site, therefore the Magnitude of Change is considered to be high.

Effect: With a High sensitivity and a High Magnitude of Change, the effect would be Substantial which is significant in EIA terms.

The Stable Porthkerry Farm

5.8.4 Views towards the development proposal are largely concealed by a combination of adjacent dwellings and trees.

Sensitivity: Views from residential properties are generally considered to be of high value, susceptibility and overall sensitivity.

Magnitude: The development proposal would be largely concealed in this part of the application site, therefore the Magnitude of Change is considered to be Medium.

Effect: With a High sensitivity and a Medium Magnitude of Change, the effect would be Major which is significant in EIA terms.

Lower Porthkerry Farm

5.8.5 Views towards the development proposal are largely concealed by a combination of adjacent dwellings and trees.

Sensitivity: Views from residential properties are generally considered to be of high value, susceptibility and overall sensitivity.

Magnitude: The development proposal would be largely concealed in this part of the application site, therefore the Magnitude of Change is considered to be Medium.

Effect: With a High sensitivity and a Medium Magnitude of Change, the effect would be Major which is significant in EIA terms.

The Old Rectory

5.8.6 Views towards the development proposal are largely concealed by a combination of adjacent dwellings and trees.

Sensitivity: Views from residential properties are generally considered to be of high value, susceptibility and overall sensitivity.

Magnitude: The development proposal would be largely concealed in this part of the application site, therefore the Magnitude of Change is considered to be Medium.

Effect: With a High sensitivity and a Medium Magnitude of Change, the effect would be Major which is significant in EIA terms.

Public Highways

5.8.7 The application site is located within the surroundings of the following public highways:

- Port Road is located adjacent to the application site's north boundary;

- Porthkerry Road is located adjacent to the application site's western boundary.

Port Road

5.8.8 Views from the section of Port Road to the south are contained by the screening effect of boundary hedgerows and trees. However, where there are gaps in the vegetation along the application site's northern boundary, there are open views of the application site.

Sensitivity: Views from public highways are considered to be of Medium value and of Medium susceptibility due to the visual enclosure provided by vegetation limiting views across the adjacent landscape. The overall sensitivity is considered to be Medium.

Magnitude: For the surrounding highway network, the Magnitude of Change as a result of the development proposal is assessed as High/Medium.

Effect: Sections of Port Road to the south west of the application site, would undergo a High effect on visual amenity as a result of the development proposal. With a Medium sensitivity and a High Magnitude of Change, the effect would be Major but localised which is significant in EIA terms.

Porthkerry Road

5.8.9 Views from the section of Porthkerry Road to the south are contained by the screening effect of boundary hedgerows and trees. However, where there are gaps in the vegetation along the application site's northern boundary, there are open views of the application site.

Sensitivity: Views from public highways are considered to be of Medium value and of Medium susceptibility due to the visual enclosure provided by vegetation limiting views across the adjacent landscape. The overall sensitivity is considered to be Medium.

Magnitude: For the surrounding highway network, the Magnitude of Change as a result of the development proposal is assessed as High/Medium.

Effect: Sections of Porthkerry Road to the south west of the application site, would undergo a High effect on visual amenity as a result of the development proposal. With a Medium sensitivity and a High Magnitude of Change, the effect would be Major but localised which is significant in EIA terms.

Public Rights of Way

5.8.10 The development proposal is located within the surroundings of the following public rights of way:

- Most of the length of footpath P4/17/1 and northern section of restricted byway P7/6/1 which runs south of the application site from Lower Porthkerry and follows the course of Whitelands Brook along the eastern boundary of the application site to the Welford on Port Road.

Sensitivity: PRoWs are representative of the views experienced by walkers, local residents and tourists and are considered to be of high value, susceptibility and overall sensitivity.

Magnitude: A short sections of this footpath as it crossed the field adjacent to the north east corner of the application site would undergo a High Magnitude of Change as direct views of the development proposal would be visible at close-range.

Effect: With a High sensitivity and a High Magnitude of Change, there would be a Substantial effect on visual amenity but localised which is significant in EIA terms.

Visual Assessment

Distant Views (2km+ from the application site)

5.8.11 There are four medium range representative Viewpoints – VP9, VP10, VP11, VP12 and VP13. All of these viewpoints are assessed as undergoing a Negligible effect on visual amenity as a result of the development proposal.

Medium Range Views (500m to 2km from the application site)

5.8.12 There are four medium range representative Viewpoints – VP7, VP8, VP14 and VP15. Viewpoint 7 and 8 would undergo a Major and Substantial Visual Effect respectively and Viewpoint 14 and 15 are assessed as undergoing a Minor effect on visual amenity as a result of the development proposal.

Short-range Views (less than 500m from the application site)

5.8.13 Of the six representative short-range Viewpoints (VPs), all of the effects would be localised as follows:

- VP1 would undergo Moderate Visual Effects at Years 1 reducing to Negligible after 10 years;
- VP2 would undergo Substantial Visual Effects at Years 1 reducing to Minor after 10 years;
- VP2a would undergo Substantial Visual Effects at Year 1 reducing to and Minor after 10 years;
- VP3 would undergo Major Visual Effects at Years 1 reducing to Moderate after 10 years;
- VP4 would undergo Major Visual Effects at Years 1 reducing to Moderate after 10 years;
- VP5 would undergo Major Visual Effects, at Years 1 reducing to Minor after 10 years; and
- VP6 would undergo Major Visual Effects at Years 1 reducing to Minor after 10 years;

5.8.14 The summary of the anticipated effects on visual receptors and representative viewpoints are shown in Table 5.6:

Table 5.6 Summary of Effects on Visual Receptors and Representative Viewpoints

Visual Receptor/ Representative Viewpoint	Description of the View	in Change Baseline	Sensitivity	Magnitude	Effect Year 1	Effect Year 10 with mitigation	Significance in EIA Terms
Welford Farm complex			High	High	Substantial	Moderate	YES
Farm Port			High	Low	Moderate	Low	NO

Visual Receptor/ Representative Viewpoint	Description of the View	in Change Baseline	Sensitivity	Magnitude	Effect Year 1	Effect Year 10 with mitigation	Significance in EIA Terms
Upper Porthkerry Farm			High	High	Substantial	Moderate	YES
Porthkerry Farm Stables			High	Medium	Moderate	Minor	NO
Lower Porthkerry Farm			High	Medium	Moderate	Minor	NO
The Old Rectory			High	Medium	Moderate	Minor	NO
Port Road		Medium	High	Major (localised)	Moderate	YES	
Porthkerry Road		Medium	High	Major (localised)	Minor	NO	
Wider PROW Network		High	Low	Moderate	Minor	NO	

Viewpoint 1 Layby on Porth Road	Looking south west at a distance of 369m from the nearest site boundary at contour 77 AOD.	New built development at a will be visible above the roadside boundary hedge.	Medium	Medium	Moderate (localised)	Negligible	NO
Viewpoint 2 Junction of Porth Road and PROW P4/17/1	Looking south west at a distance of 153m from the nearest site boundary at contour 73 AOD.	New built development will be clearly visible against a background of built development in distance.	High	High	Substantial (localised)	Minor	NO
Viewpoint 2a Along PROW P4/17/1	Looking south west at a distance of	New built development will be clearly	High	High	Substantial (localised)	Minor	NO

Visual Receptor/ Representative Viewpoint	Description of the View	in Change Baseline	Sensitivity	Magnitude	Effect Year 1	Effect Year 10 with mitigation	Significance in EIA Terms
	107m from the nearest site boundary at contour 70 AOD. visible against a background of built development in distance.						
Viewpoint 3 Junction of Porth Road and Blackton Lane.	Looking south east at a distance of 10m from the nearest site boundary at contour 60 AOD. New built development will be visible above the roadside hedge.	New built development	Medium	High	Major (localised)	Moderate	YES
Viewpoint 4 Near junction of Port Road and Porthkerry Road	Looking south east at a distance of 100m from the nearest site boundary at contour 60 AOD. New built development will be visible above the roadside hedge against a background of built development in distance.	New built development	Medium	High	Major (localised)	Moderate	YES
Viewpoint 5 View from Porthkerry Road and Sustrans Cycle Route	Looking east at a distance of 5m from the nearest site boundary at contour 60 AOD. New built development will be visible above the roadside hedge against a background of built development on the skyline.	New built development	Medium	High	Major (localised)	Minor	NO
Viewpoint 6 Junction of unnamed lane	Looking north east at a New built development will be visible	New built development	Medium	High	Major (localised)	Minor	NO

Visual Receptor/ Representative Viewpoint	Description of the View	in Change Baseline	Sensitivity	Magnitude	Effect Year 1	Effect Year 10 with mitigation	Significance in EIA Terms
and Porthkerry Road	distance of 200m from the nearest site boundary at contour 60 AOD.	above the roadside boundary hedge against a background of built development on the skyline.					
Viewpoint 7 Junction of Porthkerry Road and end of runway	Looking north at a distance of 501m from the nearest site boundary at contour 60 AOD.	New built development will be visible above the roadside boundary hedge against a background of built development on the skyline.	Medium	High	Major (localised)	Minor	NO
Viewpoint 8 Along PRow P4-20-1 from West Ridge	Looking north west at a distance of 507m from the nearest site boundary at contour 74 AOD.	New built development will be visible on the south facing slope.	High	High	Substantial (localised)	Moderate	YES
Viewpoint 9 Cold Knap Point, Barry	Looking north west at a distance of 2680m from the nearest site boundary at contour 15 AOD.	A very brief glimpse of the new built development may be visible though Porthkerry viaduct.	High	Negligible	Minor	Minor	NO

Visual Receptor/ Representative Viewpoint	Description of the View	in Change Baseline	Sensitivity	Magnitude	Effect Year 1	Effect Year 10 with mitigation	Significance in EIA Terms
Viewpoint 10 Friars Point, Whitmore Bay, Barry	Looking north west at a distance of 3451m from the nearest site boundary. Porthkerry at contour 15 AOD.	A very brief glimpse of the new built development may be visible though boundary Porthkerry at contour viaduct.	High	Low	Minor	Minor	NO
Viewpoint 11 Wales Coast Path, Neil's Point, Whitmore Bay, Barry	Looking north west at a distance of 3952m from the nearest site boundary. Porthkerry at contour 25 AOD.	A very brief glimpse of the new built development may be visible though boundary Porthkerry at contour viaduct.	High	Low	Minor	Minor	NO
Viewpoint 12 Public Road, Moulton	Looking south at a distance of 2140m from the nearest site boundary. The airport at contour 71 AOD.	A very brief glimpse of the new built development may be visible above the airport runway.	High	No change	Negligible	Negligible	NO
Viewpoint 13 Valeways Millennium Heritage Trail near Llanbetherwy	Looking south east at a distance of 4380m from the nearest site boundary. The airport runway at 70m AOD.	A very brief glimpse of the new built development may be visible above the airport runway.	High	No change	Negligible	Negligible	NO
Viewpoint 14 Valeways Millennium Heritage Trail	Looking east at a distance of 1470m from the nearest site boundary. The new built development at 1470m AOD.	A very brief glimpse of the new built development may be visible though boundary Porthkerry at contour viaduct.	High	Negligible	Minor (which is not significant for EIA)	Minor	NO

Visual Receptor/ Representative Viewpoint	Description of the View	in Change Baseline	Sensitivity	Magnitude	Effect Year 1	Effect Year 10 with mitigation	Significance in EIA Terms
near Font-y- 'Gary	nearest site boundary at contour 64 AOD.	visible above the airport runway through the airport boundary fencing.					
Viewpoint 15 Ceri Road near recreation area	Looking east at a distance of 739m from the nearest site	A very brief glimpse of the new built development may be visible above the airport runway through the airport boundary fencing.	High	Negligible	Minor	Minor	NO

*indicates a minor effect in accordance with the methodology in **Appendix 5.1**, however in reality No Effect.

Night-time Visual Effects

5.8.15 A sensitive lighting scheme should be provided for the development to minimise the night time visual effects on the local landscape.

Construction Effects

5.8.16 Construction activities associated with the development would include the following;

- Erection of temporary protective fencing for hedgerows and trees
- Stripping and stockpiling of soil materials
- Erection and cladding of new buildings
- Construction of access and service roads
- Construction compound, site offices and car park
- Implementation of soft and hard landscape proposals

Landscape Effects

5.8.17 The construction site and activities for this development would result in localised, short term direct effects on the fabric of the Rhoose Hinterland Visual and Sensory Aspect Area and limited indirect effects on the aspect areas.

5.8.18 The activities within the local agricultural landscape would temporarily form a discordant addition to a small part of the rural character area, although the low level and low-key nature of the

activities would not be completely uncharacteristic of the landscape. The activities would be relatively well contained within the majority of the wider landscape context by vegetation within and around the application site and the locally undulating topography. The effects on the Nant Llancarfan SLA would be no greater than during the operational phase and Minor adverse at worst. The levels of effect previously defined for the operational stage of the development would be the same for the construction phase for all the landscape receptors. Whilst the nature of the construction site and activities is more discordant in the landscape than the completed scheme, this would be balanced by the short-term nature of effects.

Visual Effects

5.8.19 The same six local viewpoints, 1 to 6, that were assessed in the operational phase, out of a total of 16, would experience short term significant effects. Viewpoints 9 to 15 are medium and long range visual receptors and would undergo temporary short term Minor or Negligible effects on visual amenity, which is not significant.

5.8.20 There would be limited short term impacts on other visual receptors. A very limited number of visual receptors that would undergo the highest effects. These are limited to those in the immediate vicinity of the application site, namely residents living in the private residences associated with Upper and Lower Porthkerry Farm, Welford Farm private residences, walkers using the short section of PRoW P4/17/1 as it crosses the open field to the north east of the application site and road users along short sections of Porthkerry Road and Port Road adjacent to the site boundaries. The construction works and machinery would appear as temporary new elements within localised views but not to such an extent that they would prevent receptors enjoying wider views of the expansive landscape setting in which the construction activities would be seen as a relatively small part of these local views.

Risk of Accidents or Disasters

5.8.21 With respect to landscape and visual matters, potential accidents/disasters relevant to the Proposed Development are unlikely. There is a potential risk of introduced diseases affecting vegetation, for example Ash dieback. As a precautionary measure Ash would not be specified within proposed planting mixes.

Potential Changes to the Assessment as a Result of Climate Change

5.8.22 The Met Office UK Carbon Projections ('UKCP18') dataset provides probabilistic projections of change in climatic parameters over time for 25 km grid squares across the UK. Projected changes during low, medium and high future global greenhouse gas emissions scenarios have been reviewed for the period from 2020 up to 2069, encompassing the potential construction and operational periods of the proposed development.

5.8.23 The likely ranges of change in climatic parameters including precipitation, temperature, wind speed, humidity and frequency of extreme weather may affect the native flora. However, while this would not increase the sensitivity of receptors, it may affect the magnitude of impact, e.g. the development may be more visible to people who only have semi-screened views at present, or it may increase the number of receptors, where loss of trees could enable views not currently possible. As this aspect of the effects of climate change is uncertain, it is difficult to predict the significance of effect. Where there are known issues such as ash die back, where trees loss is likely to increase in the future, mitigation through new proposed planting in the form of native species mixes has avoided selection of vulnerable species like ash to avoid a reduction in visual screening which may occur.

5.9 Cumulative Effects

5.9.1 This section sets out the potential cumulative effects which may arise as a result of the development proposal.

5.9.2 A cumulative assessment considers the cumulative effects of multiple schemes upon the landscape fabric, landscape character and visual amenity.

5.9.3 It is acknowledged that wherever more than one development is visible at any given location in the landscape, there will be a greater overall or cumulative effect on landscape character than if just one development was visible in the landscape. Likewise, it is acknowledged that the more developments that are constructed in any given landscape, the greater the magnitude will be of overall (or combined) change to the landscape character that was present prior to the introduction of the development.

5.9.4 However, it is also noted that in any given landscape where developments of this type are already present the combined effect on landscape character of introducing further development may not be as significant as the initial introduction of the initial development due to a diminished affect caused by the existence of development within the baseline. Furthermore, the greater the amount of development in the baseline landscape the less significant the addition may be of further development on landscape character, as the landscape will be more heavily characterised by development in the baseline situation.

5.9.5 The methodology for the assessment of cumulative effects is essentially the same as for the assessment of the primary landscape and visual effects, in that the level of landscape and visual effect is determined by assessing the sensitivity of the landscape or visual receptor and the magnitude of change. The cumulative assessment, however, considers the magnitude of change posed by multiple developments.

5.9.6 A cumulative landscape or visual effect simply means that more than one type of development is present or visible within the landscape. Other forms of existing development and land-use such as woodland and forestry, patterns of agriculture, built form, and settlements already have a cumulative effect on the existing landscape that is already accepted. These features often contribute strongly to the existing character, forming a positive or adverse component of the local landscape. Landscapes however, will have a finite ability to accommodate cumulative developments, beyond which further new development would result in landscape character change and could result in the creation of a 'new landscape' where development rather than the existing land use pattern has become the dominant characteristic.

5.9.7 This assessment distinguishes between 'additional' cumulative effects that would result from adding the development to other cumulative developments and 'combined' cumulative effects that assess the total cumulative effect of the development and other cumulative developments. In the latter case a significant cumulative effect may result from the development or one of more other existing, under-construction or consented applications, or initial site allocations for the emerging new Vale of Glamorgan Local Plan – referred to as 'Candidate Stage 1 Sites'

5.9.8 The low intervisibility and distance that the development would be visible with the surrounding landscape character areas – has led to the conclusion that a 5km buffer study area is appropriate.

5.9.9 Types of cumulative effect are defined as follows:

- **Cumulative Landscape Effects:** Where more than one development may have an effect on a landscape designation or particular area of landscape character as define by LANDMAP Aspect Areas;

- **Cumulative Visual Effects:** the cumulative or incremental visibility of similar types of development that may combine to have a cumulative visual effect. These can be further defined as follows:
 - Simultaneous or combined: where two or more developments may be viewed from a single fixed viewpoint simultaneously, within the viewer's field of view and without requiring them to turn their head;
 - Successive or repetitive: where two or more developments may be viewed from a single viewpoint successively as the viewer turns their head or swivels through 360°; and
 - Sequential: where a number of developments may be viewed sequentially or repeatedly at increased frequency, from a range of locations when travelling along road, Sustrans national or regional cycle route or promoted long distance route within the LVIA Study Area.

5.9.10 The cumulative schemes within the 5km study area, are listed and assessed in combination with the Proposed Development.

Table 5.7 Cumulative Scheme Assessment

Cumulative Development & Status	Distance from the Site	Potential effects
Cumulative Schemes		
Ref: 2022/00733/FUL LAND NORTH OF THE RAILWAY LINE, RHOOSE	Approx. 726m to the south west	<p>Short Description: Proposed development of 247 homes on land north of the railway line, Rhoose. ZTV modelled on typical house height of 9m</p> <p>Landscape resources and receptors: This cumulative housing scheme lies some 726m to the south west of the development at Model Farm. It lies within the same Visual and Sensory LANDMAP Aspect Area – The Rhoose Hinterland Aspect Area (VLFGLVS641) and same LCA, 26 - Rhoose and Porthkerry Hinterland. This cumulative scheme is on the southeastern edge of Rhoose. The two schemes are separated by Cardiff International Airport, which is classified as a separate Visual and Sensory Aspect Area and also classified as LCA 18 - Cardiff International Airport. The open and elevated nature of the airport provides strong separation between the two developments. Together these two proposed developments would increase the perception of a developed landscape in this part of the Aspect Area and LCA. This would result in a discernible change to the landcover from fields to development, locally but as a proportion of the whole Aspect Area and LCA the change would be low to medium.</p> <p>The cumulative effect would be Minor to Moderate adverse within the host Aspect Area VLFGLVS641 Rhoose Hinterland and LCA 26 - Rhoose-Porthkerry Hinterland, which are judged to be of Medium sensitivity.</p>

Cumulative Development & Status	Distance from the Site	Potential effects
		<p><u>Viewpoint receptors cumulative effects :</u></p> <p>Figure 5.CA-2.1 shows the combined ZTV of the Proposed Development and this cumulative scheme. The cumulative ZTV, together with fieldwork indicates that, none of the representative viewpoints would experience combined cumulative visual effects. This is due to the intervening elevated topography of Cardiff airfield and vegetation. There would therefore be no direct cumulative landscape effects as a result</p> <p><u>Dynamic receptors cumulative effects</u></p> <p>Main road visual receptors travelling along Port Road (A4226) and turning onto Porthkerry Road and then onto Pentir y De road would experience sequential visual effects. However, the change on these Medium sensitivity road user receptors would be small given the context of existing development of Barry, Cardiff airport and Porthkerry and piecemeal development between these developments along these roads. There would be a mostly discernible to slight increase in the perceived level of built development which would only be at slight variance with the existing views along these roads. Therefore, the cumulative effect on these dynamic sequential receptors would be Moderate adverse at worse where views of the developments are more exposed to these road receptors but mostly the effects would be Minor, which is not significant</p> <p>The existing PRoW network does not directly link the two schemes and there are no locally promoted walking trails which would experience views of both schemes sequentially. Therefore, the overall cumulative effect on these dynamic sequential receptors would be Negligible, which is not significant.</p> <p>Rail users, which are considered to be of Medium sensitivity, would have a brief glimpse of the Model Farm development from the Porthkerry viaduct and then glimpsed views of this Cumulative Scheme, approximately 1.7km later. There would be a very slight increase in the perceived level of built development which would only be at slight variance with the existing views along the whole length within the Study Area. Therefore, the cumulative effect on these dynamic sequential receptors would be Negligible, which is not significant.</p>

Cumulative Development & Status	Distance from the Site	Potential effects
Ref Site 361 Stage 1 Candidate Site: LAND AT PORT ROAD, RHOOSE	Approx 15m to the north	<p>Short Description: Vale of Glamorgan Council list of Stage 1 Candidate Site - proposed use 'Other Proposed Use', 2.67ha, between, immediately north on the opposite side of Port Road, the Proposed development. ZTV modelled on typical house height of 9m as no information available on development type.</p> <p>Landscape resources and receptors: This cumulative housing scheme lies adjacent to the northern boundary of the development at Model Farm, on the opposite side of Port Road. It lies within the same Visual and Sensory LANDMAP Aspect Area – The Rhoose Hinterland Aspect Area (VLFGLVS641) and same LCA, 26 - Rhoose and Porthkerry Hinterland. This cumulative scheme is on previously developed land, between the airport and Barry. The two schemes are separated by the main A4226 Port Road. The roadside hedgerow and trees provide strong visual separation between the two developments. Together they would alter the land use in this part of the Aspect Area and LCA. This would result in a slight change to the landcover from fields on Model Farm and intensification of development land use on the Cumulative Scheme site, locally but as a proportion of the whole Aspect Area and LCA the change would be low. The cumulative effect would be Minor adverse within the host Aspect Area VLFGLVS641 Rhoose Hinterland and LCA 26 - Rhoose-Porthkerry Hinterland, which are judged to be of Medium sensitivity</p> <p>Viewpoint receptors cumulative effects: Figure 5.CA-2.2 shows the combined ZTV of the Model Farm development and this Cumulative Scheme. There would be a similar level of effect on the near distance visual receptors 1 to 8 as identified in the LVIA, with a slight increase in adverse combined in succession visual effects from viewpoint 3 and 4 and combined in combination within 90 degree field of view at viewpoints 2, 2 and 5, in the short term. However, structure buffer planting around the Model Farm development will have matured by Year 10 and although the views will be more foreshortened than the baseline situation the visual effect would be reduced and noticeable but not out of character and Minor to Moderate adverse at worse at these viewpoints.</p> <p>Dynamic receptors cumulative effects The cumulative effects are combined rather than sequential for this Cumulative Scheme as described above from main road visual receptor viewpoints travelling along Port Road (A4226).</p>

Cumulative Development & Status	Distance from the Site	Potential effects
<p>Ref: 2024/00329/FUL (202200660/SC1) Cardiff and Vale College Advanced Technology Centre at Cardiff Airport</p>	<p>Approx 10m to the north west</p>	<p>Short Description: Proposed development of an Advanced Technology Centre campus development. The site forms part of St Athan-Cardiff Airport Enterprise Zone in adopted LDP (Policy SP2). It lies to the north of Port Road immediately opposite the development at Model Farm ZTV modelled on estimated height of 15m.</p> <p>Landscape resources and receptors: This cumulative technology college scheme lies opposite the northwestern boundary of the development at Model Farm, on the opposite side of Port Road. It lies within the same Visual and Sensory LANDMAP Aspect Area – The Rhoose Hinterland Aspect Area (VLFGLVS641) and same LCA, 26 - Rhoose and Porthkerry Hinterland. This cumulative scheme is on land with arable fields and tree/scrub, between the airport and Barry. The two schemes are separated by the main A4226 Port Road. The roadside hedgerow and trees provide strong visual separation between the two developments. Together the schemes would alter the land use in this part of the Aspect Area and LCA from farmland to similar building form and land use as one another. It would not be dissimilar to other light industrial / business use building forms in the close vicinity associated with the Airport Business Park. It would result in a slight change as a proportion of the whole Aspect Area and LCA therefore the change would be low.</p> <p>The cumulative effect would be Minor adverse within the host Aspect Area VLFGLVS641 Rhoose Hinterland and LCA 26 - Rhoose-Porthkerry Hinterland, which are judged to be of Medium sensitivity</p> <p>Viewpoint receptors cumulative effects: Figure 5.CA-2.3 shows the combined ZTV of the Model Farm development and this Cumulative Scheme. There would be a similar level of effect on the near distance visual receptors 1 to 8 as identified in the LVIA, with a slight increase in adverse combined in succession visual effects from viewpoint 3 and 4 and combined visual effects within 90-degree field of view at viewpoints 2 and 5, in the short term. However, structure buffer planting around the Model Farm and Cumulative Development as indicated in the pre-application designs for Advanced Technology Centre, will have matured by Year 10 and although the views will be more foreshortened than the baseline situation the visual effect would be reduced and noticeable but not out of character and Minor to Moderate adverse at worse at these viewpoints.</p> <p>Dynamic receptors cumulative effects The cumulative effects are combined rather than sequential for this Cumulative Scheme as described above from main road visual receptor viewpoints travelling along Port Road (A4226).</p>

Ref DNS/3273713 Pen-Onn Solar Farm	Approx 2.25km to the west north west	<p>Short Description</p> <p>Erection of Solar Farm (48 MW) and associated works, which lies to the northwest of the Proposed Development. ZTV modelled on estimated height of 3.5m for field solar panels.</p> <p>Landscape resources and receptors</p> <p>This Cumulative Scheme lies within a different landscape character area - LCA 22 Central Vale Ridges and Slopes and visual and sensory aspect area, VLFGVS146 to the Model Farm development. The Cumulative Development site is on a low shallow east west ridge. The two schemes are separated by Port Road and the B4265 and a largely rural landscape, with existing trees, woodland and hedges and wooded valley associated with the Kenson River.</p> <p>This Cumulative scheme is located at approximately between 50 and 60m AoD and similar in elevation to the application site. The Cumulative Scheme together with the Model Farm development would increase the perception of a very slightly more developed landscape within the 5km radius study area. This would result in slight discernible change, albeit new land uses of a business park and solar farm instead of fields locally. but as a proportion of the whole Aspect Area and LCA the change would be Low and effect Minor.</p> <p>Viewpoint receptors cumulative effects:</p> <p>Figure 5.CA-2.4 shows the combined ZTV of the Model Farm development and this Cumulative Scheme. It indicates there would be a similar level of effect on the near distance visual receptors 1 to 8 and 14 and 15 as identified in the LVIA. Field work has shown that the solar farm fields are not be visible from these locations. There would likely be greater effects - moderate and minor adverse combined in succession effects, from viewpoints 12 and 13 attributable to the close proximity of the Cumulative Scheme.</p> <p>Dynamic receptors cumulative effects</p> <p>Main road visual receptors travelling along Port Road (A4226) would not experience sequential visual effects. However, a journey from Lancarfan to Barry and vice a versa using the A4226 and local road network would include views of both schemes. However, the change on these Medium sensitivity road user receptors would be small given the glimpsed occasional views, separated by about 4 to 5km. The visual experience would include a mixture of rural fields but often within the context of existing development of the edge of Barry, Cardiff airport and Penmark and piecemeal development between these developments within the Study Area. There would be a very slight increase in the perceived level of built development which would only be at slight variance with the existing views along these roads. The cumulative effect on these dynamic sequential receptors would be Minor adverse at worse, which is not significant.</p>
---	--------------------------------------	--

Cumulative Development & Status	Distance from the Site	Potential effects
		<p>The existing PRoW network does not directly link the two schemes which would experience views of both schemes sequentially. Therefore, the cumulative effect on these dynamic sequential receptors would be Negligible to No Change, which is not significant. The Valeways Heritage Millennium Trail (VHMT) is a locally promoted trail which stretches from the coastline at Rhoose, northwards through the study area, adjacent to the western edge of the Cumulative Scheme. The adverse visual effects on this linear receptor would be mostly due to the Cumulative Scheme and Minor to Negligible adverse overall.</p> <p>The Cumulative Scheme would not be seen by rail users, which are considered to be of Medium sensitivity. They would have a brief glimpse of a small part of the Proposed Development from the Porthkerry viaduct. There would be a very slight increase in the perceived level of built development which would only be at slight variance with the existing views along the whole length within the Study Area. Therefore, the cumulative effect on these dynamic sequential receptors would be Negligible, which is not significant.</p>

CAS-01391-M3G6Q9 Fonmon solar	2.5km to the west	<p>Short Description</p> <p>Erection of Solar Farm (35 MW) and associated works, which lies to the northwest of the Proposed Development. ZTV modelled on estimated height of 3.5m for field solar panels.</p> <p>Landscape resources and receptors</p> <p>This Cumulative Scheme lies within the same landscape character area - LCA 26 Rhoose Porthkerry Hinterland and visual and sensory aspect area, VLFGVS641 to the Model Farm development. The Cumulative Development site is on a low shallow east west ridge. The two schemes are separated by Cardiff Airport – which is on slightly higher ground. Although the Cumulative Scheme is a solar farm and a different type of development, together with the Model Farm development they would increase the perception of a very slightly more developed landscape within the 5km radius study. This is in a part of the character area which has settlement fringe characteristics rather than rural farmland. The developments would result in slight discernible change, albeit new land uses of a business park and solar farm instead of fields locally but as a proportion of the whole Aspect Area and LCA the change would be Low and effect Minor.</p> <p>Viewpoint receptors cumulative effects:</p> <p>Figure 5.CA-2.5 indicates the potential for combined in combination and in succession from viewpoints 13 and 14. There would be a similar level of effect on these visual receptors, Negligible and Minor respectively as identified in the LVIA. There would be a slight increase in adverse combined in succession visual effects from viewpoint 13 and Minor adverse at worse, due to the proximity of the Cumulative Scheme. As the structure buffer planting around the application site matures this part of the view would appear more wooded from these viewpoints by year 10.</p> <p>Dynamic receptors cumulative effects</p> <p>Main road visual receptors travelling along Port Road (A4226) and turning onto Porthkerry Road and travelling through Rhoose before turning north to Fonmon and the junction with the B4265 past the Cumulative Scheme development would experience sequential visual effects. However, the change on these Medium sensitivity road user receptors would be small given the context of existing development of Barry, Cardiff airport and Rhoose and piecemeal development between these developments along these roads within the Study area. Overall, there would be a slight increase in the perceived level of built development which would only be at slight variance with the existing views along these roads. The cumulative effect on these dynamic sequential receptors would be Moderate adverse at worse where views of the developments are more exposed to these road receptors but mostly the effects would be Minor adverse, which is not significant.</p>
--	-------------------	--

Cumulative Development & Status	Distance from the Site	Potential effects
		<p>The existing PRoW network does not directly link the two schemes which would experience views of both schemes sequentially. Therefore, the cumulative effect on these dynamic sequential receptors would be Negligible to No Change, which is not significant. The Valeways Heritage Millennium Trail is a locally promote trail which stretches from the coastline at Rhoose, northwards through the study area, adjacent to the Cumulative Scheme. The adverse visual effects on this linear receptor would be mostly due to the Cumulative Scheme and Minor adverse overall.</p> <p>The Cumulative Scheme would not be seen by rail users, which are considered to be of Medium sensitivity. They would have a brief glimpse of the Model Farm development from the Porthkerry viaduct. There would be a very slight increase in the perceived level of built development which would only be at slight variance with the existing views along the whole length within the Study Area. Therefore, the cumulative effect on these dynamic sequential receptors would be Negligible, which is not significant.</p>

5.9.11 There would be no significant adverse cumulative effects when assessing the Model Farm development together with each of the individual Cumulative Schemes above.

Consideration of other Potential Cumulative Schemes

5.9.12 There are several Cumulative Schemes which have been listed in the 'Compiled Cumulative Assessment' but are considered not to result in significant effects. These include:

- i. The Mole, Barry 2023/00051/HYB
- ii. The Port of Barry Candidate Site 554
- iii. Docks Office, Subway Road, Barry
- iv. Aberthaw Power Station Candidate Site 433
- v. Land between Aston Martin Lagonda and taxiway echo, (Keithrow), Bro Tathan, Business Park, St. Athan 2019/01260/HYB
- vi. Land North of Ffordd Bro Tathan, St Athan

5.9.13 Sites i to iii are located within Barry – close to or around the dock area. They are located within the townscape setting of Barry docks, and visually removed and separate from the Model Farm development and the host LCA 26 Rhoose Porthkerry Hinterland and The Rhoose Hinterland Aspect Area (VLFGLVS641). Consequently, none of the key characteristics or landscape qualities would be adversely affected. There would be no simultaneous / combined or successive / repetitive visual effects from the selected viewpoint receptors. Therefore, these cumulative schemes are not considered further in this assessment.

5.9.14 The proposed Aberthaw Power Station site is located over 3.8km to the west of the development at Model Farm. The intervening topography and land cover provide good separation between the Model Farm development and this Cumulative Scheme which is located in the adjoining

landscape character LCA4 Thaw Estuary are distant visual and sensory aspect area VLFGVS569. There would be no simultaneous / combined or successive / repetitive visual effects from the selected viewpoint receptors of this Cumulative Scheme. Therefore, it is not considered further in this assessment.

5.9.15 The two Cumulative Schemes near St Athan fall outside the 5km radius Study Area. Additionally, the sites cannot be seen simultaneously / in combination or successively / repetitively from the selected viewpoint receptors with the Proposed Development at Model Farm. Therefore, these cumulative schemes are not considered further in this assessment.

Cumulative effects of all the Schemes and the Proposed Scheme combined

Landscape resources and receptors

5.9.16 All the Cumulative Schemes are located in the southern part of the study area which has more existing development than the north. Together with Cardiff Airport the baseline landscape in this part of the Visual and Sensory Aspect Area VLGLVS641 and LCA26 Rhoose Porthkerry Hinterland has a developed and settlement fringe character, although there are some areas which are farmland - these are in the context and setting of existing surrounding development. Visual and Sensory Aspect Area VLGLVS641 is 819ha and LCA26 Rhoose Porthkerry Hinterland is 935ha. The total area of all the Cumulative schemes is 122ha. The area of the Application site that is proposed to be developed at Model Farm is 45.2ha (although the Application Site Boundary is 93.2ha including the proposed Country Park extension). Combined they would form 18% of the total area of the host LCA 26. Although much of this LCA is not developed it contains the settlements of Porthkerry and Rhoose.

5.9.17 The cumulative landscape change for the Cumulative Schemes that form this assessment would be Low to Medium, with the Model Farm development having a moderate influence due to its size in comparison with the others. The overall effect would be **Moderate adverse**. When all the Cumulative Schemes and Model Farm development are considered together the change would be Medium and the overall effect **Moderate adverse**, which is not significant. The Model Farm development is one of the largest schemes in area but is in close proximity to other existing developments e.g. Cardiff Airport and business park. The undulating landscape which is characteristic of the area and the existing trees and hedgerows which would be retained, contain the Model Farm development within a relatively small part of the LCA and Visual and Sensory Aspect Area and break up the potential visual extent of the developments. In the long term as the new planting which forms part of the development matures the built form will be less prominent and the effects would be reduced.

Viewpoint receptors cumulative effects

5.9.18 ZTVs for the individual Cumulative Schemes with the Model Farm development have been produced. Combining all the ZTVs on one figure would produce a confusing image. However, the ZTVs suggest that most combined intervisibility occurs within 2km of the Model Farm development and mostly from viewpoints to the north and west. There is very little combined intervisibility with visual receptors on the coast at viewpoints 9, 10 and 11. The combined cumulative effects would be similar to those judged for the Model Farm development. Viewpoints 3, 4, 14 and 15 would experience slightly greater visual effects when considered with the cumulative schemes particularly Land North of the Railway – Rhoose, Cardiff and Vale College Advanced Technology Centre and Candidate Site 361. The undulating and wooded character of the area help to divide up and separate areas in which the Cumulative Sites are located, so as there are no vantage points where all the schemes can be seen together. Viewpoints 13 and 14

would be affected most by the Pen-Onn solar development DNS_3273713. The Model Farm development would not alter the magnitude of change from these viewpoints significantly.

Dynamic receptors cumulative effects

5.9.19 The dynamic receptors that would experience the greatest changes to views are those travelling along Port Road / A4226 from the western edge of Barry to the roundabout to the east of Cardiff Airport and then following Porthkerry Road to Rhoose. The sequential changes to views would be most affected by the Model Farm development and Cumulative Schemes which adjoin these main roads; Candidate Site 361 and Land North of the railway line, Rhoose. Although no more than two of these potential developments would be seen together, there would be a noticeable increase in the amount of development and noticeable reduction in the amount of farmland. Initially and without the mitigating effects of new screen and buffer planting the change would be at odds with the existing views. However, it is unlikely that this scenario of proposed developments would occur. As new planting would be an integral part of these developments, as it matures it will soften the changes and would bring more enclosed views by vegetation to these road receptors in places where these developments occur. Overall, the visual effect would be **Moderate adverse** initially, reducing to **Minor adverse** in the long term.

5.9.20 The existing PRoW network does not directly link the Cumulative Schemes. Therefore, the cumulative effect on these dynamic sequential receptors would be **Negligible adverse to No Change**, which is not significant. The Valeways Heritage Millennium Trail is a locally promoted trail which stretches from the coastline at Rhoose, northwards through the study area, adjacent to some of the Cumulative Schemes. The adverse visual effects on this linear receptor would be mostly due to Land North of the railway line, Rhoose rather than the Model Farm development, which is only partially visible from western side of Cardiff Airport and **Minor adverse** at worse for short sections where it passes close to Cumulative Schemes Site Land North of the railway line, Rhoose but mostly **No Change** along its length.

Summary and Conclusion

5.9.21 This chapter of the ES presents the results of the EIA for the potential landscape and visual impacts that relates to the construction of a business park and associated infrastructure on allocated land known as Parc Busnes Porth Cymru on c.87ha of farmland which includes a 42ha extension to Porthkerry Country Park on land at Model Farm, Port Road, Rhoose. The land forms part of the St Athan – Cardiff Airport Enterprise Zone as identified within the Vale of Glamorgan Local Development Plan (LDP). It forms part of land allocated for employment use under Policies SP2, MG9 & MG10 of the LDP. Policy MG28 also refers to the allocation of a portion of the land for an extension to Porthkerry Country Park.

5.9.22 The application site does not form part of any statutory landscape designations and there are no nationally designated landscapes within the 5km study area. It is situated less than 100m south of the locally designated and non-statutory Nant Llancarfan Special Landscape Area (SLA) at its closest point in the northeast of the application site. Porthkerry Country Park which is also locally designated as a Green Wedge in the LDP forms most of the southern boundary of the application site.

5.9.23 Analysis of the LANDMAP Aspect Areas reveal that the application site lies outside the SLA designations. Any potential adverse effects on landscape character within the Nant Llancarfan SLA in the wider landscape to the north east is likely to be very localised due to limited inter-visibility. The primary landscape qualities of the 5 Aspect Areas within the ZTV are maintained and respected.

5.9.24 The land use of the application site would change from one of agriculture to one of development for mixed business use, comprising small business units (B1), industrial use (B1), general

industrial use (B2), storage (B8), associated access infrastructure and landscape/ ecological mitigation.

- 5.9.25 The development proposal would fit within and respect the existing field boundaries. The layout has been designed to retain the existing green infrastructure and the combination of the retention of the existing woodland, trees and field boundary hedgerows, together with the creation of new areas of woodland, scrub and rough grassland, would result in a longer-term benefit for both the application site and the surrounding landscape, especially along the boundary with the land to be transferred to extend Porthkerry Country Park.
- 5.9.26 There would be some loss of vegetation to accommodate the north east access along Port Road and the internal spine road, however this loss will be mitigated by the introduction of extensive areas of new native planting along the eastern boundary and elsewhere on the application site.
- 5.9.27 The development proposal would generally follow the contours of application site respecting the topography which would remain largely intact except at a local level where remodelling will be required for site access roads, attenuation areas and localised regrading to create level platforms for the buildings. Consequently, the landscape pattern and complexity would not change extensively as a result of the development proposal.
- 5.9.28 There is very limited inter-visibility with the lower-lying local coastal settlements of Barry and Rhoose as the site benefits from a high level of visual containment created by the surrounding landscape, which arises from a combination of undulating topography and landscape components including established blocks and belts of woodland limiting the effects on visual amenity from the surrounding area.
- 5.9.29 Cardiff Airport and its associated infrastructure is a dominant built element and a major detractor in the local host landscape. This complex is already visible when looking towards the application site from the fifteen representative viewpoints analysed as part of this study.
- 5.9.30 Of the sixteen representative viewpoints, 1 to 6 are local views which would undergo Substantial or Major effects on visual amenity as a result of the development proposal at Year 1 reducing in impact at Year 10 to Moderate or Minor when the mitigation planting has matured. It should be noted that all of these impacts are localised which is a predicted result of any type of development. Viewpoints 9 to 15 are medium and long range and would undergo Minor or Negligible effects on visual amenity, demonstrating there would be limited impacts on the wider landscape visual context including Nant Llancarfan SLA.
- 5.9.31 Consequently, there are a very limited number of visual receptors that would undergo the highest effects. These are limited to those in the immediate vicinity of the application site, namely residents living in the private residences associated with Upper and Lower Porthkerry Farm, Welford Farm private residences, walkers using the short section of PRoW P4/17/1 as it crosses the open field to the north east of the application site and road users along short sections of Porthkerry Road and Port Road adjacent to the site boundaries. The proposal would appear as a prominent new element within localised views but not to such an extent that it prevents receptors enjoying wider views to the expansive landscape setting in which the proposal would be seen.
- 5.9.32 Landscape mitigation measures including extensive woodland belts, tree and hedge planting are proposed along the southern boundary in association with the new attenuation areas and will create screening of the development proposal from views in from the south, Porthkerry Road and the residential properties associated with Upper and Lower Porthkerry Farms along the western boundary. Furthermore, a new belt of native woodland will be implemented along a section of the north eastern boundary to soften views in from the adjacent PRoW and the residential properties associated with Welford Farm complex. The proposed 42ha extension to

the very well used Porthkerry Country Park will benefit the communities within the settlements close by as well as the wider community within the Vale.

- 5.9.33 There are no significant adverse cumulative effects. The cumulative landscape change for the sites 'in planning' and 'consented' would be Low to Medium, with the Model Farm development having a moderate influence due to its size in comparison with the others. The overall effect would be Moderate adverse.
- 5.9.34 It is acknowledged that with delivery of this development, as with any type of development, it will give rise to change in the landscape character of the application site itself and to the views of people overlooking, visiting or walking through the localised area. However, the extent of change has been minimised through careful/sensitive design and well placed mitigation will influence to ensure that the landscape and visual impacts judgement will need to be outweighed against the benefits delivered by the development proposal.

References

- Guidelines for Landscape and Visual Impact Assessment, second edition, Landscape Institute and Institute of Environmental Assessment.
- GLVIA3 (2013). Guidelines for Landscape and Visual Impact Assessment, Third Edition Landscape Institute and the Institute of Environmental Management and Assessment.
- GLVIA3 Statement of Clarification 1/13.
- Natural England (2014). An Approach to Landscape Character Assessment.
- Natural Resources Wales (2016). LANDMAP Methodology "Visual and Sensory".
- Natural Resources Wales (2017). National Landscape Character Areas
- Natural England, Scottish Natural Heritage and the Countryside Council for Wales (2011). Landscape Character Assessment, Guidance for England, Scotland and Wales (consultation draft). Natural England, Scottish Natural Heritage and Countryside Council for Wales