
**LANDSCAPE AND VISUAL IMPACT
ASSESSMENT**

ENERGY RECOVERY FACILITY

**LAND OFF NEWLANDS ROAD,
WENTLOOG, CARDIFF**

Client:

MÔR HAFREN BIO POWER LIMITED

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APPENDICES

Drawing Name:

Site Context Plan (GPP)

Site Location Plan (GPP)

Site Layout (GSDA)

Building Elevations

Drawing Reference:

GPP/Cog/WC/19/01 Rev 1

GPP/Cog/WC/19/02 Rev 1

1383 PL101 Rev A

1383 PL300 to 314 Rev -
1383 PL201 and PL312 Rev A

ALD DRAWINGS

Site Location Plan

ALD837 / LD1000 RevP01

Transport (Rivers and Major Transport Routes)

ALD837 / LD1001 RevP01

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ALD837 / LD1002 RevP01

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ALD837 / LD1003 RevP01

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ALD837 / LD1004 RevP01

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ALD837 / LD1034 – 1052 RevP01/2

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Photomontage Proposed Viewpoint 17

ALD837 / LD1058 RevP01

REVISION & REVIEW RECORD

Revision details

Rev	Date	Amendment	Creator	Checked
P01	25.10.2019	First issue for initial review and comment.	CB	KmJ
P02	02.03.2020	Confirmation of scheme description and addition of winter time assessment	TR	CB
P03	16.04.2020	Changes following client comments	TR	CB
P04	20.05.2020	Changes following client comments	TR	CB
P05	21.05.2020	Changes following client comments	TR	CB
P06	01.06.2020	Minor changes and clarification following client comments	TR	KmJ
P07	10.06.2020	Changes to the naming of Reynold Couplings and clarification of wording in paragraph 5.1.6	CB	KmJ
P08	26.08.2020	Changes to 4.7.1, 4.8.4 and Table 9	CB	KmJ

Review record

Rev	Date	Reviewers comments or page references	Initials / organisation
P03	16.04.2020	Team review of the whole document, minor changes following client comments	MD - GPP
P04	20.05.2020	Team review of the whole document, minor changes following client comments	MD - GPP
P06	01.06.2020	Team review of the document to confirm the use of urban 'terms' minor changes required	MD - GPP
P07	10.06.2020	Final read through noticed neighbouring property has been incorrectly identified.	MD - GPP
P08	26.08.2020	Changes to naming of reen / ditch 4.7.1, 4.8.4 and Table 9	MD - GPP

INTRODUCTION

ONE

1.1 Appointment and Brief

1.1.1 Applied Landscape Design was appointed by Môr Hafren Bio Power Limited in March 2019, to carry out a Landscape and Visual Impact Assessment for the land within the industrial area located at Newlands Road, Wentloog, Cardiff with a view to understanding how it is visually placed within the landscape and enable recommendations on how the proposed new Energy Recovery Facility (ERF) and the associated infrastructure should be implemented and integrated into the landscape.

1.1.2 Applied Landscape Design is also a registered practice of the Landscape Institute.

1.2 The Site / Ownership Extent

1.2.1 The site is located to the west of Newlands Road (nearest postcode CF3 2EU), that is the main spine road for Wentloog Corporate Park. The site is on the outside of a large curve in the road. To the east of the site is Reynold Couplings, to the south is an area of mature trees and scrub beyond Newlands Road, to the West is Pinewood Studio Wales and to the north is the South Wales mainline railway between Cardiff and London. The overall site comprises an area of approximately 1.67ha of previously developed land. Access to the site is gained via the existing road system with Newlands Road accessed from Wentloog Avenue (B4239), refer to drawing ALD837/LD1008 RevP01.

1.2.2 The proposed development site occupies an almost square area of land with access gained from 2 points off a side road off Newlands Road, this side road also supports access to Reynold Couplings. The site is brownfield and has been previously developed. It is currently being used as informal grazing without the landowner's permission. It is bordered with mature to semi mature vegetation to the west along the drainage ditch. The northern boundary is open onto the South Wales mainline railway, to the east and south bunds form the boundary, these are overgrown with brambles and other lower vegetation. From within the site there are long views to the north / northwest towards Rumney and Trowbridge, to the east and south there are short range views mainly towards other developments along Newlands Road and the Industrial estates along Wentloog Avenue (B4239) beyond. A drainage ditch runs along the western boundary of the site and links in with the wider network of local drainage routes and pools. These features are identified on drawing ALD837/LD1008 RevP01 with supporting images of the site on ALD837/LD1011 RevP01.

1.2.3 The site is generally flat at approximately 5-7m AOD with localised bunding at 7-7.5m to the east and south to prevent access, to the west where the drainage ditch runs in a north to south direction, the site falls away to 4.5m. See drawing ALD837/LD1011 RevP01 for photos of the site.

1.2.4 Planning permission was granted in 2009 on the same site for the construction of an (200,000tpa) integrated waste management facility incorporating autoclave technology, materials recycling and combined heat and power generation, ancillary offices and weighbridge office, and associated roads, car parking and landscaping (planning reference 09/00246/E).

1.3 The Study Area

1.3.1 The Landscape and Visual Impact Assessment zone is illustrated on drawing ALD837/LD1000 RevP01 and can be found in the Appendices to the back of this document.

1.3.2 The study area comprises an area within a circa 5km radius from the site within which the visibility of the site is assessed. 5km was defined as the outer limit for the assessment even though the development will be seen beyond this limit, it has been assumed that the effects will be not significant beyond this limit, as the development will blend into the background of any view beyond the 5km as this assessment will set out.

1.3.3 The study area comprises an area within a 5km radius from the development site and extends:

- To the north – the village of Cefn Mably
- To the east – the village of St Brides Wentlooge
- To the south – The River Severn Estuary
- To the west – The centre of Cardiff, specifically Cathays and Roath Park

1.4 Proposed Scheme

1.4.1 The proposed development is described as:

“an Energy Recovery Facility (ERF), fuelled by residual waste (i.e. predominantly commercial and industrial waste remaining post treatment and destined for landfill), to provide electricity to the local area via the National Grid and has the potential to provide heat to adjacent developments.”

1.4.2 The proposed buildings within the development plot comprise:

- The tipping hall, fuel bunker, process buildings (boiler and turbine halls, and stack
- Air-cooled condensers;
- Flue gas treatment plant;
- Residue silos;
- Firewater tanks;
- Office and weighbridge;
- The proposed ERF will have an approximate output rating comprising approximately 15MW electrical.

1.4.3 The heights of the respective components of the built development are:

- Turbine 20m
- Air-cooled Condensers 20.74m
- Waste Bunker 37.5m
- Boiler Parapet 46.45m
- Stack 70m

- 1.4.4 The proposed building pattern / design in elevational and visual representations adopts what's been termed 'bird's nest' and are shown on the submitted drawings. The design uses fractured and coloured panels that take a triangular form. Different variations of green colour and along with the angular pattern of the design seek to break up the mass of the building, and is designed to blend with the predominant colour palette of the building's surroundings. At the higher levels the colouring is blended to the paler colouring of the sky and estuary in the background, at the lower levels it is darker more akin with the industrial units a local vegetation.
- 1.4.5 There are two access points onto site, the first access to the site is gained directly off Newlands Road, the second is off a small side road in the northern corner of the site. The building will sit central to the plot, with an internal haul road external to but within the site boundary.
- 1.4.6 Provision is included for 12 car parking spaces and 2 accessible spaces, in the northern part of the site, to the south of the railway line
- 1.4.7 The facility would operate continuously, 24 hours per day and 7 days per week, with approximately 25 staff on a 3-shift system, however feedstock deliveries and materials removal would be restricted to times between 7.00am to 6.00pm Monday to Friday and 7.00am to 1pm Saturdays.
- 1.4.8 The site is proposed to be surrounded by fencing around the perimeter, thereby enhancing safety and security.
- 1.4.9 It is anticipated that most of the time there will be a basic level of illumination comparable to modern street lighting during the night, it is envisaged there will be up to three kinds of lighting:
- Safety and security lights: on all the time during night;
 - Area specific lights: they will turn on as and when needed;
 - Emergency lighting: would only come on when the normal lighting would completely fail.
- 1.4.10 The ditch on the western boundary is to remain, as will its existing vegetation to leave this boundary green. It is also proposed that the northern and southern boundaries will be greened with a slim band of vegetation as space allows.
- 1.4.11 It is anticipated that construction will commence in Spring 2021 and will take place over a period of 36 months with completion estimated by Spring 2024.
- 1.4.12 The plant would be expected to operate for the next 25 years at the end of which it would be decommissioned safely. The hardstanding could be broken up and recycled, used again in future developments.

1.5 Scope of Assessment

1.5.1 This LVIA report is split into nine sub-sections;

- This first section provides an introduction to the assessment.
- The second section sets out the landscape and visual policy context for the scheme.
- The third section describes the assessment methodology that has been adopted and the consultation that has been carried out in relation to landscape and visual issues.
- The fourth section consists of a landscape baseline study for the existing site and its surroundings. This breaks the landscape down into component parts, making it easier to understand and identify any elements or features that might be particularly sensitive to the proposed development.
- The fifth section consists of a visual baseline study for the existing site and its surroundings. This highlights locations sensitive to development and is presented as viewpoints located at different points throughout the study area along with a brief explanation of their existing status quality.
- The sixth section sets out the potential landscape and visual impacts that the scheme could have without any mitigation, including construction phase landscape and visual effects and potential effects on the completion of the scheme.
- The seventh section describes the landscape and visual mitigation measures that are either inherent to the scheme (design developed during the EIA process) or additionally proposed.
- The eighth section provides an assessment of the cumulative landscape and visual effects of the application scheme and other associated development proposals in the vicinity.
- The ninth section is a summary of all conclusions and recommendations.

LEGISLATION

TWO

2.1 Introduction to Planning Context Analysis

- 2.1.1 This section briefly outlines planning issues specifically relevant to landscape matters within the general study area and site. Specific reference should be made to drawings ALD837/LD1003 RevP01 Surrounding Site Context located in the Appendices.
- 2.1.2 The proposed site lies within the Trowbridge Community an area in the northeast of Cardiff, within Cardiff Council. The Cardiff Local Development Plan 2006-2026 (adopted January 2016) and Newport Local Development Plan 2001-26 (adopted January 2015) have been used for the basis of the information collated.
- 2.1.3 The application site is situated within the Gwent Levels – Rumney and Peterstone Site of Special Scientific Interest (SSSI) and it lies adjacent to an Historic Landscape Area (also classed as a Site of Important Nature Conservation (SINC)).

2.2 International and National Landscape Designations

- 2.2.1 The application site does fall within an the international / national landscape designation of the Gwent Levels – Rumney and Peterstone Site of Special Scientific Interest (SSSI) as detailed in 2.4.2.

2.3 Local Landscape Designations

- 2.3.1 The site itself does not lie within a local landscape designation, however, within the 5km study area there are areas that include;
- Conservation Areas (EN9)
 - Public Right of Ways (PROWs)
 - Listed Buildings (EN9)
 - Local Nature Reserves (EN5)
 - Special Landscape Area / Landscape Protection (EN3 & SP8)
 - Green Wedge (KP3 (A) & SP7)
- 2.3.2 Conservation Areas (EN9)
- 2.3.3 Six Conservation Areas are found within the 5km study area. The closest is Old St. Mellons Conservation Area approximately 1.75km to the north of the site. The other five Conservation Areas are found to the west between 4 and 5km from the site, they are as follows, Roath Mill Gardens Conservation Area, Roath Park Conservation Area, Oakfield Street Conservation Area, Wordsworth Avenue Conservation Area and Roath Park Land and Gardens Conservation Area. See drawing ALD837/LD1003 RevP01 for the exact locations and extract over the page for the policy wording from The Cardiff Local Development Plan 2006-2026.

EN9: CONSERVATION OF THE HISTORIC ENVIRONMENT

Development relating to any of the heritage assets listed below (or their settings) will only be permitted where it can be demonstrated that it preserves or enhances that asset's architectural quality, historic and cultural significance, character, integrity and/or setting.

- i. **Scheduled Ancient Monuments;**
- ii. **Listed Buildings and their curtilage structures;**
- iii. **Conservation Areas;**
- iv. **Archaeologically Sensitive Areas;**
- v. **Registered Historic Landscapes, Parks and Gardens; or**
- vi. **Locally Listed Buildings of Merit and other historic features of interest that positively contribute to the distinctiveness of the city.**

2.3.4 Public Rights of Way (PROWs)

2.3.5 Within 1km of the site there are only 4 public footpaths. The first is immediately adjacent to the site on its western boundary, and links Wentloog Corporate Park with Trowbridge and Rumney. The other 3 are to the north at the 0.75-1km distance and are associated with Trowbridge and Pildu urban areas. This is illustrated on drawing ALD837/LD1002 RevP01.

2.3.6 Beyond the 1km distance from the site, there are numerous Public Rights of Way in the form of footpaths and other public access routes mainly to the northwest through to the northeast in both the urban areas and countryside. They create a strong network of links between local areas and routes within more urban areas.

2.3.7 The Wales Coast Path runs along the coast to the south of the study area within 1.3km of the site at its closest and is classified as a National Trail. The Wales Coast Path is 870 miles long route following most of the coast of Wales from just outside Chester in the north to Chepstow in the south. The Rhymney Valley Ridgeway Footpath, also a National Trail runs to the north of the site on the study areas 5km boarder. This route winds its way across the hills encircling the unique and often spectacular scenery of the Rhymney Valley and is 27.6 miles.

2.3.8 Listed Buildings (EN9)

2.3.9 There are no listed buildings found within the site. The closest listed building is 200m away to the south of the site, this is Pen-Pil (Penpill Farm Kennels) and is Grade II, it is described as a traditional regional farmhouse mainly retaining its historic fabric.

2.3.10 Within the 5km study area, there are numerous listed buildings and locally listed buildings located in the many urban areas of Cardiff – Trowbridge, St Mellons, Rumney, Roath and Roath Park etc. See drawing ALD837/LD1003 RevP01 for the exact locations and extract above for the policy wording from The Cardiff Local Development Plan 2006-2026.

2.3.11 Local Nature Reserves (EN5)

2.3.12 The site is not situated within a Nature Reserve, there is one Local Nature Reserve within the study area, this is 3km to the west of the site – Howardian Local Nature Reserve. See drawing ALD837/LD1003 RevP01 for the exact location and extract below for the policy wording from The Cardiff Local Development Plan 2006-2026.

EN5: DESIGNATED SITES

Development will not be permitted that would cause unacceptable harm to sites of international or national nature conservation importance.

Development proposals that would affect locally designated sites of nature conservation and geological importance should maintain or enhance the nature conservation and/or geological importance of the designation. Where this is not the case and the need for the development outweighs the conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development which avoids nature conservation impacts, and compensation measures designed to ensure that there is no reduction in the overall nature conservation value of the area or feature.

2.3.13 Special Landscape Area / Landscape Protection (EN3 & SP8)

2.3.14 The site is not situated within a Special Landscape Area / Landscape Protection, there is one large area within the study area, this is 0.4km to the south of the site and extends across both Cardiff Council and Newport City Councils boundaries. See drawing ALD837/LD1003 RevP01 for the exact location and extract below for the policy wording from The Cardiff Local Development Plan 2006-2026.

EN3: LANDSCAPE PROTECTION

Development will not be permitted that would cause unacceptable harm to the character and quality of the landscape and setting of the city.

Particular priority will be given to protecting, managing and enhancing the character and quality of the following Special Landscape Areas:

- i. **St Fagans Lowlands and the Ely Valley;**
- ii. **Garth Hill and Pentyrch Ridges;**
- iii. **Fforest Fawr and Caerphilly Ridge;**
- iv. **Wentloog Levels; and**
- v. **Flat Holm.**

A landscape assessment and landscaping scheme will be required for significant development proposals.

2.3.15 See extract below for the policy wording from the Newport Local Development Plan 2011-26.

SP8 Special Landscape Areas

SPECIAL LANDSCAPE AREAS ARE DESIGNATED AS FOLLOWS WITHIN WHICH PROPOSALS WILL BE REQUIRED TO CONTRIBUTE POSITIVELY TO THE AREA THROUGH HIGH QUALITY DESIGN, MATERIALS AND MANAGEMENT SCHEMES THAT DEMONSTRATE A CLEAR APPRECIATION OF THE AREA'S SPECIAL FEATURES:

- i) NORTH OF BETTWS
- ii) WEST OF RHIWDERIN
- iii) WENTLOOGE LEVELS
- iv) RIVER USK
- v) CALDICOT LEVELS
- vi) WENTWOOD

2.3.16 Green Wedge (KP3 (A) & SP7)

2.3.17 The site is not situated within a Green Wedge, there is three within the study area at its closest point the one of the areas of green wedge is 3.5km to the north of the site, with the second to the west of this at 3.75km and the third to the northeast also at 3.75km. The green wedge is in place to manage the urban form of Cardiff and protect the setting of the urban area by preventing coalescence between settlements. See drawing ALD837/LD1003 RevP01 for the exact location and extract below for the policy wording from The Cardiff Local Development Plan 2006-2026.

KP3 (A): GREEN WEDGE

In order to strategically manage the urban form of Cardiff and to protect the setting of the urban area, a Green Wedge is proposed on land North of the M4 as shown on the Proposals Map. Within this area development which prejudices the open nature of this land will not be permitted. Positive biodiversity, landscape, climate change mitigation and informal recreational management and enhancement measures will be encouraged in this area to further enhance the long term role of the area as a key natural resource benefiting the city.

2.3.18 See extract below for the policy wording from the Newport Local Development Plan 2011-26.

SP7 Green Wedges

GREEN WEDGES HAVE BEEN IDENTIFIED IN ORDER TO PREVENT COALESCENCE BETWEEN THE FOLLOWING SETTLEMENTS:

- i) NEWPORT AND CARDIFF;
- ii) ROGERSTONE AND RISCA;
- iii) BETTWS, MALPAS AND CWMBRAN;
- iv) CAERLEON AND CWMBRAN.

WITHIN THESE AREAS DEVELOPMENT WHICH PREJUDICES THE OPEN NATURE OF THE LAND WILL NOT BE PERMITTED. AN INCREASE IN SIZE OF A DWELLING OF MORE THAN 30% OF THE VOLUME OF THE ORIGINAL SIZE OF THE DWELLING, OR AS EXISTED IN 1948, WILL NOT BE APPROVED.

2.4 Wider Context

2.4.1 The following features fall within the 5km study area of the site:

- Site of Special Scientific Interest (SSSI - EN5)
- Site of Important Nature Conservation (SINC - EN5)
- Historic Parks and Gardens (EN9)
- Scheduled Ancient Monuments (EN9)
- Country Park
- Green Belt (SP6)

2.4.2 Site of Special Scientific Interest (SSSI – EN5)

2.4.3 The development site falls within the Rumney and Peterstone Site of Special Scientific Interest within the Gwent Levels, it is described as the following:

One of a series of six SSSIs, totalling 5700 hectares (about 14 000 acres). They lie alongside the Severn Estuary and cover the whole of the Gwent Levels, stretching from east of Cardiff through to Caldicot. The landscape we know today is entirely man made, a result of reclamation from the sea over the last 2000 years. The land is below high mean water level and the sea is kept out by extensive sea defences. Traditionally, fields are drained by a system of ridge and furrow or 'grips' (shallow trenches) into the extensive system of interconnected ditches that surrounded each field. The larger of these are known as reens, which discharge at intervals to the Severn Estuary via tidal flaps. This drainage system is the largest in Wales and contains a wide range of wetland plants and insects that are becoming increasingly uncommon.

2.4.4 Within the 5km study area there are two further SSSI sites found in Rumney, the closest is Rumney Quarry at 2.3km from the site to the southwest, the second is just beyond this at 2.75km from the site and is a section of the Rhymney River. See drawing ALD837/LD1003 RevP01 for the exact locations and paragraph 2.3.12 for the policy wording from The Cardiff Local Development Plan 2006-2026.

2.4.5 Site of Important Nature Conservation (SINC - EN5)

2.4.6 The site does not sit within a SINC, however there is one less than 50m to the north of the site the just beyond the South Wales Mainline Railway, this is at Hendre Road and is called Flowering Rush. Within 1km of the site there are two further SINC's, 300m to the southwest (within Wentloog Industrial park) and 900m to the northeast (at Hendre Lake West)

2.4.7 Within the 5km study area there are numerous SINC's (too many to list) the majority of these are to the southwest through to the north beyond 2km from site and relate to Rhymney River corridor or woodlands beyond. See drawing ALD837/LD1003 RevP01 for the exact locations and paragraph 2.3.12 for the policy wording from The Cardiff Local Development Plan 2006-2026.

2.4.8 Historic Park and Gardens (EN9)

2.4.9 The site is not situated within a Historic Park and Garden.

2.4.10 Three Historic Park and Gardens are found within the study area. The first to the southwest, 4km from site, the second to the west at 4.4km distance and the third to the north at 4.6km from the site. The closest is Waterloo Gardens and Roath Mill, a Grade II listed small Edwardian public park. It is listed for the survival intact of two adjacent Edwardian public parks of modest charm. The Marquis of Bute's example in donating most of the land for the nearby Roath Park led Lord Tredegar (who also donated a small area of Roath Park) to follow suit further down between 1897-1906. See drawing ALD837/LD1003 RevP01 for the exact locations and paragraph 2.3.3 for the policy wording from The Cardiff Local Development Plan 2006-2026.

2.4.11 Scheduled Ancient Monument (SAM – EN9)

2.4.12 The site is not situated within a Scheduled Ancient Monument.

2.4.13 Four Scheduled Ancient Monuments are found within the study area. The closest to the site is northwest at 1.3km away is Caer Castell Camp the remains of a motte and ditch, dating to the medieval period. The second closest is to the south of the site at 1.5km and is the Relict Seawall on Rumney Great Wharf. The third is to the north at a distance of 2km, and the fourth is to the west 3.8km from site. See drawing ALD837/LD1003 RevP01 for the exact locations and paragraph 2.3.3 for the policy wording from The Cardiff Local Development Plan 2006-2026.

2.4.14 Country Park

2.4.15 The site is not situated within a Country Park, neither can a Country Park be found within the 5km study area.

2.4.16 Green Belt (SP6)

2.4.17 The site is not situated within a Green Belt, however there is one within the study area, this is to the northeast through to southeast of the site. The Green Belt designation is within Newport City Council, and sits on the border between the two councils, at its closest point the Green Belt is 0.8km away from site. See extract below for the policy wording from the Newport Local Development Plan 2011-26

SP6 Green Belt

THE GREEN BELT IS MAINTAINED ALONG THE NEWPORT – CARDIFF BOUNDARY. WITHIN THIS AREA, DEVELOPMENT WHICH PREJUDICES THE OPEN NATURE OF THE LAND WILL NOT BE PERMITTED. AN INCREASE IN SIZE OF A DWELLING OF MORE THAN 30% OF THE VOLUME OF THE ORIGINAL SIZE OF THE DWELLING, OR AS EXISTED IN 1948, WILL NOT BE APPROVED.

2.5 Landscape Character

- 2.5.1 According to Natural Resources Wales the site at Newlands Road is found within the National Character Area 34 'Gwent Levels'. Further detail is given on this National Landscape Character Area in section 4.2.
- 2.5.2 The Landscape Character types within the wider study area are identified in detail on ALD837/LD1006 RevP01. These are taken from the Cardiff Council A review of Landscape Character Areas 2008. The site itself is located in the 'Wentloog Levels' character area. Within the wider 5km study area outside of the large mass of Cardiff's urban areas are the key characters of 'Caerphilly Ridge Foothills', 'Eastern Lowlands' and 'River Rhydney Corridor'.

2.6 Landscape Features

- 2.6.1 This section briefly outlines issues specifically relevant to landscape matters both within the site and in the context of the general study area. Specific reference should be made to drawing ALD837/LD1004 RevP01 contained within the Appendices.
- 2.6.2 The overall site comprises an area of approximately 1.67ha of previously developed land. Access to the site is gained via the existing road system with Newlands Road accessed from Wentloog Avenue (B4239), refer to drawing ALD837/LD1008 RevP01.
- 2.6.3 The proposed development site occupies an almost square area of land with access gained from 2 points off a side road off Newlands Road, this side road also supports access to Reynold Couplings.
- 2.6.4 The site is comprised of a brownfield site currently covered by grass and ruderal vegetation, it is bordered with mature to semi mature vegetation to the west along the drainage ditch, to the north the boundary is open onto the South Wales mainline railway (Cardiff to London), to the east and south bunds form the boundary, these are overgrown with brambles and other lower vegetation.
- 2.6.5 A drainage ditch runs along the western boundary of the site and links in with the wider network of local drainage routes and pools. These features are identified on drawing ALD837/LD1008 RevP01 with supporting images of the site on ALD837/LD1011 RevP01.
- 2.6.6 The site is generally flat at approximately 5-7m AOD with localised bunding at 7-7.5m to the east and south to prevent access, to the west where the drainage ditch runs in a north to south direction, the site falls away to 4.5m. See drawing ALD837/LD1011 RevP01 for photos of the site.
- 2.6.7 Beyond the immediate site boundary, the land is manmade to the east, south and west due to the development site sitting within the Wentloog Corporate Park, however this industrial estate has a very green spine road. Immediately to the north of the site boundary the land is open and rural for several fields before you reach the urban areas of Rumney, Trowbridge and Pilldu. Immediately to the west of the site (Pinewood Studio Wales) there is a Wind Turbine, this sits at 79m tall to the hub with a tip height of 120m.

2.6.8 Cardiff and its urban area encompasses a large swathe of the study area from the southwest to the northeast, the River Seven Estuary covers an area from the southwest to the east, and in between is the area of land where the development site sits called the Wentloog Levels, this is a lowland landscape with a flat open character that has strong field pattern dominated by drainage ditches, and several industrial estates towards Cardiff. The site is consistent with character of the immediate surrounding area before it turns into settlement and river estuary.

2.6.9 Views into site are available throughout a large part of the study area, with the main cluster within 3km of the site. Beyond this it would then be at the higher points further away in the north to northeast.

- To the north / northeast of site, views can be obtained from the urban areas of Trowbridge, St Mellons and Pilldu after this band of houses and industry the land dips away to form the valley of the Rhymney River.
- To the east and south views into site are limited within close proximity of the site due to the flat topography, but where highpoints are found more views are presented from these elevated positions.
- To the west, views can be glimpsed through the urban area of Rumney and the industrial estates of Pwll Mawr in particular when roads align with the site.

2.7 Summary

2.7.1 In conclusion, the site is not situated within any International or Local designations, it is however situated within a National designation (Site of Special Scientific Interest (SSSI)). The 5km study area does contain several designations some of which come close boundaries of existing areas of development, particularly the industrial areas within the study area, these boundaries present existing challenges in management and protection of these designations. Where the development site is anticipated to form an additional boundary to these designated sites, or is anticipated to have an impact upon them they must be recognised, and relevant policy objectives should be met, taking into account how existing developments in the study area meet these policy objectives whilst being in close proximity to the designated sites.

METHODOLOGY

THREE

3.1 Summary of Approach

3.1.1 The format of this assessment and the methodology employed accords with the 'Guidelines for Landscape and Visual Impact Assessments' by The Landscape Institute and the Institute of Environmental Management and Assessment, 3rd Edition published April 2013, The Landscape Institutes Technical Guidance Note 06/19 Visual Representation of Development Proposals Published 17th September 2019 and Natural England (NE) with Department for Environment, Food and Rural Affairs (DEFRA). Landscape and Sea Scape Character Assessments (October 2014)

3.1.2 The study comprises:

- A desktop review of current statutory and non-statutory documents;
- A landscape assessment of the wider context of the site including an analysis of character, quality and sensitivity, and the identification of key viewpoints;
- An assessment of the site and its immediate landscape setting;
- An understanding of views affected by the proposed development, and
- A description of the proposed scheme.

3.1.3 Documents reviewed / consulted in undertaking the study include:

- Cardiff Local Development Plan 2006-2026 (adopted January 2016);
- <http://ishare.cardiff.gov.uk>
- Newport Local Development Plan 2011-26 (Adopted January 2015);
- <http://my.newport.gov.uk/iShare/>
- National Character Areas Character Map – Natural Resources Wales;
- Cardiff Council - A review of Landscape Character Areas 2008
- http://www.ggat.org.uk/cadw/historic_landscape/Gwent%20Levels/English/GL_Main.htm - the Historical Landscape Characterisation The Gwent Levels
- <http://lle.gov.wales/catalogue/item/AncientWoodlandInventory2011/?lang=en>
- www.magic.defra.gov.uk (Multi Agency Geographical Information for the Countryside);
- <http://www.landis.org.uk/soilscapes/>
- Aerial maps;
- OS Explorer Maps 151 & 152 (Cardiff & Bridgend / Caerdydd A Pen-y-bont & Newport & Pontypool / Casnewydd a Pont-y-pwl);
- Client provided detailed topographic survey (digital), and
- www.old-maps.co.uk – comprehensive historical map archive.

- 3.1.4 The documents reviewed as part of the desktop study were used to identify potential visual receptors within the study area. Representative viewpoints were selected based on sensitivity criteria. Visual receptors and representative viewpoint selection are discussed in further detail in paragraph 3.2.20 below.
- 3.1.5 When undertaking the site visit to site advice was sought from Tim Walter Principle planner: Development Management Strategic Placemaking at Cardiff Council. Viewpoint locations were agreed in principle subject to on-site visibility.
- 3.1.6 All fieldwork was undertaken during periods of acceptable visibility and daylight conditions. Two site visits were undertaken, the first on the 2nd July 2019 assessed baseline conditions during the Summer. A second site visit was undertaken over a 2-day period covering the 11th and 12th of February 2020. The second visit was undertaken to record Winter baseline conditions and views and in accordance with updated guidance issued by the Landscape Institute published in September 2019; this updated guidance and the response to adopting it is discussed in further detail in paragraph 3.2.20 below.

3.2 Methodology of Landscape and Visual Baseline Studies

3.2.1 Landscape Baseline Methodology

- 3.2.2 By analysing the character of an area, its principal features and elements can be identified. Once these elements are identified, potential impacts caused by proposed development can be measured and a judgment made as to the overall effect this may have on the local landscape character.
- 3.2.3 The Countryside Agency guidelines (*Swanwick et al, 2002*) make a clear distinction between the characterisation process (in which the attributes of the landscape are described) and the judgement-making process. The landscape baseline section of the assessment deals with the characterisation process, and later sections make judgements about the potential effects of the proposed development based upon the characterisation.
- 3.2.4 This is also to be read in conjunction with Natural England (NE) with Department for Environment, Food and Rural Affairs (DEFRA). Landscape and Seascape Character Assessments (October 2014) that provides a brief introduction to Landscape Character Assessments.
- 3.2.5 Existing landscape character assessments are an important starting point for any new assessment, due to the hierarchical nature of character assessment.

“Ideally assessments at different scales should fit together as a nested series or a hierarchy of landscape character types and/or areas so that assessment at each level adds more detail to the one above” (Swanwick et al 2002, par. 2.14).

- 3.2.6 The study of landscape assessments at different strategic levels is important for a number of reasons:
- it aids the understanding of the landscape at a wider level;

- it allows the identification of landscape elements that may be present at a number of different scales and thus of higher importance;
- it highlights landscape character that is 'out of context' with other levels of the hierarchy, and
- it may identify potential mitigation and restoration options that may not be present at the local scale, but can be beneficial at a higher level. The landscape character of the site and its surroundings should be assessed according to the above principles.

2.3.7 The assessment is also carried out in accordance with Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity (Ref 10.3).

3.2.8 Landscape Evaluation

3.2.9 The table below provides five evaluation components to assess the landscape character situation of the Assessment Site and its surroundings. Through assessing these components, the existing landscape character's capacity to accept change will be identified. These components are defined with reference to best practice guidance on character assessment.

Table 1: Landscape Evaluation	
Landscape Component	Description
Landscape Character	The distinct and recognisable pattern of elements made up from landscape components that create a sense of place. It is a reflection of the geology and soils, landform, land use, built form and human activity.
Landscape Value	The importance of an area on a national, regional or local scale. In terms of planning policy, value is recognised through designations. At a community level, recognition of value may occur without formal designation, and encompasses subjective and perceptual aspects such as scenic quality, tranquillity, wildness, cultural associations or conservation.
Landscape Condition	Equivalent to quality, this is the physical state of the landscape, or townscape, its intactness, and the state of repair of the features and elements that together make up its character.
Landscape Sensitivity	The sensitivity refers to the nature of the receptor the character and quality and the extent to which these factors will be tolerant of change in general and be able to recuperate from loss or damage.
Landscape Capacity	The ability of an area to accept change without significantly affecting its character.

3.2.10 Through providing a concise description of the existing landscape elements (such as topography, vegetation, urban grain, and built form mass and scale), an understanding of distinct character areas, which share common features and characteristics will be identified. These areas have recognisable patterns of elements, which together create the particular sense of place for the Assessment Site and its surrounding landscape.

3.2.11 Landscape Value

3.2.12 The value of the identified landscape character areas is assessed using the criteria set out in Table 2. The value is based on and takes into account what is important within this landscape and whether it is of value at a national, regional or local level. Part of the assessment decisions are made as to whether the Assessment Site is special, distinctive and representative, or include, characteristic features relating to the areas national, regional or local character assessments defined character.

Table 2: Landscape Value			
Value	Typical criteria	Typical scale of importance/ rarity	Typical examples
Exceptional	High importance and rarity. No or limited potential for substitution	International, National	World Heritage Site, National Park, AONB, Grade I and Grade II* listed buildings
Major	High importance and rarity. Limited potential for substitution	National, Regional, Local	AONB, Scheduled Monuments, Conversation Area, Grade II listed buildings Register Park and Gardens
Moderate	Moderate importance and rarity. Limited potential for substitution	Regional, Local	Undesignated but value perhaps expressed through non-official publications or demonstrable use
Minor	Minor importance and rarity. Considerable potential for substitution	Local	Areas identified as having some redeeming feature or features and possibly identified for improvement
Poor	Minor importance and rarity	Local	Areas identified for recovery

3.2.13 Landscape Condition

3.2.14 The condition of the identified Landscape Character Area is assessed using the criteria set out in Table 3. The condition refers to the state of the individual area and is described as factually as possible.

Table 3: Landscape Condition	
Condition	Criteria
High	Where the area is in good repair/quality.
Moderate	Where the area is in average repair/quality.
Low	Where the area is in poor repair/quality.

3.2.15 Landscape Capacity

3.2.16 Finally, the baseline Landscape Character Assessment considers the identified character area's capacity to accept change. Here, the degree to which the identified character areas can accept change without a detrimental effect is established. These findings will contribute to the effects section of this assessment. The capacity of the area to accept change will be assessed as high, moderate or low as defined in Table 4.

Table 4: Landscape Capacity	
Capacity	Criteria
High	Where the character area can accommodate significant levels of change without significant effect on its landscape character.
Moderate	Where the character area can accommodate a degree of change without significant effect on its landscape character.
Low	Where the character area can only accommodate a small amount of change without significant effect on its landscape character.

3.2.17 Sensitivity of Landscape Resource

3.2.18 The determination of landscape sensitivity is an important part of the LVIA process. Sensitivity combined with the magnitude of impact, which will be assessed later, allows assessing the overall significance of the landscape effects.

3.2.19 The overall sensitivity of the existing landscape resource is based on the following factors:

- The value placed on a landscape;
- The quality placed on the landscape;
- Compatibility of the proposed development with the existing land-uses and landscape character;
- Condition of the landscape;
- Contribution of the landscape within the site to the overall landscape character;
- The scope for mitigation of the proposed scheme, and
- Degree to which landscape elements and characteristics can be replaced or substituted.

Table 5: Landscape Sensitivity	
Sensitivity	Criteria
High	The landscape character area has an exceptional or major value and a high to moderate condition and therefore would not be tolerant of change.
Moderate	The landscape character area has a moderate to minor value and a moderate condition and therefore would be tolerant of some change.
Low	The landscape character area has a moderate to poor value and a moderate to low condition and therefore would be tolerant to change.

3.2.20 Visual Baseline Methodology

3.2.21 An initial study of Ordnance Survey Maps 151 & 152 - Cardiff & Bridgend / Caerdydd A Pen-y-bont & Newport & Pontypool / Casnewydd a Pont-y-pwl (1:25,000) was carried out to identify potential receptors and areas for investigation based on the following criteria:

- Distance from the scheme to the receptor;
- The proportion of the development visible as well as the absolute visibility of the scheme;
- The height of the development relative to the receptor with reference also to the scale of other features in the view;
- The number and character of elements which would be lost from or added to the view;
- High concentrations of viewers, such as settlements, local recreational facilities, PROWs etc, and
- Views illustrating the visual character of the surrounding area.

3.2.23 A Zone of Theoretical Visibility (ZTV) was generated using Geographical Information System (GIS) software. This ZTV indicates broad areas of visibility within the study area as well as areas where the proposed development is expected to be entirely screened from view by intervening topography. The use of a ZTV can help to inform the viewpoint selection process by scoping out of the assessment areas where no views of the proposed development are anticipated.

3.2.24 Due to the number of potential visual receptors in the study area it would be impractical to separately visit and capture views experienced by each receptor. Therefore, representative viewpoints are selected to capture and assess views experienced by groups of receptors. Viewpoints must be in publicly accessible locations however they can be representative of views experienced from private locations such as residential properties.

3.2.25 A total of **19** viewpoints were recorded on the visit to illustrate the general range of visibility across the study area, as well as viewpoints with the highest sensitivity. The identified viewpoints were then visited and assessed for their sensitivity to the proposed development.

3.2.26 The field work for the assessment was carried out on the 2nd July 2019 during the daytime. The weather conditions experienced were fair with patchy light cloud, light winds and visibility was good. The conditions for the visit were considered acceptable for undertaking the landscape and visual appraisal assessment.

3.2.27 Photographs illustrating the selected viewpoints were taken during the site visit, using a Nikon D3200 digital camera set to the equivalent of a 33mm focal length, which is the equivalent of 50mm film camera lens (equivalent of human eye) on automatic setting. The nature of the views are relatively wide panoramas and it is therefore considered beneficial to present the photographs as so – where these panoramas consist of three or four images, the frames have been overlaid using Adobe Photoshop Software (Creative Cloud).

3.2.28 On the 17th September 2019 the Landscape Institute published ‘Technical Guidance Note 06/19 – Visual Representation of Development Proposals’ (TGN 06/19). This document sets out revised recommendations for technical photography and the production of visualisations used as part of the LVIA process. It was considered important to respond to this updated guidance by undertaking a second site visit on the 11th - 12th of February 2020. During the second site visit, each representative viewpoint was visited again in order to re-capture the views.

Table 2 Visualisation Types 1-4		Type 1	Type 2	Type 3	Type 4
		Annotated Viewpoint Photograph	3D Wireline / Model (non-photographic)	Photomontage / Photowire	Photomontage / Photowire Survey / Scale Verifiable
Aim of the Visualisation		To represent context and outline or extent of development and of key features	To represent 3D form of development / context	To represent appearance, context, form and extent of development	To represent scale, appearance, context, form, and extent of development
Photographic Equipment	Tripod	Recommended but discretionary	Not relevant	Recommended	Necessary
	Panoramic head	Not relevant		Recommended for panoramas	Necessary for panoramas
	Minimum Camera / Lens	Cropped frame or FFS + 50mm	Not relevant	Cropped frame or FFS + 50mm	Full Frame Sensor (FFS) + 50mm FL lens ¹
Locational Accuracy	Source of camera/viewpoint location data	GPS, OS Maps, geo-referenced aerial photography	Varies according to technology	Use good quality data: GPS, OS Maps, geo-referenced aerial photography, LiDAR	Use best available data: High resolution commercial data, LiDAR, GNSS, or measured / topographic surveys
	Survey-verified ²	Not relevant			When appropriate
Data & Presentation	Verifiable (SNH) ³	Not relevant			Required
	3D model	Not required	Required		
	Image Enlargement ⁴	Typically 100%	Not relevant	Typically 100%	100% - 150%
	Form of Visualisation	sketch / outline / arrows	massing / wireline / textured	wireline / massing / rendered / textured to agreed AVR level ⁵	
	Viewpoint mapping	Dedicated viewpoint location plan			
	Reporting of methodology and data sources	Outline description of sources and methodology recommended		Data, sources and methodology recommended	
		Outline description of sources and methodology recommended		Data, sources and methodology recommended	

Table 2 footnotes:

¹ FFS+50mm FL - note exceptions to 50mm lens FL. See Section 4 and Appendices 01 and 06.

² Survey-verified means the camera position and survey features being recorded by highly accurate survey processes. See Section 4 Locational Accuracy & Appendix 14.

³ Verifiable (SNH) has the same meaning as in SNH 2017 - the photographic process and image scaling is capable of being verified to agreed standards by reference to the original photograph with metadata. See Appendices 6 & 11.

⁴ Image Enlargement - see 3.8 below.

⁵ AVR level - see Appendix 6.4.

Figure 1 – Visualisation Types 1-4

3.2.29 Figure 1 above is an excerpt from TGN 06/19 which outlines the 4 types of visualisation which can be used as part of the LVIA process. Due to the scale and nature of the proposed development visualisation type 4 was selected. Therefore, a different camera and lens combination were used on the second site visit. Although this change in equipment results in some differences in the appearance of the photographs between Summer and Winter views, this was deemed acceptable in order to best follow the updated guidance.

3.2.30 Winter views were captured using a Sony ILCE-7, full frame sensor camera with a 50mm fixed focal length lens. All photographs were taken with the aid of a tripod. Conditions at the time of photography were generally clear with periods of partial to full cloud cover. All photographs were taken during times of acceptable visibility and daylight. In order to accurately produce photomontages survey verified topographical data was collected on site. Panoramic photographs were produced using a combination of PTGui and Adobe Photoshop CC v20. Photomontages were produced using the following combination of software: LSS v10, AutoCAD Architecture 2020, 3D Studio MAX 2020, Photoshop CC v20. As the site was visited during summer and winter views can be assessed based on ‘worst case’ visibility where trees and vegetation are out of leaf. Photographs taken during summer have been

retained for record as well as to aid in the illustration of potential screening provided by existing vegetation.

3.2.31 Sensitivity of Visual Resource

3.2.32 Sensitivity of the visual resource depends on the following factors:

- The location and context of the viewpoint. For example, viewpoints which are closer to the site are generally more sensitive;
- The number of users who commonly use the viewpoint. Some viewpoints are commonly used by the public, such as formal viewing platforms, picnic areas or recreational rights of way. Other viewpoints may be difficult to gain access to;
- The nature of the viewpoint. Residents are sensitive to visual impacts as they experience the impacts on a regular and prolonged basis. Public footpaths can also be sensitive, since the users' attention is often focused on the landscape. By contrast, views from outdoor sport facilities, transport routes or places of work are less sensitive;
- Movement of viewers at the viewpoint. More transitory views, for example users of a motorway, are generally less sensitive than views experienced by residents from residential properties and footpaths that are more sensitive, and
- The cultural significance of the viewpoint. Including its appearance in guidebooks and tourist maps, or the strength to its relationship with cultural and historical associations.

Table 6: Sensitivity of Viewpoint	
Sensitivity	Criteria
High	Residential properties (views from rooms occupied during daylight / waking hours), public footpaths, bridleways, public buildings, culturally sensitive areas. This significance is reduced to moderate if viewed behind a retail, industrial or employment site.
Moderate	Residential properties (views from rooms unoccupied during daylight / waking hours) Retail and employment sites, sports and recreational facilities. Users of local roads and railways.
Low	Industrial sites, outdoor sports facilities and agricultural land. Users of main roads travelling at speed.

3.3 **Assessment Methodology and Criteria**

3.3.1 Having assessed the landscape and visual baseline and identified the potential elements of the development likely to cause change to that baseline, a detailed assessment of the possible changes to all identified landscape and visual receptors can be made.

3.3.2 In order to assess the significance of effects, an assessment of the magnitude of the impact is necessary. The magnitude of landscape impacts depends upon the following factors (LI and IEMA, 2013):

- The scale or degree of change to the existing landscape resource;

- The nature of the change caused by the proposed scheme (for example beneficial or adverse), and
- The timescale or phasing of the proposed scheme.

3.3.3 For each of the viewpoints the potential magnitude of the residual visual impacts, of both construction and completion of the development, have been assessed. The magnitude of visual impacts is mainly dependent upon the following factors (LI and IEMA, 2013):

- What proportion of the existing view would change as a result of the development proposals?
- How many features or elements within the view would be changed?
- How appropriate is the proposed scheme in the context of the existing views?
- How many viewers would be affected by the changes in the view?
- What is the timescale of the proposed scheme? Also, is it continuous or intermittent?
- What is the angle of the view in relation to the main activity of the receptor?

3.3.4 The magnitude of change for each viewpoint should be assessed for both construction of the scheme and its completion.

3.3.5 The magnitude of change for both landscape and visual impacts can be categorised as:

- **High** – The proposed scheme would completely change the character and/or appearance of the landscape for a long period of time or permanently. It would affect many receptors;
- **Moderate** – The proposed scheme would cause a noticeable difference to the landscape, and would affect several receptors;
- **Low** – The proposed scheme would cause a barely perceptible impact, and would affect few receptors;
- **Negligible** – The proposed scheme is appropriate in its context. It may be difficult to differentiate from its surroundings and would affect very few or no receptors.

3.3.6 The potential significance of landscape and visual impacts is determined by a combination of the magnitude of the potential impact and the sensitivity of the landscape and visual setting to change. These two variables can be correlated as illustrated in Table 7, below.

Table 7: Impact Magnitude Matrix Sensitivity of Receptor			
Magnitude of Change	Sensitivity of Receptor		
	High	Moderate	Low
High	Major	Major/Moderate	Moderate
Moderate	Major/Moderate	Moderate	Moderate/Minor
Low	Moderate	Moderate/Minor	Minor
Negligible	Not Significant	Not Significant	Not Significant

3.3.7 The above consideration of the sensitivity of the receptors with the magnitude of the potential impacts provides an overall assessment of the potential significance of impacts. This process is not however a quantitative process; there is not an absolute scoring system. Instead, the correlation of the two factors, although reflecting recognised features and methods of working outlined in this report, is in the end a matter of professional judgement.

3.3.8 Table 8 provides a brief definition of the significance criteria. It must be emphasised that both landscape and visual impacts can be either adverse or beneficial in nature except the situation where no change is predicted and in this case the impact is assessed as not significant – neither beneficial nor adverse.

Table 8: Significance Criteria	
Level of Significance	Description
Major	Very large or large change in environmental or socio-economic conditions. Effects, both adverse and beneficial, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceeding of statutory objectives and/or breaches of legislation.
Moderate	Intermediate change in environmental or socio-economic conditions. Effects that are likely to be important considerations at a local level.
Minor	Small change in environmental or socio-economic conditions. These effects may be local issues but are unlikely to be of importance in the decision making process.
Not Significant	No discernible change in environmental or socio-economic conditions. An effect that is likely to have a negligible or neutral influence, irrespective of other effects.

3.3.9 Following their identification, significant effects have been classified on the basis of their nature and duration as follows:

- **Site Specific** Effects that result from a geographically localised impact;
- **Wider** Effects that are individually significant at a regional level, but which are unlikely to be significant locally;
- **Beneficial** Effects that have a positive influence on receptors and resources;
- **Adverse** Effects that have a negative influence on receptors and resources;
- **Temporary** Effects that persist for a limited period only (due for example, to particular activities taking place for a short period of time);
- **Permanent** Effects that result from an irreversible change to the baseline environment (e.g. land-take) or which persist for the foreseeable future (e.g. noise from regular or continuous operations or activities);
- **Direct** Effects that arise from the impact of activities that form an integral part of the scheme (e.g. direct employment and income generation);

- **Indirect** Effects that arise from the impact of activities that do not explicitly form part of the scheme (e.g. offsite infrastructure upgrades to accommodate the development);
- **Secondary** Effects that arise as a consequence of an initial effect of the scheme (e.g. induced employment elsewhere); and
- **Cumulative** Effects that can arise from a combination of different effects at a specific location or the interaction of different effects over different periods of time.

3.3.10 Short to medium-term impacts are normally considered to be associated with physical construction, and long-term impacts are normally associated with a fully occupied and operational scheme.

3.4 Limitations and Assumptions

3.4.1 The principal assumptions and limitations for this assessment are as follows:

- Baseline conditions have been established using existing assessments, available documentation and field assessment; it is important to note that this information may change before or during the construction and operation of the proposed development.

3.5 Consultation

3.5.1 When undertaking the site visit to site advice was sought from Tim Walter Principal Planner: Development Management Strategic Placemaking at Cardiff Council.

BASELINE STUDY: LANDSCAPE ASSESSMENT

FOUR

4.1 Landscape Baseline

4.1.1 All landscapes have character. It is what makes them unique and defines their sense of place. Natural England defines landscape character as;

'A distinct, recognisable and consistent pattern of elements, be it natural (soil, landform) and/ or human (for example settlement and development) in the landscape that makes one landscape different from another, rather than better or worse'

4.1.2 The Countryside Agency guidelines identify three main levels of Landscape Character Assessment:

- National and regional scale;
- County, district and unitary authority scale, and
- Local, parish and site scale.

4.1.3 This section highlights the baseline landscape conditions that could be affected during and after the proposed development takes place.

4.2 Landscape Character Appraisal

4.2.1 National Landscape Character

4.2.2 National Landscape Character Areas (NCLA) form the broadest scale of landscape character assessment in Wales. There are 48 descriptive profiles for the individual character areas and highlight what distinguishes one landscape from another, with reference to their regionally distinct natural, cultural and perceptual characteristics. The map and supporting descriptions provide the top tier of the hierarchy of Landscape Character Assessment in Wales and a national context for regional and local landscape and ecological assessments. The site has been identified as being within 'Character 34 Gwent Levels'.

4.2.3 The document highlights the key characteristics of the Gwent Levels as;

- *Alluvium – former marsh and inter-tidal areas from the Severn Estuary. Triassic mudstones are beneath*
- *Reclaimed landscape – drained, improved, enclosed, historical, agricultural landscape*
- *Divided by the Usk estuary – into two distinct parts: the Wentloog levels to the west and the Caldicot Level to the east. Collectively they occupy all the coastal levels between Cardiff and the England border by the Severn crossings. The Wye also flows out across the eastern end of this area.*
- *Reens and willows or hedgerows - a network of straight drainage ditches known as reens, acting also as field boundaries; still very extensive patterns but there are only remnant lines of willows on*

their banks. Hedgerows with less regular field shapes are on the slightly higher ground, reflecting different phases of reclamation and enclosure.

- *Flood embankment to the sea - The land has been successively reclaimed from the sea and coastal marshes, and is protected from the tides by a sea wall.*
- *Fertile soils and agriculture - supporting a variety of crops including cereal, sheep grazing, dairying, lowland beef production and equestrian husbandry.*
- *Wet pasture - one of the largest areas of reclaimed wet pasture in Britain. The reens support rare aquatic plants are home to a diverse range of invertebrates.*
- *Archeologically important - one of the finest examples of a 'hand crafted' landscape, it is on the Register of Landscape of Outstanding Historic Interest. Some of the drainage and reclamation works still present in today's landscape date from the Roman period, while buried under the alluvium are archaeological deposits of immense potential and spanning the prehistoric to Medieval periods.*
- *Comparatively little settlement - away from the urban fringes, the Levels have comparatively little settlement, with small nucleated and ribbon settlements linked by narrow roads.*
- *Open views between hills in Wales and England – an exposed landscape in places with long views to surrounding areas and (from only areas with slight elevation) to the Severn Estuary and Bristol Channel.*
- *Major developments on fringes – Llanwern Steelworks, a power station and pylons stand out in the flat landscape, while disproportionately large modern factory units outside Newport are also visible for long distances, and main motorways and rail lines are heard. Suburban development has enlarged settlements and urban development has spread from the adjacent Cardiff and Newport areas.*

4.2.4 Also, within the study area and only 0.75km from site NLCA 35 'Cardiff, Barry and Newport' has been identified. The document highlights the key characteristics of the Cardiff, Barry and Newport as;

- *Edge to the coalfield - lowland margins to the south-east of the South Wales coalfield. A varied geology of mudstones, sandstones and a few outcrops of limestone. Many glacial moraine features.*
- *Busy, heavily urbanised areas - containing Cardiff, and other large settlements including Penarth and Barry to the south to the west and the city of Newport and new town of Cwmbran to the east.*
- *Cardiff – capital city, largest urban area and principle administrative centre for Wales. The Romans established a settlement at Cardiff, remains visible in Cardiff Castle. Mid C19th growth as the most important port in the world for coal export. Cardiff Bay has since regenerated as a secondary focus in the city. The urban form of Cardiff expands across much of the surrounding landscape.*
- *Ports – Cardiff, together with Barry and Newport with it's industrialised river frontage.*
- *Urban fringe / peri-urban areas – for example land between Penarth and Barry, which contains linear settlement linked by rural roads but has an urban fringe character in parts.*
- *Green belt with lush fieldscapes and woodlands - rural pastures and woodlands provide a contrasting peaceful, providing a green setting. Cardiff has the only green belt in Wales. Medium sized fields are mainly enclosed by hedgerows with frequent hedgerow trees.*

- *Prominent landmark structures - include Millennium Stadium in Cardiff; the series of bridges in Newport including the Transporter bridge; the chemical works at Barry, standing out prominently on the skyline.*
- *The M4 motorway - forms a noisy, busy corridor between and bypassing the two cities, together with the main railway.*
- *Green wedges / corridors penetrating urban areas – including wooded river corridors in Cardiff and Newport and the coast at Barry.*
- *Lowland river corridors - Rivers Taff and Ely drain into Cardiff Bay and the tidal River Rhymney runs through east Cardiff; the tidal River Usk forms the focus of Newport with the River Ebbw meandering to the south east.*
- *St Fagans - National History Museum displays around 40 vernacular buildings in a picturesque setting adjacent to St Fagans Castle.*

4.2.5 District Landscape Character

4.2.6 The Landscape Character types within the wider study area are identified in detail on ALD837/LD1006 RevP01. These are taken from the Cardiff Council A review of Landscape Character Areas 2008. The site itself is located in the 'Wentloog Levels' character area. Within the wider 5km study area outside of the large mass of Cardiff's urban areas are the key characters of 'Caerphilly Ridge Foothills', 'Eastern Lowlands' and 'River Rhymney Corridor'.

4.2.7 The document highlights the key characteristics of the Wentloog Levels as;

Positive Attributes

- *Distinctive lowland reclaimed landscape of important geological, ecological, historical and cultural interest (see Aspect Areas GL01, LH002, LH008, HL010, HL011 and CL04)*
- *Flat open character provides links with wider Gwent Levels to the east and seawards to the Bristol Channel. (Aspect Areas VS029 and VS030)*
- *Includes an important area of inter-tidal landscapes (Aspect Areas LH001, VS032 and HL012)*
- *Historic field pattern on reclaimed land (Aspect Areas HL010, HL011 and CL004)*
- *Distinctive pattern of drainage ditches or "reens" which are visually distinctive and of high ecological value (Aspect Areas LH002, LH008, VS029 and VS030)*
- *Sparse settlement pattern of small, isolated farms with rural roads usually following drainage ditch pattern (Aspect Area CL004)*

Negative Attributes

- *Visual intrusion from stark or poorly integrated development around the edges and centre of the Wentloog Levels (Aspect Areas VS029, VS030, VS055, VS066, VS057 and VS083)*
- *Visual disruption and clutter with overhead lines, substations and service compounds (Aspect Areas VS029 and VS030)*
- *Overall neglect and poor quality management of the urban fringe (Aspect Areas VS029, VS030 and VS056)*
- *Disruption to landscape pattern and character as a result of landfill and associated land raising at Lamby Way Tip (Aspect Areas LH004, VS083 and CL016)*

4.3 Natural Characteristics

4.3.1 In order to understand the landscape and visual impacts a development might have; the existing character of an area and its natural features must be taken into account. Appreciating that landscapes have a different character ensures that future developments are well situated and adhere to relevant environmental, social and economic objectives.

4.4 Topography

4.4.1 Site Topography

4.4.2 The site is generally flat at approximately 5-7m AOD with localised bunding at 7-7.5m to the east and south to prevent access, to the west where the drainage ditch runs in a north to south direction, the site falls away to 4.5m.

4.4.3 Study Area Topography

4.4.4 Due to the proximity to the River Severn the land to the south and east of site generally flat between 5-9m AOD, to the southwest it rises slightly within the city of Cardiff to a maximum of 30m AOD. To the west and north the land starts rising to 80m AOD between 2-4km from the site, just beyond this at the 5km distance the land is 110m AOD. A local ridgeline runs west to north, beyond this there is then a valley following the Rhydney River corridor. Refer to drawing ALD837/LD1005 RevP01

4.5 Geology and Soil

4.5.1 The soils immediately surrounding site are classified as 'Loamy and clayey soils of coastal flats with naturally high groundwater'. The soils in the study are made up of predominately those as described for the site and the following:

- Slightly acid loamy and clayey soils with impeded drainage;
- Freely draining slightly acid loamy soils;
- Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils, and
- Freely draining floodplain soils.

4.6 Vegetation

4.6.1 Site Vegetation

4.6.2 The site is currently a brownfield site covered with grass and ruderal vegetation, it is bordered with mature to semi mature vegetation including several large trees to the west along the drainage ditch, to the north the boundary is open onto the South Wales mainline railway (Cardiff to London), to the east and south bunds form the boundary, these are overgrown with brambles and other lower vegetation. Refer to drawing ALD837/LD1008 RevP01.

4.6.3 Study Area Vegetation

4.6.4 Within a 1km radius of the site, and on the lower levels adjacent to the estuary there are small irregular shaped fields, incorporating the meandering lines of former tidal creeks. This is a landscape typical of the coastal area. Most of the area is in agricultural use and has have been improved. Many hedges have been removed, though the lanes tend to be well wooded. The open nature of this landscape

affords very little screening to the north as the area is also overlooked by housing on surrounding hill sides.

4.6.5 The wider area covered by Cardiff and its suburbs is dominated by typical planting / vegetation associated with parks, gardens, tree lines roads etc and are ornamental in comparison to the immediate site vegetation. On the wider hillsides larger arable / pastoral fields occur with the occasional woodland block, these are more traditional of an upland landscape. Refer to drawing ALD837/LD1004 RevP01 for a map of the significant vegetation in the area.

4.7 Water Bodies

4.7.1 The River Severn and its associated mud flats occupy a large portion of the study area in the east to southwest, with the closes point being 1.5km from site. The River Rhymney runs through the area from the north to the south west until it meets the River Severn, at its closest the River Rhymney is 2.5km away. There are a couple of significant drainage ditches / reens that collect water from the area

4.7.2 There is a large fishing lake to the northeast of site on the edge of St Mellons and a second one to the southwest of the site just off Lamby Way. Other smaller streams drain the localised area and a number of small ponds can be found in the study area. Refer to drawing ALD837/LD1004 RevP01 for a map of the significant waterbodies in the area.

4.8 Drainage

4.8.1 Site Drainage

4.8.2 A drainage ditch runs along the western boundary of the site, as identified on ALD837/LD1008 RevP01. There is a network of ditches and localised ponds such as this which are all within the local vicinity of the Industrial Estate – Wentloog Corporate Park, due to it being so low lying and coastal.

4.8.3 Study Area Drainage

4.8.4 The wider study area, in particular the lower coastal areas are crisscrossed with numerous drainage ditches / reens. The drainage routes generally lead towards the River Severn Estuary to the south / southwest of the study area.

4.9 Cultural and Social Factors

4.9.1 Settlement and Dominant Built Form

4.9.2 The site is located within the Wentloog Corporate Park, an industrial estate 6km to the northeast of Cardiff City Centre on the Wentloog Levels, within Trowbridge Community.

4.9.3 The site is a brownfield site currently covered by grass and ruderal vegetation it is bordered with mature to semi mature vegetation to the west along the drainage ditch, to the north the boundary is open onto the South Wales mainline railway (Cardiff to London), to the east and south bunds form the boundary, these are overgrown with brambles and other lower vegetation.

- 4.9.4 The closest building is no more than 20m from the site boundary to the east on the Reynold Couplings Site. Immediately to the west of the site (Pinewood Studio Wales) there is a Wind Turbine, this sits at 79m tall to the hub with a tip height of 120m.
- 4.9.5 Beyond the immediate site boundary, the land is manmade to the east, south and west due to the development site sitting within the Wentloog Corporate Park, however this industrial estate has a very green spine road. Immediately to the north of the site boundary the land is open and rural for several fields before you reach the urban areas of Rumney, Trowbridge and Pilldu. Rumney is a predominately residential area to the east of Cardiff centre, it has a variety of ages of building stock from when old Rumney Castle was a major stronghold on the South Wales Coast. Trowbridge largely dates from the second half of the 20th century, when housing spread east from Rumney onto the farmland of the area.
- 4.9.6 Cardiff and its urban area encompass a large swathe of the study area from the southwest to the northeast, the River Seven Estuary covers an area from the southwest to the east, and in between is the area of land where the development site sits called the Wentloog Levels. Cardiff's rich culture has a diverse range of influences, from the Romans and Normans of antiquity to the industrial revolution and the coal industry – which transformed Cardiff from a small town into a thriving, international city that we see today. The Wentloog levels are formed from tidal deposits and alluvium, which have been recurrently inundated and reclaimed from the Severn Estuary by humans since Roman times. They have been patterns of settlement, enclosure and drainage systems belonging to successive periods of use, and are extremely rich archaeologically, with finds from the Mesolithic, Bronze Age and Iron Age periods.
- 4.9.7 Historic Development
- 4.9.8 Upon reviewing several historical OS maps for the area, it is noted that the site was developed post 1947-52, but pre 1964-65. Before 1947 the site appears to have always consistently been laid out as several fields, that always took the same shape and form this goes as far back as 1882 on the maps. It is known from research into the adjacent mainline railway (South Wales Railway) that this section of line between Gloucester and Swansea via Cardiff was likely installed around the 1850s, so this is when the railway would have divided the land and formed the northern boundary to the site.
- 4.9.9 You can see on the 1964-65 maps that railway sidings are set out within fields of site, these end on site and come in from the east, at this point it is described as a depot. However, on the 1968 maps onwards to 1989-1996 maps, the site is labelled as a timber yard with the number of sidings fluctuating. On the 1989-1996 map Newlands Road, the Wentloog Corporate Park and Pinewood studios are not present, the current configuration as we see today comes in at a later date post 1996.
- 4.9.10 Industry
- 4.9.11 The site sits within a large industrial park called Wentloog Corporate Park and further to the southwest there is also Capital Business Park, these estates and their variety of industrial units dominate this area of the Wentloog Levels, further to the west you also have a large area of retail units. These have all grown up in recent times as Cardiff has expanded and spread further afield.

4.9.12 Modern Cardiff grew rapidly from 1830's onwards when Cardiff built a dock and became the main port for exports of coal and the railways arrived. In more recent years as industry has declined Cardiff has become a centre for white-collar professions. The city relies principally on the retail, finance, media and **tourism** sectors, and has been undergoing major regeneration since the late 20th century particularly in Cardiff city centre and Cardiff Bay.

4.9.13 The whole study area is a wealth of employment opportunities across the whole spectrum of careers.

4.9.14 Farming is the core industry to the east of the study area on the Wentloog Levels beyond the industrial estates, but due to mechanisation, agriculture employs a fraction of the people it would have done in years gone by. The majority of the buildings associated with the Wentloog Levels are residential and found along the Wentloog Road / Broadstreet Common (B4239).

4.10 Aesthetic and Perceptual Aspects

4.10.1 The aesthetic qualities of the local area are summarised in the table below and have been divided into the main categories identified by the Countryside Agency and Scottish Natural Heritage guidance - Landscape Character Assessment Guidance for England and Scotland (CA and SNH, 2002).

Table 9: Aesthetic Factors	
Enclosure	<p>Within the site there is a reasonable sense of enclosure from the east, south and west as views are restricted by the mature vegetated boundaries and adjacent industrial park (Wentloog Corporate Park) of which the site is a part off. The northern boundary is open and expansive with views up towards a local ridge line within the Cardiff suburb of Rumney.</p> <p>Once you are out in the immediate study area within the Wentloog Levels, the vegetated field boundaries / drainage ditches are low to medium in height in a lot of places. This combined with the extremely flat nature of the surrounding landscape of neighbouring fields intermixed with industrial estates, and hamlets creates a series of short expansive glimpse views.</p> <p>When you get to the edge of Cardiff and the land starts to rise these views become longer and more expansive as is also the case at localised high spots, however dependant on the positioning of the local roads, views can still be limited due to the mass of buildings and infrastructure.</p> <p>The River Severn estuary is a very definitive boundary in the south eastern quarter of the study area.</p>
Balance	<p>The balance of the surrounding landscape character within the study area is weighted towards urban and urban fringe in the form of housing, schools, industrial estates and all other things associated with a city the size of Cardiff. Second to this is the River Severn estuary environment which forms a significant contrast in character. Sandwiched in between these two very contrasting environments then comes the more traditional agricultural practices which dominate the rest of the area once you get away from the coast.</p>

Table 9: Aesthetic Factors	
Balance Continued	<p>Significant long-distance views are very limited to the highest ridges in the northwest across to the River Severn and England, many of the lower level views are restricted due to the flat topography and the presence of vegetated boundaries.</p> <p>Breaks in these boundaries allow for mid-distance views, whilst simultaneously screening the area in the immediate foreground.</p>
Pattern	<p>The landscape holds a generally informal, yet organised pattern, due to agricultural and drainage practices, that creates a mosaic of fields all separated by either vegetated boundaries and / or drainage ditches / reens.</p> <p>The ad-hoc basis of which the edge of Cardiff has been derived over the years and the expansion of new pockets of housing / infrastructure adds a significant overlay to the informal organised field pattern and covers a large proportion of the study area. This can also be said of the Industrial estates</p> <p>The locality experiences strong transport infrastructure with A and B class roads acting as the links between built settlements.</p> <p>Public footpaths and trails scatter the local area, meandering through farms and following the river bank.</p>
Diversity	<p>The flat nature of the immediate local topography and the wider assortment of buildings / infrastructure within the industrial area, the mixture of small single farmsteads and hamlets, and different sized arable / improved grassland fields combine to create a diverse landscape that, aesthetically, meets with the general character of the Wentloog levels and the suburbs of Cardiff.</p> <p>Within the wider study area, there is a significant amount of urbanisation in the form of Cardiff, this brings with it all the hustle, bustle and colour that makes up a city of this size and prominence.</p> <p>Vegetation diversity is enhanced by the native field boundaries and occasional woodland copses found to the edge of Cardiff that weave through the landscape, also the gardens / parks created as part of the urbanisation of the area provide a range of different landscape types, that stand alongside the River Severn Estuary.</p>
Scale	<p>Field boundaries, drainage ditches / reens and the occasional tree belts in the wider study area break up the expanse of agricultural land to create smaller scale farms which form the local landscape. The sense of scale within the site is restricted to the east, south and west by the vegetated boundaries and the industrial buildings, but the northern boundary is open and expansive.</p> <p>Expansive views are found from the higher ground in the suburbs of Cardiff and the raised river defences where the Wales Coast Path follows the edge of the River Severn, these views tend to look out over the River Severn estuary over to England. There are also views back to Cardiff and the ridge at Caer Castell from the Wales Coast Path.</p>
Form and Line	<p>There are many horizontal elements in close proximity of the site and the Wentloog Corporate Park as there are many tall boxy industrial units, and the infrastructure relating to mainline railway. The suburbs of Cardiff and the way the houses rise with the natural topography in Rumney up to the ridge at Caer Castell also means many of the houses</p>

Table 9: Aesthetic Factors	
Form and Line Continued	<p>are visible, bringing unnatural shapes. All this built form contrasts with the simple and flat agricultural landscape / grasslands, roads and footpaths of the Wentloog Levels.</p> <p>The adjacent wind turbine at 120m tall stands as the tallest vertical element in the study area, this is visible from most places. To the southwest of the study area along Rover Way are several tall buildings associated with a company called Celsa who work with Steel. Two lines of tall pylons run from Cardiff up the coast to Newport along the flat open plain of the Wentloog levels. These are all manmade elements that were visible on the horizon in the distance from a lot of places.</p> <p>Mature field boundaries on the Wentloog Levels and woodland copses found to the edge of Cardiff that are composed of various native/naturalized tree and shrub species, provide softening to the manmade structures and in several cases create an intermediate transition between the built form and the surrounding landscape.</p> <p>The River Severn estuary is a very definitive boundary in the south eastern quarter of the study area.</p>
Colour	<p>Natural greens, browns and yellows of the rural countryside, dominate the background landscape to the southeast through to the south west and are a strong contrast to the angular tall industrial area of which the site sits within and the houses viewed to the northwest to northeast. A myriad of colours ranging from browns, reds, blacks, greys and to other unnatural colours come through from the suburbs of Cardiff and the nearby industrial estates.</p> <p>Due to the nature of the surrounding landscape these colours continue to change throughout the seasons.</p>
Movement	<p>Animation is brought to the landscape in the immediate area of the site via the wind turbine and the mainline railway with its frequent services. Within the wider study area, the urban development of Cardiff and adjacent industrial sites that have infrastructural links such as roads, amenities, industrial areas, churches and recreational areas provide an interjection of movement.</p> <p>Seasonal and weekend peaks in activity would see a different type of user to the week days with visitors using local trails, footpaths, golf courses and various activities related to the River Severn both on its banks and in the water. In the week the presence of the large industrial area surrounding the site would be a hive of activity for the daily commute of workers and the many lorries that provide transport / logistic services.</p> <p>Dominant agricultural practices add to the informal and relaxed feel of the lower Wentloog levels in the background.</p>

4.11 Transport Links

4.11.1 The Site Transport Links

4.11.2 Access to the site is gained via the existing road system specifically Newlands Road to the south of the site, Newlands Road then links to Wentloog Road (B4239) to the south, a well-used B road of the area linking up several industrial estates and farms of the Wentloog Levels.

4.11.3 Study Area Transport Links

4.11.4 A very strong network of minor and major roads exists within the study area due to the fact that a significant portion is covered by Cardiff and its eastern suburbs. These roads connect up all the various villages with Cardiff. The B4239 runs closest to site in the south approximately 0.4km away, this runs in a mainly east to west direction. The A4232 runs closest in the west at 2.4km away and the A48(M) runs closest in the north at 2.6km away.

4.11.5 The South Wales main line railway between Cardiff and London, forms the northern boundary of the site running in a northeast to southwest direction as identified on ALD837/LD1001 RevP01

4.12 Landscape Dynamics

4.12.1 The landscape is continually changing and evolving, mainly in response to the demands placed upon it, but sometimes due to the lack of management. An examination of the likely changes to the landscape as a whole is important in setting the context of potential changes caused by the proposed development. It may also identify opportunities the proposed development may create for positively improving the landscape, whilst also preventing change considered to create a negative impact.

4.13 Classification and Evaluation

4.13.1 The above appraisal concludes that the classification of the existing landscape as part of the Landscape Character Area is an accurate reflection of the character of the site.

4.13.2 The below illustrates how these criteria have been appraised to achieve an assessment of the area's sensitivity.

Table 10:	
Landscape Elements	Description
Quality	<p>The proposed site is situated within the Gwent Levels – Rumney and Peterstone Site of Special Scientific Interest (SSSI) and it lies adjacent to an Historic Landscape Area (also classed as a Site of Important Nature Conservation (SINC)) however it is not representative of the traditional aspirations of any of these important landscape designations. It sits within the Wentloog Corporate Park, a large industrial estate.</p> <p>The site currently functions as a scrub field that is grazed by several ponies, it is classed as previously developed land / Brownfield and has been vacant for many years.</p> <p>The site is scientifically poorer quality to the surrounding wider landscape in the study area as it has been previously developed, then remediated and left for nature to take over, this is at odds to the Industrial Estate it sits within and the wider agricultural farms that are managed and relatively well maintained. The landscape quality for the proposed site is rated as low.</p>

Table 10:	
Landscape Elements	Description
Value	The landscape of site has been assigned poor landscape value rating, at its importance is only relevant on a very local level, the site has only one redeeming feature its mature western boundary so there is significant room for improvement.
Condition	The landscape of site has been assigned a low condition rating due to its scrub / brownfield nature, as stated with value above it has only one redeeming feature its mature western boundary so there is significant room for improvement.
Capacity	The rating of moderate for landscape capacity has been applied, as the character area can accommodate a degree of change without significant effect on its character.
Compatibility	<p>The development site falls within Gwent Levels – Rumney and Peterstone Site of Special Scientific Interest (SSSI), it doesn't fall within any other designations. From within the site there are long views to the north / northwest towards Rumney and Trowbridge, to the east and south there are short range views mainly towards other developments along Newlands Road and the Industrial estates along Wentloog Avenue (B4239) beyond.</p> <p>The site is currently scrub / brown field in nature having previously been developed (see section 4.9.7) it is now allocated in the Cardiff Local Development Plan as being for future development of an industrial context, which would be compatible with the immediate surrounding environment.</p> <p>The presence of existing built form (settlements, wind turbine, mainline railway and industrial areas) some of significant mass (breaking the skyline with both buildings and infrastructure), in close proximity to the site make these proposals compatible with the existing environment and study area as a whole. Although localised visual changes may be different to those currently experienced due to the potential height of such a development in particular from the immediate fields to the north of the site.</p>
Scope for Mitigation	The proposed development provides limited opportunity for a landscape and ecological enhancement strategy to be implemented.
Overall landscape sensitivity of the site = Low	

BASELINE STUDY: VISUAL ASSESSMENT

FIVE

5.1 Visual Baseline

5.1.1 Introduction

5.1.2 In order to assist with viewpoint selection, as well as to appreciate the potential influence of the development in the wider landscape and to indicate areas where views into the site might be possible, a desk study of the area's topography, mature vegetation, settlements, recreational facilities and footpaths was undertaken. The information obtained from this provided a selection of viewpoints that offered long distance, middle distance and glimpsed views of the site. This selection of potential viewpoints, were then visited and assessed for their overall potential sensitivity to the potential Energy Recovery Facility (ERF) development, during and after construction. Other viewpoints identified as important were added during the field work.

5.1.3 This section briefly describes issues specifically relevant to visual matters both within the site and in the context of the general study area. Specific reference should also be made to the Photographic Viewpoints for Assessment (drawings ALD837/LD1012 to 1033 RevP01), contained within the Appendices.

5.1.4 This section represents the findings of the Applied Landscape Design visit in July 2019 and February 2020 and the desk study. It was apparent when out in the field undertaking the site survey that, in particular the undulating landform, settlement and landcover altered and in many cases blocked views to the site that were thought to be evident within the desk study assessment.

5.1.5 Views from throughout the study area were established on site with particular focus on views from within 2km of the site, further views could be found beyond the 2km but this was harder to predict as the urban nature of most of the study area meant buildings and larger street trees often blocked views. Refer to drawing ALD772/LD1005 RevP01

5.1.6 During the site visit the settlements of Peterstone Wentlooge and Marshfield plus the urban areas of Cardiff such as St Mellons, Pengam and Llanderyn and significant portions beyond the urban edge, were all visited on foot from the local Public Rights of Ways or on roads. Views of the site could not be established from these points from the ground floor, nevertheless that does not rule out the possibility that they might be seen from upper storeys within buildings as the ZTV on drawing ALD837/LD1007 shows this to be a possibility. However, this does not form part of this assessment as these buildings are not accessible due to being on private land and cannot be used in the assessment.

5.2 Viewpoints

5.2.1 These viewpoints offer views that may be particularly sensitive to change. These could be associated with areas used regularly by the public, such as footpaths, roads and recreational areas or might be a single house, edge of village that has clear views of the proposed area. The viewpoints also represent

areas which may be perceived to be sensitive to the visual impact of the proposed development but which in reality have restricted views of the site.

5.2.2 Viewpoint 1

5.2.3 This viewpoint is taken from Newlands Road, adjacent to the Reynold Couplings site, approximately 43m to the east of the site. Views from this location are constrained to short distance views by boundary vegetation growing upon the bund to the southern and eastern boundaries of the site. The boundary fence to the Reynold Couplings site restricts views towards the northeast; filtered views towards the boundary hedgerows and trees abutting the Mainline Railway can be glimpsed through this boundary fence. Industrial elements in the form of electricity transmission pylons and infrastructure associated with the Mainline Railway can be seen breaking the skyline beyond the site close to the centre of the view.

5.2.4 This viewpoint's sensitivity has been rated as **low** due to the industrial estate location.

5.2.5 Viewpoint 2

This viewpoint is taken from Newlands Road, adjacent to the start / end of the PRoW. The viewpoint is located approximately 25m to the south of the site. Views from this location are generally constrained to short to middle distance views within the industrial estate, vegetation growing upon the bund to the southern boundary of the site obscures views of the site interior from this location. The building within the Reynold Couplings site can be seen further along Newlands Road, construction vehicles stored within the Reynold Couplings site can also be seen above intervening vegetation. The skyline is broken by lamp posts along Newlands Road as well as an electricity transmission pylon beyond the site. Infrastructure associated with the Mainline Railway can be glimpsed beyond the site. Glimpsed long distance views of hilltops in the north of the study area can be seen.

5.2.6 This viewpoint's sensitivity has been rated as **low** due to industrial estate location.

5.2.7 Viewpoint 3

5.2.8 This viewpoint is taken from the footbridge crossing the Mainline Railway approximately 127m to the west of the site. Views in this direction are primarily of the Mainline Railway and associated infrastructure. Vegetation along the southern railway embankment including mature trees and dense understory obscures views towards the site. Filtered views of Pinewood Studios can be seen through intervening trees. Some views of the site interior can be seen beyond the Mainline Railway and above the fence and vegetation to the northern boundary of the site. The Reynold Couplings site including the building, vehicles and storage area can be seen beyond the site. An electricity transmission pylon breaks the skyline as well as lighting columns within the Freightliner site to the north east.

5.2.9 This viewpoint's sensitivity has been rated as **moderate**.

5.2.10 Viewpoint 4

5.2.11 This viewpoint is taken from the footpath running between the site and the adjacent Pinewood Studios site approximately 22m to the west of the site. Views are constrained to short distance linear views along the route of the footpath by vegetation consisting of mature and semi-mature trees and a dense understory. To the south of the footpath a steel palisade security fence separates the footpath from the adjacent Pinewood Studios site. Glimpsed, filtered views of the upper elements of infrastructure

associated with the Mainline Railway can be seen through branches of the intervening trees in the centre of the view.

5.2.12 This viewpoint's sensitivity has been rated as **moderate** due to industrial estate location.

5.2.13 Viewpoint 5

5.2.14 This viewpoint is taken from Newlands Road close to the entrance to the Balfour Beatty Utility Solutions site approximately 220m to the south east of the site. Views from this location are limited to short to middle distance views within the industrial estate by mature trees and established hedges adjacent to Newlands Road. The driveway to a single residential property can be seen within the view, however the residential property is entirely screened from view by an intervening small wooded copse including mature coniferous trees. Filtered views of the upper elements of the Pinewood Studios building can be seen through intervening trees and above the boundary palisade fence. There are no views of the application site from this location as it is entirely screened from view by intervening trees and vegetation. A lamppost and telegraph pole adjacent to Newlands Road break the skyline.

5.2.15 This viewpoint's sensitivity has been rated as **low** due to industrial estate location.

5.2.16 Viewpoint 6

5.2.17 This viewpoint is taken from the roundabout between Wentloog Avenue and Lamby Way close to the entrance to the carpark for Parc Tredelerch and opposite the entrance to the Cardiff Household Waste Recycling Centre (HWRC). The viewpoint is approximately 1926m to the south west of the site. Views from this location are of the short to middle distance with glimpsed views of more distant tree tops along the route of Wentloog Avenue. Views are generally limited by mature trees and shrubs planted adjacent to Wentloog Avenue and Lamby Way. On the opposite side of Lamby Way to the viewpoint a pond site in a depression in the landscape with established tall grasses, shrubs and mature trees surrounding it. Beyond the pond, a dilapidated billboard is visible. Filtered views of industrial buildings on the HWRC site and along Lamby Way can be seen through bare branches on the intervening trees. Lampposts and telegraph poles break the skyline throughout the view. No views of the site are possible from this location.

5.2.18 This viewpoint's sensitivity has been rated as **moderate**.

5.2.19 Viewpoint 7

5.2.20 This viewpoint is taken from Mardy Road at the road bridge over the Mainline Railway approximately 1370m to the south west of the site. The viewpoint is elevated above the landscape to the north east which allows medium to long distance views over the rooftops of residential properties on 'The Avenue'. Short to middle distance views are of roadside vegetation including trees and shrubs as well as views of the residential properties off The Avenue and the associated gardens. The mainline railway crosses the view, forming a visual break between the residential properties and views of industrial units beyond on Spring Meadow Road. The industrial building of Elmatic Cardiff breaks the skyline beyond the residential properties forming a prominent vertical feature within the landscape. An electricity transmission pylon and the wind turbine adjacent to the application site break the skyline in the middle distance. Views of the application site are screened by intervening built form and trees.

5.2.21 This viewpoint's sensitivity has been rated as **moderate**.

5.2.22 Viewpoint 8

5.2.23 This viewpoint is taken from Rover Way, adjacent to Pengam Green close to the entrance to the pumping station and the entrance to a caravan / traveller's site. The viewpoint is approximately 3220m to the south west of the site. Views from this location are open, unrestricted views. To the north and north east views include open space and in formal grazing in the short distance. In the middle distance the upper elements and roof of Pengam Green Tesco Extra store as well as the roofs of some residential properties are visible; intervening landform screens views of the lower elements of both of these. To the north and northeast, long distance views of hilltops are visible beyond the built form. The view is dissected by electricity transmission pylons which sit within Pengam Green and the landscape beyond. The wind turbine adjacent to the application site is visible breaking the skyline above intervening landform close to the centre of the view. The boundary wall and buildings associated with the pumping station screen views towards the Severn Estuary to the east. Glimpsed views of buildings and vehicles stored on the nearby traveller's site can be seen from this location. The application site is screened from view by intervening vegetation.

5.2.24 This viewpoint's sensitivity has been rated as **moderate**.

5.2.25 Viewpoint 9

5.2.26 This viewpoint is taken from Greenway Road at the edge of the recreation ground approximately 1120m to the west of the site. The viewpoint looks over the recreation ground which is primarily open grassland with a footpath running roughly parallel to Greenway Road. The edge of a formal play area within the recreation ground is visible. Middle distance views include residential properties and Eastern High School to the east which are visible above and between intervening shrubs, trees and hedges. An industrial unit off Heron Road can be seen to the south beyond an area of ruderal vegetation. Filtered views of infrastructure associated with the Mainline Railway can be glimpsed in the distance. The wind turbine adjacent to the application site can be seen breaking the skyline as well as a row of electricity transmission pylons which crosses the view. The application site is screened from view by intervening vegetation and landform.

5.2.27 This viewpoint's sensitivity has been rated as **high**.

5.2.28 Viewpoint 10

5.2.29 This viewpoint is taken from the junction between Llangwm Place and Rhyl Road approximately 1330m to the west of the site. The view looks down Rhyl Road towards the application site. The elevated landform at the location of the viewpoint allows long distance views over the rooftops of residential properties towards the application site and beyond towards the Severn Estuary with hilltops in Somerset forming the horizon line. The residential properties which run parallel to Rhyl Road have windows which face perpendicular to the road and the application site, however views from the gardens associated with these properties may include the application site. The mainline railway is visible in the distance crossing the view, rooftops of industrial units on the Wentloog Corporate Park are visible, though filtered, through intervening trees. The wind turbine adjacent to the application site is visible, breaking the skyline. Electricity transmission pylons are visible throughout the long-distance elements of the view, some break the skyline, however the majority sit below the horizon line from this location. The site is not visible from this location.

5.2.30 This viewpoint's sensitivity has been rated as **moderate**.

5.2.31 Viewpoint 11

5.2.32 This viewpoint is taken from the recreation ground off Harris Avenue at the entrance from Harris Avenue approximately 950m to the west of the site. The view looks over the recreation ground which is primarily open grass with a tarmac footpath running through it. A hedge with intermittent hedgerow trees separates the recreation ground from pastoral agricultural land which lies between the recreation ground and the Mainline Railway. Infrastructure associated with the Mainline Railway is visible between breaks in intervening trees and hedges. The footbridge crossing the Mainline Railway (location of viewpoint 3) is visible above intervening trees. Residential properties off Bro Athro and Valley View can be seen to the east. The ALDI regional office and distribution centre can be seen breaking the skyline above intervening vegetation and built form to the south. The wind turbine adjacent to the application site can be seen breaking the skyline close to the centre of the view. A row of electricity transmission pylons crosses the view in the distance breaking the skyline. The application site is screened from view by intervening trees and hedgerows.

5.2.33 This viewpoint's sensitivity has been rated as **high**.

5.2.34 Viewpoint 12

5.2.35 This viewpoint is taken from Caer Castell Place, a residential street, approximately 1155m to the north west of the application site. The elevation of the viewpoint allows clear panoramic views to the east, south east and south. The viewpoint looks over residential properties in the short to middle distance as well as Eastern High School. The recreation ground off Greenwood Way / Harris Avenue is visible in the middle distance as well as the pastoral agricultural land to the north of the Mainline Railway. Industrial units on Wentloog Corporate park and Capital Business Park are clearly visible above intervening trees, hedgerows and built form. Clear views of the Severn Estuary are visible from this location as well as upland areas on the English side of the Estuary. The wind turbine adjacent to the application site breaks the skyline in the centre of the view, forming a break in the view across the Severn Estuary. The application site is screened from view by intervening trees.

5.2.36 This viewpoint's sensitivity has been rated as **high**.

5.2.37 Viewpoint 13

5.2.38 This viewpoint is taken from a footpath off Hendre Road crossing open space towards the recreation ground off Greenwood Road / Harris Avenue. The viewpoint is approximately 480m to the north of the application site. Views from this location are short to middle distance views across the open space towards boundary hedgerows and intermittent mature trees which separate the open space from the Mainline Railway. Filtered views of industrial buildings on the Wentloog Corporate Park are visible through intervening trees and between breaks in vegetation. An electrical substation is visible to the south and electricity transmission pylons are visible throughout the view breaking the skyline. The wind turbine adjacent to the application site is visible through and above two mature trees in the centre of the view. The application site is screened from view by intervening trees and hedgerows.

5.2.39 This viewpoint's sensitivity has been rated as **high**.

5.2.40 Viewpoint 14

5.2.41 This viewpoint is taken from Hedre Lake Park approximately 1495m to the north east of the application site. Views from this location are generally constrained to short to middle distance views within the park by boundary vegetation including mature trees and hedgerows. The view is focussed upon the lake which and a small island at its centre. A circular footpath which surrounds the lake can be seen on the

opposite shore. Views of infrastructure associated with the Mainline Railway including a freight crane can be seen above and between intervening vegetation. The wind turbine can be seen breaking the skyline in the centre of the view. Lighting columns within the Freightliner site can be seen breaking the skyline. The application site is screened from view by intervening vegetation.

5.2.42 This viewpoint's sensitivity has been rated as **high**.

5.2.43 Viewpoint 15

5.2.44 This viewpoint was taken from Heol Las Lane from the road bridge which crosses the Mainline Railway. The viewpoint is approximately 2370m to the north east of the application site. Due to the elevation of the road bridge views from this location are open, panoramic views across the study area. Short distance views include the agricultural fields and the Mainline Railway which dissects the view. The middle-distance views are primarily of hedgerows and hedgerow trees through which glimpsed, filtered views of the agricultural fields they surround can be seen. Elevated areas of the built form of Cardiff can be seen to the west including the approximate location of viewpoint 12. Industrial units on Wentloog Corporate park are visible in the distance between breaks in and above intervening trees. The wind turbine adjacent to the application site is visible breaking the skyline. Hills and elevated landform towards the west of the study area can be seen forming the horizon line in parts of the view. Electricity transmission pylons are visible throughout the view, breaking the skyline at short, middle and long distances. The application site is screened from view at this location by intervening vegetation and built form.

5.2.45 This viewpoint's sensitivity has been rated as **moderate**.

5.2.46 Viewpoint 16

5.2.47 This viewpoint is taken from Mardy Road, opposite Sea Bank Farm at a farm gate which forms a break in the hedgerow adjacent to mardy Road. The viewpoint is approximately 1315m to the south west of the application site. The viewpoint looks over an agricultural field currently used as pasture. The view is generally constrained to short to middle distance views across the field. Views of the ALDI regional office and distribution centre are possible above and between intervening trees and hedgerows. Soil piles at the Neal Soil Supplies site can be seen above the intervening hedge. The wind turbine adjacent to the application site can be seen breaking the skyline in the centre of the view. There are no views of the site from this location.

5.2.48 This viewpoint's sensitivity has been rated as **moderate**.

5.2.49 Viewpoint 17

5.2.50 This viewpoint is taken from a layby off Wentloog Avenue approximately 465m to the south west of the site. The view looks over a low section of ruderal vegetation towards the application site. Views are generally constrained to short distance views within the layby and along Wentloog Avenue a section of dilapidated fencing and a lamppost can be seen within the layby. The Pinewood Studios building can be seen above the intervening vegetation in the centre of the view. The wind turbine adjacent to the application site can be seen breaking the skyline. There are no views of the application site from this location.

5.2.51 This viewpoint's sensitivity has been rated as **low**.

5.2.52 Viewpoint 18

5.2.53 This viewpoint is taken from Wentloog Avenue looking west across agricultural fields towards the application site. The viewpoint is approximately 1400m to the east of the application site. The view looks over a drainage channel which separates Wentloog Avenue from the agricultural fields. Views towards the site are partly screened by intervening hedgerows and trees, however industrial units on the Wentloog Corporate Park are visible between breaks in vegetation. The wind turbine adjacent to the application site is visible breaking the skyline. A row of electricity transmission pylons crosses the view from the middle to long distance, breaking the skyline. Long distance views of elevated topography in the north of the study area are possible.

5.2.54 This viewpoint's sensitivity has been rated as **moderate**.

5.2.55 Viewpoint 19

5.2.56 This viewpoint is taken from the Wales Coastal Path adjacent to the Peterstone Great Wharf, approximately 1785m to the east of the application site. At this location the path runs on top of a raised embankment which provides open panoramic views across the Severn Estuary as well as views inland towards the application site and hills beyond. Views in the short distance are comprised of areas of agricultural land crossed by a network of drainage channels and intermittent hedgerows. A dilapidated barn sits in the field adjacent to the viewpoint. Other isolated buildings are visible within the agricultural areas in the view. Industrial buildings on the Wentloog Corporate Park are visible above intervening trees and hedgerows. Residential properties to the fringe of Cardiff are visible in long distance sections of the view particularly those on elevated landform. The wind turbine on land adjacent to the application site is visible breaking the skyline. There are no views of the application site from this location.

5.2.57 This viewpoint's sensitivity has been rated as **high**.

5.2.58 The table below summarises the sensitivity of the viewpoints

Table 11 – Viewpoints Summary				
Viewpoint	Location	Distance from Site (approx.)	Potential Designations / Receptors	Sensitivity
Viewpoint 1	On Newlands Road, immediately southeast of site and adjacent to the entrance of Reynold Couplings looking southwest to north.	Adjacent to the site (43m).	Personnel and visitors to Wentloog Corporate Park, SSSI.	Low
Viewpoint 2	On Newlands Road, immediately south of site at the point where footpath connecting to Trowbridge meets the road looking north.	Adjacent to the site (25m).	Personnel and visitors to Wentloog Corporate Park, SSSI.	Low

Table 11 – Viewpoints Summary				
Viewpoint	Location	Distance from Site (approx.)	Potential Designations / Receptors	Sensitivity
Viewpoint 3	On the pedestrian railway crossing and the footpath linking the suburbs of Trowbridge and Pwll-Mawr looking east.	Approx. 127m from site.	Users of the local PROW network.	Moderate
Viewpoint 4	On footpath on the western corner of site, to the north of Pinewood Studio Wales, looking northeast.	Adjacent to the site (22m).	Users of the local PROW network, SSSI.	Moderate
Viewpoint 5	To the south of the nearest residential property adjacent to the site (Newlands Farm) on Newlands Road, looking north to northwest.	Approx. 220m from site.	Personnel and visitors to Wentloog Corporate Park, SSSI, Listed Building and residents.	Low
Viewpoint 6	From the roundabout at the junction of Lamby Way and Wentloog Avenue looking northeast.	Approx. 1926m from site.	Drivers of the local road network.	Moderate
Viewpoint 7	On the Mardy Road at the road bridge (SWM2 167m 10C) over the mainline railway looking east to northeast.	Approx. 1370m from site.	Drivers of the local road network residents of Rumney.	Moderate
Viewpoint 8	Standing up on an elevated grass bank next to the Rover Way adjacent to Pengam Green, looking up the road northeast towards site.	Approx. 3230m from site.	Drivers of the local road network and SINC	Moderate
Viewpoint 9	On the Greenway Road in Rumney, adjacent to the recreation ground and children's play area, looking east.	Approx. 1120m from site.	Residents of Rumney, drivers of the local road network and users of the recreation ground	High
Viewpoint 10	On the Greenway Road in Rumney, adjacent to the recreation ground and children's play area, looking east.	Approx. 1330m from site.	Residents of Rumney and drivers of the local road network.	Moderate

Table 11 – Viewpoints Summary				
Viewpoint	Location	Distance from Site (approx.)	Potential Designations / Receptors	Sensitivity
Viewpoint 11	Just off Harris Road (Rumney) at the entrance to the recreation ground, looking southeast.	Approx. 950m from site.	Residents of Rumney, drivers of the local road network and users of the recreation ground	High
Viewpoint 12	At a local highpoint in Caer Castell Place looking south to southeast across site and to England beyond.	Approx. 1155m from site.	Residents of Rumney and drivers of the local road network.	High
Viewpoint 13	On the Hendre Road where it turns into a track and follows the Pil-du Reen, at this point a local footpath crosses the track, looking south to southwest.	Approx. 480m from site.	Residents of Trowbridge, drivers of the local road network, SSSI, Special Landscape Area and walkers in the area.	High
Viewpoint 14	On the eastern edge of Hendre Lake Park, looking across the water southwest towards site.	Approx. 1495m from site.	Visitors to Hendre Fishing Lakes and SSSI	High
Viewpoint 15	On the Heol Las Lane at the road bridge over the mainline railway looking southwest down the railway line.	Approx. 2370m from site.	Drivers of the local road network, SSSI, Green Belt, Special Landscape Area	Moderate
Viewpoint 16	To the east of Sea Bank Farm on the Mardy Road, at a field gate looking northeast.	Approx. 1315m from site.	Drivers of the local road network, residents of Mardy Road, SSSI and Special Landscape Area.	Moderate
Viewpoint 17	In a lorry layby on Wentloog Avenue (B4239) at the junction with Newton Road looking northeast.	Approx. 465m from site.	Drivers of the local road network and SSSI	Low
Viewpoint 18	At a low place in the hedgerow on Wentloog Avenue (B4239) to the west of Sluice House Farm looking northwest.	Approx. 1400m from site.	Drivers of the local road network, SSSI, Green Belt, Special Landscape Area.	Moderate

Table 11 – Viewpoints Summary				
Viewpoint	Location	Distance from Site (approx.)	Potential Designations / Receptors	Sensitivity
Viewpoint 19	On the Wales Coast Path at an informal access point off Wentloog Avenue (B4239) adjacent to Peterstone Great Wharf looking northwest.	Approx. 1785m from site.	Users of the PROW network (Wales Coast Path), SSSI, Green Belt, Special Landscape Area.	High

ASSESSMENT OF EFFECTS

SIX

6.1 Key Development Characteristics

- 6.1.1 The proposed development is broken down into component parts and described in the introduction to this report in paragraph 1.4.
- 6.1.3 The proposed building pattern / design in elevational and visual representations adopts what's been termed 'bird's nest' and are shown on the submitted drawings. The design uses fractured and coloured panels that take a triangular form. Different variations of green colour and along with the angular pattern of the design seek to break up the mass of the building and is designed to blend with the predominant colour palette of the building's surroundings. At the higher levels the colouring is blended to the paler colouring of the sky and estuary in the background, at the lower levels it is darker in greens and greys more akin with the industrial units and local vegetation.
- 6.1.4 There are two access points onto site, the first access to the site is gained directly off Newlands Road, the second is off a small side road in the northern corner of the site. The building will site central to the plot, with an internal haul road external to but within the site boundary.
- 6.1.5 Provision is included for 12 car parking spaces and 2 accessible spaces, in the northern part of the site, to the south of the railway line
- 6.1.6 The facility would operate continuously, 24 hours per day and 7 days per week, with approximately 25 staff on a 3-shift system, however feedstock deliveries and materials removal would be restricted to times between 6.00am to 6.00pm Monday to Friday and 7.00am to 1pm Saturdays.
- 6.1.7 The site is proposed to be surrounded by fencing around the perimeter, thereby enhancing safety and security.
- 6.1.8 It is anticipated that most of the time there will be a basic level of illumination comparable to modern street lighting during the night, it is envisaged there will be up to three kinds of lighting:
- Safety and security lights: on all the time during night;
 - Area specific lights: they will turn on as and when needed;
 - Emergency lighting: would only come on when the normal lighting would completely fail.
- 6.1.9 The ditch on the western boundary is to remain, as will its existing vegetation to leave this boundary green. It is also proposed that the northern and southern boundaries will be greened with a slim band of vegetation as space allows.

6.1.10 It is anticipated that construction will commence in Spring 2021 and will take place over a period of 36 months with completion estimated by Spring 2024.

6.1.11 The plant would be expected to operate for the next 25 years at the end of which it would be decommissioned safely. The hardstanding could be broken up and recycled, used again in future developments.

6.2 Introduction to Construction Phase Effects

6.2.1 The main landscape impact associated with the construction would include:

- Nominal and temporary adverse landscape impacts on aesthetic and perceptual attributes of the surrounding landscape character areas, through increased vehicular traffic;
- Nominal and temporary adverse landscape impacts on tranquillity through increased vehicular traffic and the construction on site;
- Adverse impact on the landscape due to the potential presence of additional lighting associated with construction;
- Loss of some landscape features and the naturalised bunds;
- Loss of an area that is currently scrub / brownfield land, and
- The site will use an existing access road adjacent to it, so no extra surface materials required.

6.3 Introduction to Construction Phase Visual Effects

6.3.1 The main visual impact associated with the construction would include:

- Adverse visual impacts on the closer viewpoints due to the visibility of elements associated with construction, including construction machinery and construction materials;
- Adverse visual impacts from increased construction traffic to and from the development including large construction vehicles;
- Adverse visual impact of cranes and other associated temporary machinery of height during the build that will regularly break the skyline;
- Adverse impact from viewpoints in close proximity to the application site due to the presence of lighting associated with construction;
- Adverse visual impact due to the introduction of additional solid built form on an otherwise perceived green site;
- Adverse visual impact of machinery / building materials that are not from the 'natural' colour pallet found in the area, and
- Adverse visual impact due to a significant increase in movement on a site that is still at this point.

6.4 Introduction to Operational Phase Effects

6.4.1 The main landscape impact associated with the development (see section 6.5) relate to the change of land use and the introduction of the of built form into the site. As the land is currently brownfield and has been designated for development the change of landuse is considered to be a positive impact. The introduction of built form into the site will be an introduction of further characteristic elements into the

landscape which is already defined by its industrial location. The tallest element is the stack at 70m, with the Boiler Parapet being 46.45m. The physical elements of change and effect on the landscape are limited to:

- Loss of an area that is currently scrub / brownfield land;
- Increased human activity on site;
- Adverse impact of lighting on site; and
- Introduction of built form characteristic to the surrounding area into the site.

6.5 Introduction to Operational Phase Visual Effects

6.5.1 The main landscape impact associated with the development would be an increase in built form due to the Energy Recovery facility including:

- Adverse impact from viewpoints in close proximity to the application site due to the increase in built form (70m stack, 46.45m Boiler Parapet and a 37.5m Waste Bunker) these elements will break the skyline within surrounding views;
- Adverse impact from viewpoints in close proximity to the application site due to the increase in solidity of built form and reduction of openness;
- Adverse visual impacts from the increased illumination of the site;
- Positive visual impact from the site changing use from a brownfield site to an industrial site in keeping with the surrounding land use;
- Positive visual impact from the site being taken from unkempt with ruderal vegetation across the site and inactive frontage to a site in use with a high standard of design to the primary building upon the site;
- Positive visual effect of the site once operational is that the soft landscape will be maintained and managed, with new planting being introduced to the site boundaries as opposed to the current scrub / brown field.

MITIGATION OF EFFECTS

SEVEN

7.1 Introduction to Mitigation

- 7.1.1 Landscape and visual issues within the study area have been considered during the development's evolution to give priority towards the landscape and visual mitigation. This will ensure that a comprehensive and integrated approach is taken to the landscape proposals.
- 7.1.2 This section develops the outline landscape and visual mitigation strategy for the site. It aims to mitigate any landscape and visual impacts of the development which were identified in the previous section during the construction and operational phases.
- 7.1.3 The mitigation measures have been grouped as inherent and additional landscape and visual mitigation measures. Inherent landscape and visual mitigation measures are included in the strategy/design for the site and have been developed during the LVIA process.
- 7.1.4 Additional measures are related to the landscape around the final development boundary. These measures will be incorporated after construction.

7.2 Introduction to the Mitigation of Construction Phase Effects

- 7.2.1 Construction phase effect mitigation: landscape:
- Retention of more valuable landscape features within or on the ownership boundary line;
 - Fencing off existing landscape features to be retained. Where applicable, Trees in Relation to Construction BS 5837:2012 should be applied to protect root areas;
 - Where possible, use of fall cut-off lighting to reduce stray upward light and minimise light pollution;
 - Provision of 5m stand-offs in order to safeguard mature perimeter vegetation outside of site, and
 - The use of an existing road to bring all vehicles and equipment to site.
- 7.2.2 Construction phase effect mitigation: Visual
- Where possible, use of fall cut-off lighting to reduce stray upward light and minimise light pollution, and
 - Provision of 5m stand-offs in order to safeguard perimeter vegetation outside of site.

7.3 Introduction to the Mitigation of Operational Phase Effects

- 7.3.1 Operational phase effect mitigation: landscape inherent mitigation measures:
- Replacement of any perimeter vegetation lost through construction or operational activity to ensure the integrity of the vegetated site boundary. The planting palette should utilise 'like for like' species, and

- Additional mitigation measures: Use where possible of permeable surface materials in interests of sustainable urban drainage.

7.3.2 Operational phase effect mitigation: Visual inherent mitigation measures:

- Planting implemented to the boundaries of the site where existing boundary vegetation will be removed.
- The proposed building pattern / design in elevational and visual representations adopts what's been termed 'bird's nest' and are shown on the submitted drawings. The design uses fractured and coloured panels that take a triangular form. Different variations of green colour and along with the angular pattern of the design seek to break up the mass of the building, and is designed to blend with the predominant colour palette of the building's surroundings. At the higher levels the colouring is blended to the paler colouring of the sky and estuary in the background, at the lower levels it is darker more akin with the industrial units a local vegetation.

CUMULATIVE AND ADDITIVE EFFECTS

EIGHT

8.1 Cumulative Landscape Effects

- 8.1.1 The assessment of potential landscape impacts is primarily focused upon the proposed Energy Recovery Facility, placed within its landscape context. The general conclusion is that, in a localised context, landscape impacts would arise. However, when considered in an increasingly broad context, especially more than 2km distance from the site, these impacts are of moderate or minor significance. The extent within which this transition to minor / not significant would occur, is considered to be beyond the 2km distance from the application site due to the topography, positioning against a semi-rural background with industrial pockets and large areas of built form in amongst the natural landcover.
- 8.1.2 The character of the wider landscape would largely be unaffected by the addition of the Energy Recovery Facility and its supporting infrastructure, due to the fact that beyond 1.5km from the site its visibility decreases significantly thanks to the semi-rural background with industrial pockets and large areas of built form in amongst the natural landcover. The character of the area immediately surrounding the site is industrial due to the industrial units, Freightliner site, Mainline Railway and pylons. In a localised context, landscape character changes will be minor as the development is of comparable character (materials / landuse) to the industrial units and unnatural processes surrounding the site.

8.2 Cumulative Visual Effects

- 8.2.1 The assessment of potential visual impacts is, primarily, focused upon the proposed development, placed within its visual context. The general conclusion is that, in a localised context, potential visual impacts would arise, however when seen in an increasingly broad context, these impacts are of moderate / minor significance or not significant. The extent within which this transition to not significant would occur is considered to be within 3-4km of the application site.
- 8.2.2 The existing views within 2km of the application site all contain forms of similar developments and land use to the proposed development. Industrial units and railway infrastructure are prominent features within the majority of the views assessed. Furthermore, existing electricity transmissions pylons cross the majority of views, forming notable vertical detractors from views. Therefore, the introduction of the proposed development is anticipated to appear as an extension of the existing vernacular; particularly by receptors in the closest proximity to the application site.

8.3 The Broader Context

- 8.3.1 Any impacts relating to the development site are deemed not to be significantly adverse in the broader context of the landscape. Though agricultural land remains the dominant landscape type in the wider area, the existing built form in the shape of industrial areas / business parks, Mainline Railway and associated infrastructure as well as the urban fringe of Cardiff and the residential areas that form it comprises a substantial component in the broader context visually, meaning the area has already been subject to development / urbanisation.

8.4 Residual Effects: Introduction to Residual Effects

8.4.1 The potential landscape and visual effects of the proposed development on the surroundings, and in particular the views from viewpoints have been assessed through desktop studies and the site visit.

8.4.2 Residual Landscape Effects: Description of Residual Landscape Effects During Construction and Operational Phase

- Having assessed the landscape baseline of the proposal site and identified the potential elements of the development likely to cause change to that baseline, a detailed assessment of the possible changes can be made.
- Construction of the development proposals would result in the removal of existing agricultural areas and the use of an existing road. In the short term this would be replaced by construction activities for the erection of the infrastructure related to an Energy Recovery Facility. In the long-term, ancillary elements listed in the description of the development would be in situ, and
- Construction would not require any re-profiling of the internal and surrounding landscape, so effects on topography would not be significant and levels would be maintained in their current condition. The overall impact of construction on the landscape would be low.

8.4.3 Changes in Social and Cultural Factors

- The principal alteration to cultural and social factors would concern the commencement of construction activities within an already peri-urban area, and
- Upon completion, the development will introduce a similar style of built form into the area (industrial – as per the rest of the Wentloog Corporate Park, fronting onto a rural outlook). It is anticipated that there will be an increase in vehicular traffic to and from the site and it is unlikely to increase recreational visitor numbers as there will be nothing on offer to local residents. Cultural or social impacts are likely to be similar to those currently experienced by the existing surrounding settlements.

8.4.4 Changes in Aesthetics and Perceptual Aspects

- The recurrent visual form of the existing built environment from the semi industrial area (Freightliner site, existing industrial units, Mainline Railway and pylons) would render any effects from the proposed development as minor to moderate with the exception of limited effects of greater significance.
- The Energy Recovery Facility will add to the overall physical massing and height of the built environment within the area.

8.5 Residual Magnitude of Landscape Impacts Summary

- The predicted residual magnitude of landscape impacts of the development is localised in scale and restricted to the site and immediate environs up to 2km. This assessment is mainly due to the positioning on the edge of a semi industrialised area, the surrounding topography and land cover within the local environment;
- The localised nature of the landscape impacts mean that the proposed development would result in low adverse impacts on the wider landscape at a regional level;

- There will be no topographic/drainage alterations. Therefore, the site would not impact on the landscape quality of the area and would largely blend within the existing landform, and
- It is therefore concluded that the overall magnitude of the landscape impacts would be low.

8.6 Residual Visual Effects

8.6.1 Using the viewpoints identified in the visual baseline an assessment can be made of the potential magnitude of the visual change likely to be incurred through the proposed development.

8.6.2 Magnitude of Visual Impact

- For each of the viewpoints the potential magnitude of the residual visual impacts, taking into account each phase of the development and proposed mitigation, has been assessed. The magnitude of visual impacts is mainly dependent upon the following factors:
 - What proportion of the existing view that would change as a result of the development proposals?
 - How many features or elements within the view would be changed?
 - How appropriate is the proposed development in the context of the existing views?
 - How many viewers would be affected by the changes in the view?
 - What is the timescale of the proposed development? Also, is it continuous or intermittent?
 - What is the angle of the view in relation to the main activity of the receptor?
 - The magnitude of change is categorised as high, medium, low or negligible.

8.6.3 Magnitude of Residual Visual Change for Viewpoints

- The magnitude of change for each viewpoint was assessed for both construction and on completion.

8.7 Viewpoints

8.7.1 The location of the viewpoints, and a photograph of each of the viewpoints from the site visit in July 2019 and in February 2020, together with a description, are included within the Appendices towards the end of the document.

8.7.2 Viewpoint 1 – On Newlands Road, immediately southeast of site and adjacent to the entrance of Reynold Couplings looking southwest to north.

8.7.3 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see increased levels of activity onsite for the duration of the construction of the Energy Recovery Facility in the form of lorries and kit arriving and the build onsite.

- Due to the proximity of the site the overall impact would be **moderate** and temporary in nature due to the introduction of construction activities into the view.

8.7.4 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.5 Viewpoint 2 – On Newlands Road, immediately south of site at the point where footpath connecting to Trowbridge meets the road looking north.

8.7.6 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility in the form of heavy machinery and construction activity within the site.

- Due to the proximity of the site the overall impact would be **moderate** and temporary in nature due to the visibility of construction activities.

8.7.7 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development.

- The magnitude of visual impact of the proposed development is assessed to be **high** during construction, **moderate** upon completion.

8.7.8 Viewpoint 3 – On the pedestrian railway crossing and the footpath linking the suburbs of Trowbridge and Pwll-Mawr looking east.

8.7.9 Construction

Due to the location of the viewpoint in relation to the development site and view across overgrown hedgerows, scrub land and railway, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility.

- Due to the existing midground vegetation in the view between site and the viewer the overall impact would be **moderate**.

8.7.10 On Completion

Any view of the development on completion would be moderate from this view in part due to the distance from the site and the angle of the view and the vegetation / railway inbetween.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.11 Viewpoint 4 - On footpath on the western corner of site, to the north of Pinewood Studio Wales, looking northeast.

8.7.12 Construction

Due to the location of the viewpoint and this very channelled and directed view towards the site's western boundary it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility especially in times of leaf loss.

- Due to the tall unruly boundary between the site and the viewer the overall impact would be **moderate** and temporary in nature certainly for the summertime.

8.7.13 On Completion

Any view of the development on completion would be moderate from this view in part due to the distance from the site and the vegetated boundary in between.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.14 Viewpoint 5 – To the south of the nearest residential property adjacent to the site (Newlands Farm) on Newlands Road, looking north to northwest.

8.7.15 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see a significantly increased level of activity onsite for the duration of the construction of the Energy Recovery Facility in the form of lorries and kit arriving and the build of the higher sections onsite above the tree tops.

- Due to the proximity of the site the overall impact would be **moderate** and temporary in nature due to the construction activities within the site.

8.7.16 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development, but this would be to the higher sections of the development, not the ground level.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.17 Viewpoint 6 - From the roundabout at the junction of Lamby Way and Wentloog Avenue looking northeast.

8.7.18 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the midground vegetation and road.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.19 On Completion

Any view of the development on completion would be low due to the distance from the site combined with the solid and tall foreground vegetation.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **low** upon completion.

8.7.20 Viewpoint 7 - On the Mardy Road at the road bridge (SWM2 167m 10C) over the mainline railway looking east to northeast.

8.7.21 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the midground vegetation and housing.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.22 On Completion

Any view of the development on completion would be low, due to the busy scene in the foreground of houses, gardens, pylons and railway infrastructure. It's possible that only the uppermost portion of the building and the stack will be seen, and what will be seen will blend into the view.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **low** upon completion.

8.7.23 Viewpoint 8 - Standing up on an elevated grass bank next to the Rover Way adjacent to Pengam Green, looking up the road northeast towards site.

8.7.24 Construction

This is one of the longer distance viewpoints and due to the location of the viewpoint in relation to the development site, it would be possible to see a slightly increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above the midground vegetation and local mound.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.25 On Completion

Any view of the development on completion would be low due to the distance from the site. It is most likely that you can see the upper portion of what is installed onsite - the uppermost portion of the building and the stack.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **low** upon completion.

8.7.26 Viewpoint 9 - On the Greenway Road in Rumney, adjacent to the recreation ground and children's play area, looking east.

8.7.27 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the midground vegetation and railway infrastructure.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.28 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development, but this would be to the higher sections of the development, not the ground level.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.29 Viewpoint 10 - On the Greenway Road in Rumney, adjacent to the recreation ground and children's play area, looking east.

8.7.30 Construction

Due to the elevated location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the houses and midground vegetation / railway infrastructure.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.31 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development and the fact that both the building and the stack will break the skyline, the view would be limited to the higher sections of the development, not the ground level.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.32 Viewpoint 11 - Just off Harris Road (Rumney) at the entrance to the recreation ground, looking southeast.

8.7.33 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the midground vegetation and railway infrastructure.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.34 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development, but this would be to the higher sections of the development, not the ground level.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.35 Viewpoint 12 - At a local highpoint in Caer Castell Place looking south to southeast across site and to England beyond.

8.7.36 Construction

Due to the exceptionally elevated location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the houses and midground vegetation / railway infrastructure.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.37 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development and the fact that both the building and the stack will break the skyline, the view would be of the majority of the development.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.38 Viewpoint 13 - On the Hendre Road where it turns into a track and follows the Pil-du Reen, at this point a local footpath crosses the track, looking south to southwest.

8.7.39 Construction

The location of the viewpoint in relation to the development site and the views across flat fields with minimal human intervention means it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above the low level midground vegetation.

- Due to the existing landscape in the midground the overall impact would be **high** and temporary.

8.7.40 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development, the limited visibility of other buildings / unnatural materials and the fact that both the building and the stack will break the skyline.

- The magnitude of visual impact of the proposed development is assessed to be **high** during construction, **moderate** upon completion.

8.7.41 Viewpoint 14 - On the eastern edge of Hendre Lake Park, looking across the water southwest towards site.

8.7.42 Construction

The location of the viewpoint in relation to the development site and the views across the flat open lake environment means it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above the midground vegetation and the railway line.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.43 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development. The building and the stack will break the skyline, but this would be viewed above the trainline infrastructure of the lighting columns / buildings of the Wentloog Corporate Park

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.44 Viewpoint 15 - On the Heol Las Lane at the road bridge over the mainline railway looking southwest down the railway line.

8.7.45 Construction

This is one of the longer distance viewpoints and due to the location of the viewpoint in relation to the development site, it would be possible to see a slightly increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above the midground vegetation and the Wentloog Corporate Park.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.46 On Completion

Any view of the development on completion would be low due to the distance from the site, the view through the pylons and across Wentloog Corporate Park. It is most likely that you can see the upper portion of what is installed onsite - the uppermost portion of the building and the stack with the building sitting at either the horizon line or just above.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **low** upon completion.

8.7.47 Viewpoint 16 - To the east of Sea Bank Farm on the Mardy Road, at a field gate looking northeast.

8.7.48 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the midground vegetation and adjacent industrial buildings / soil heaps.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.49 On Completion

Any view of the development on completion would be low from this view due to the proximity of the view and height of the development, as this would be to the higher sections of the development, not the ground level through over and industrial estate.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.50 Viewpoint 17 - In a lorry layby on Wentloog Avenue (B4239) at the junction with Newton Road looking northeast.

8.7.51 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the roadside vegetation.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.52 On Completion

Any view of the development on completion would be moderate due to the viewpoint location on a fast moving road and layby combined with the tall foreground vegetation, it is likely only upper story views of the site will be seen.

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.53 Viewpoint 18 - At a low place in the hedgerow on Wentloog Avenue (B4239) to the west of Sluice House Farm looking northwest.

8.7.54 Construction

Due to the location of the viewpoint in relation to the development site, it would be possible to see an increased level of activity onsite for the duration of the construction of the Energy Recovery Facility above all the midground vegetation, pylons, business park and railway infrastructure.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.55 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development, the site is being viewed through pylons and over a business park but the upper portions of the site will be visible and break the skyline

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.56 Viewpoint 19 - On the Wales Coast Path at an informal access point off Wentloog Avenue (B4239) adjacent to Peterstone Great Wharf looking northwest.

8.7.57 Construction

Due to the elevated position of the viewpoint across from the development site it would be possible to see an increased level of activity onsite at points during the construction of the Energy Recovery Facility but only at the higher level.

- Due to the existing landscape in the midground the overall impact would be **moderate** and temporary.

8.7.58 On Completion

Any view of the development on completion would be moderate from this view due to the proximity of the view and height of the development, the site is being viewed from a slightly elevated position through pylons and over a business park but the upper portions of the site will be visible and break the skyline

- The magnitude of visual impact of the proposed development is assessed to be **moderate** during construction, **moderate** upon completion.

8.7.59 Table 12 summarises the cumulative and additive effects written within this chapter and formalise the potential significance of the landscape and visual impacts.

Table 12 – Summary of Effects					
Receptor	Sensitivity	Phase	Magnitude of Change	Type of Impact	Significance
Viewpoint 1	Low	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent change of character and use	Moderate / Minor
Viewpoint 2	Low	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent change of character and use	Moderate / Minor
Viewpoint 3	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent change of character and use	Moderate
Viewpoint 4	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent	Moderate
Viewpoint 5	Low	Construction	Moderate	Temporary	Moderate / Minor
		Completion	Moderate	Permanent	Moderate / Minor

Table 12 – Summary of Effects					
Receptor	Sensitivity	Phase	Magnitude of Change	Type of Impact	Significance
Viewpoint 6	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Low	Permanent	Moderate / Minor
Viewpoint 7	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Low	Permanent	Moderate / Minor
Viewpoint 8	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Low	Permanent	Moderate / Minor
Viewpoint 9	High	Construction	Moderate	Temporary	Major / Moderate
		Completion	Moderate	Permanent change of character and use	Major / Moderate
Viewpoint 10	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent change of character and use	Moderate
Viewpoint 11	High	Construction	Moderate	Temporary	Major / Moderate
		Completion	Moderate	Permanent change of character and use	Major / Moderate
Viewpoint 12	High	Construction	Moderate	Temporary	Major / Moderate
		Completion	Moderate	Permanent change of character and use	Major / Moderate
Viewpoint 13	High	Construction	High	Temporary	Major
		Completion	Moderate	Permanent change of character and use	Major / Moderate
Viewpoint 14	High	Construction	Moderate	Temporary	Major / Moderate
		Completion	Moderate	Permanent change of character and use	Major / Moderate
Viewpoint 15	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Low	Permanent	Moderate

Table 12 – Summary of Effects					
Receptor	Sensitivity	Phase	Magnitude of Change	Type of Impact	Significance
Viewpoint 16	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent change of character and use	Moderate
Viewpoint 17	Low	Construction	Moderate	Temporary	Moderate / Minor
		Completion	Moderate	Permanent change of character and use	Moderate / Minor
Viewpoint 18	Moderate	Construction	Moderate	Temporary	Moderate
		Completion	Moderate	Permanent change of character and use	Moderate
Viewpoint 19	High	Construction	Moderate	Temporary	Major / Moderate
		Completion	Moderate	Permanent change of character and use	Major / Moderate

8.7.60 Viewpoint 13 has the highest impact of Major for construction, with viewpoints 9, 11, 14 and 19 coming out as with the second highest impact of Major / Moderate for the landscape and visual impacts across both construction and completion as per the Impact of Magnitude Matrix Sensitivity of Receptor (Table 7).

8.7.61 The reason why these 5 viewpoints stand out as a higher impact above the other 14 viewpoints, is because they all have a high sensitivity due to residential properties, Public Rights of way and other publicly sensitive settings

8.7.62 Table 8 categorises the two significance of impacts as the following:

- **Major** - Very large or large change in environmental or socio-economic conditions. Effects, both adverse and beneficial, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceeding of statutory objectives and/or breaches of legislation.
- **Moderate** - Intermediate change in environmental or socio-economic conditions. Effects that are likely to be important considerations at a local level.

8.7.63 In this case it should be noted that when reviewing table 8 and the descriptions of the Level of Significance, Major does fit the profile of the effects and scheme in this instance as the development is tall, breaking the skyline and highly visible in several views. However, this should be perceived against an industrial backdrop that is very active due to the nature of the companies and the mainline railway infrastructure, there is also the adjacent 120m tall 82m diameter wind turbine.

8.7.64 It should also be noted that in all cases the winter time magnitude of change didn't vary from the summer time magnitude of change, the loss of leaf cover due the deciduous nature of the wooded areas / hedgerows within the study area did not affect the outcome significantly enough. It is agreed that a couple of the views opened up more, but as per section 3.3.5 the grading of these views didn't alter significantly enough to either go potentially up or down to the next grading.

CONCLUSION / RECOMMENDATIONS

NINE

- 9.1.1 The proposed Energy Recovery Facility (see Appendix 1 for drawings) should not cause unacceptable landscape and visual impacts especially in the wider landscape. The site sits within an existing developed industrial area with a number of other units within a wider peri-urban background which contains industrial pockets and large areas of built form within the natural landcover. This peri-urban industrial area already hosts buildings, a business park, large sheds, a wind turbine, moving machinery and fencing that are characteristic of the proposed Energy Recovery Facility.
- 9.1.2 It was apparent when out in the fields undertaking the site survey that the landform, landcover and landscape elements significantly altered and, in some cases, blocked views to the site that were thought to be evident within the desk study assessment. This is especially the case beyond the 3km distance with topography, wooded areas, shelterbelts, tall hedgerows and buildings forming visual barriers in views towards the site.
- 9.1.3 The constraints of the site around the proposed development do not provide opportunity for a landscape and ecological enhancement strategy to be implemented however there are opportunities to retain some of the existing trees and vegetation on the site as detailed in the introduction (paragraph 1.4.10).
- 9.1.4 It is anticipated that the significance of the majority of visual effects will be minor / moderate adverse. However, from viewpoints: 9, 11, 12, 14 and 19 the significance of visual effects is anticipated to be moderate / major adverse. From viewpoint 13 the significance of visual effects is anticipated to be major adverse during construction, however during the operational phase the significance will reduce to moderate / major adverse.
- 9.1.5 From viewpoints 1, 2, 3, 4, 5, 6, 7, 8, 10, 15, 16, 17 and 18 the visual impacts are anticipated to be moderate or moderate / minor. During the construction phase the majority of visual impacts will be moderate.
- 9.1.6 The landscape effects anticipated to arise from the proposed development are anticipated to be primarily focused in the area immediately surrounding the application site where the low sensitivity of the landscape results in acceptable significance of landscape effects. Within the context of the wider landscape the proposed development the anticipated residual significance of landscape effects will be low.
- 9.1.7 Inherent mitigation within the design of the proposed development has been undertaken to minimise impacts. The design uses fractured and coloured panels that take a triangular form. Different variations of green colour and along with the angular pattern of the design seek to break up the mass of the building and is designed to blend with the predominant colour palette of the building's surroundings. At the higher levels the colouring is blended to the paler colouring of the sky and estuary in the background, at the lower levels it is darker more akin with the industrial units and local vegetation. Lighting

will be used only where and when necessary and measures have been taken to ensure that the proposed development will not be lit 24 hours a day to reduce the impacts of night-time lighting.

- 9.1.8 When considered in an increasingly broad context of the peri-urban landscape, the proposed development is anticipated to be assimilated into the existing landscape and views. The existing industrial landscape is considered to have the capacity to absorb the introduced characteristic elements without overarching change to the landscape character of the area and the loss of low sensitivity and uncharacteristic elements is considered acceptable. Where the visual impacts of the proposed development have been assessed to be the highest the impacts are considered to be sufficiently localised and contained that the impacts are acceptable. Where the majority of views of the proposed development are possible, they are generally seen against a backdrop of similar elements, therefore the introduction of the proposed development into these views will not appear as uncharacteristic to the existing views.

APPENDICES

Drawing Name:

Site Context Plan (GPP)

Site Location Plan (GPP)

Site Layout (GSDA)

Building Elevations

Drawing Reference:

GPP/Cog/WC/19/01 Rev 1

GPP/Cog/WC/19/02 Rev 1

1383 PL101 Rev A

1383 PL300 to 314 Rev -
1383 PL201 and PL312 Rev A

ALD DRAWINGS

Site Location Plan

Transport (Rivers and Major Transport Routes)

PROW's (Public Rights of Way)

Wider Site Context (Surrounding Site Context)

Landuse (Surrounding Landuse and Land Cover)

Topography (Ridges and Valleys)

Landscape Character Assessment

Zone of Theoretical Visibility

Site Features

Viewpoint Locations Close to Site

Viewpoint Locations Further from Site

Photos Within Site

Photographic Viewpoints (July 2019)

Photographic Viewpoints (February 2020)

Photomontage Proposed Viewpoint 2

Wireframe Proposed Viewpoint 5

Photomontage Proposed Viewpoint 5

Photomontage Proposed Viewpoint 12

Photomontage Proposed Viewpoint 13

Photomontage Proposed Viewpoint 17

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ALD837 / LD1001 RevP01

ALD837 / LD1002 RevP01

ALD837 / LD1003 RevP01

ALD837 / LD1004 RevP01

ALD837 / LD1005 RevP01

ALD837 / LD1006 RevP01

ALD837 / LD1007 RevP01

ALD837 / LD1008 RevP01

ALD837 / LD1009 RevP02

ALD837 / LD1010 RevP02

ALD837 / LD1011 RevP01

ALD837 / LD1012 - 1033 RevP04/5

ALD837 / LD1034 - 1052 RevP01/2

ALD837 / LD1053 RevP01

ALD837 / LD1054 RevP01

ALD837 / LD1055 RevP01

ALD837 / LD1056 RevP01

ALD837 / LD1057 RevP01

ALD837 / LD1058 RevP01