

# **Environmental Statement**

## **Volume 1: Main Text**

**Land to the North of the  
Railway Line, Rhoose,  
Vale of Glamorgan**

**The National Assembly for Wales  
Bellway plc  
Persimmon Homes (Wales) Ltd**

**2008**

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**Cotswold Archaeology**



# Land to the North of the Railway Line, Rhoose, Vale of Glamorgan Environmental Statement

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# Land to the North of the Railway Line, Rhoose, Vale of Glamorgan Environmental Statement

## 1.0 INTRODUCTION

### 1.1 Background

The National Assembly for Wales, Bellway plc and Persimmon Homes (Wales) Ltd own or control an area of land located to the north of the railway line, off Pentir y De and Porthkerry Road, Rhoose in the Vale of Glamorgan. The location of the site is illustrated in Figure 1.1. The land is proposed to be developed for housing in accordance with the residential allocation contained in the statutorily adopted *Vale of Glamorgan Unitary Development Plan 1996-2011*.

An application for outline planning permission for the development of the site has been submitted to the local planning authority (The Vale of Glamorgan Council). Subject to a minor boundary change, the application relates to the whole of the allocated site, so as to ensure a comprehensive approach to development and to the provision of necessary infrastructure. The extent of the application site is illustrated in Figure 1.2.

The description of the proposed development is as follows:

*'Residential development comprising the erection of dwellings and garages, provision of infrastructure, open space and landscaping and all associated building and engineering operations'.*

### 1.2 Environmental impact assessment

The proposed development is such as may require environmental impact assessment (EIA) under the terms of the *Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999*. The Regulations implement EC Directive No. 885/337 on the assessment of the effects of the effects of certain public and private projects on the environment. This Environmental Statement (ES), which records the results of the environmental impact assessment, is submitted in support of the planning application on a voluntary basis. It seeks to provide a systematic account of the possible environmental effects of the proposed development, based on a comprehensive list of relevant environmental criteria.

The overall aims of the statement are to:

- Describe the baseline conditions at the site against which changes and effects can be assessed.
- Describe the details of the respective elements of the overall scheme.
- Consider the potential environmental effects of the development.
- Describe the measures which are available to mitigate those effects.
- Assess the likely effectiveness of the mitigation measures.

### 1.3 Format of the environmental statement

The ES has the following structure:

- Section 1 sets out a general introduction to the project.
- Section 2 describes the site and its surroundings.
- Section 3 outlines the form of the proposed development.
- Sections 4-10 assess the potential effects of the development and the effectiveness of the mitigation measures that are proposed.

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- Section 11 analyses the relevant planning policy considerations against which the planning application will be assessed by the local planning authority.

The ES draws together the results of the environmental impact assessment. The main text is presented as Volume 1. The plans and drawings that accompany the ES are presented in Volume 2. It also refers to a number of technical appendices, which include supporting technical information prepared by the consultant team, and these are provided in Volume 3. In order to enable the findings and conclusions of the ES to be more readily understood, a “non-technical summary” has been prepared as a separate document and is presented as Volume 4.

The outline planning application is accompanied by additional documents, as follows:

- A *Design, Access and Sustainability Statement*, which describes the development proposals for the site and sets out a vision and framework for the new residential development. This statement is intended:
  - to fulfil the statutory requirement for an access statement under *The Town and Country Planning (General Development Procedure) (Amendment) (Wales) Order 2006*;
  - to provide the design statement advised by the Welsh Assembly Government in *TAN 12: Design (2002)*;
  - to provide the landscape strategy required by the local planning authority in *Land north of the Railway Line, Rhoose: Approved Development Brief (2007)*; and
  - to provide the sustainability statement required by the local planning authority in *Supplementary Planning Guidance: Sustainable Development (2006)*.
- A *Transport Assessment* of the proposed development, which assesses the impact of the proposed development on the local highway network.
- A *Drainage Report*, which gives an overview of site geology and hydrogeology and contains outline proposals for foul and surface water drainage.

## **2.0 THE SITE AND ITS SURROUNDINGS**

### **2.1 Location and urban context**

The site comprises approximately 26 hectares (66 acres) of gently sloping agricultural land. It adjoins the eastern boundary of the village of Rhoose, 3.5 km to the west of the town of Barry. The site is bounded in the north and west by existing residential development. The railway line forms the southern boundary, beyond which lies the Rhoose Point housing development, which presently comprises a development of approximately 500 dwellings. Pentir y De, the access road that leads from the B4265 to Rhoose Point, forms the eastern boundary of the site. Open countryside extends eastwards from Pentir y De and a public right of way runs north-south through the site. The location of the site is illustrated on Figure 1.1.

The site is located close to the centre of Rhoose, which includes a number of facilities including local shops, a primary school and services. The centre of the village has been designated as a Conservation Area to reflect its historic character. Cardiff International Airport lies immediately to the north of Rhoose and the airport perimeter is bounded by Porthkerry Road to the east of the site. The Cardiff International Airport Business Park is also located just to the north of the site. The urban context of the site is illustrated in Figure 2.1.

### **2.2 Ground conditions and topography**

Land within the site slopes gently to the south, from the 60 m above Ordnance Datum (AOD) contour to around 40 m AOD.

The site has been the subject of a site investigation carried out on behalf of the applicants (*Geotechnical Report*, Intégral Géotechnique, November 2004). The scope of work included a desk study of available information, site reconnaissance and intrusive investigation comprising 76 machine-excavated trial pits with representative sampling and chemical testing.

The recent history of the site was traced with the aid of Ordnance Survey maps dating from 1879 to 1999, which showed that the land use throughout was as agricultural land.

The site is underlain by Mesozoic rocks of the Porthkerry Formation of the Lower Lias Limestone Series. These rocks are likely to consist of layered limestone and shale beds.

Site investigations indicate that shallow bedrock underlies the site at depths of 0.3-1.8 m and is typically 0.6 m below existing ground level. The bedrock is overlain by cobbly clay and topsoil. A small area of ash tipping has been identified and was associated with a small wartime military camp that formerly adjoined the northern boundary of the site. The material has been found to be contaminated only by zinc, which affects plant growth only. However, as part of the site preparation works, the veneer of made ground should be removed and encapsulated elsewhere on site below hard finished areas. A shallow lime pit that has been partly back-filled with local clay and limestone was also identified in the south-western part of the site, but the material was found to be uncontaminated. A further small area of re-worked ground was also found to be uncontaminated. Anecdotal evidence and historical maps suggest that a cesspit may be located on the site and this will need to be removed during site works.

Available data indicates that there are no currently licensed registered landfill operations within 250m of the site. The Rhoose Point Encapsulation Landfill, which formed part of a remediation strategy for the redevelopment of the Blue Circle Cement Works, lies 225m to the south-west of the south-western corner of the site. The waste management licence associated with that landfill was surrendered in 2000 and the Environment Agency has accepted that there is no significant gas generation within that facility. As a result of the former presence of an asbestos cement works located to the south-west of the site, a series of samples were taken on the site and were found to be free of asbestos.

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On the basis of the geophysical and trial pitting investigations, Intégral Géotechnique consider that the site should not be affected by major solution cavities and that the ground encountered at shallow depths is well capable of supporting traditional two-storey dwellings on conventional mass concrete strip foundations and ground bearing floor slabs. Further site investigation and geophysical surveys should be undertaken prior to development to confirm that no solution features are present in the limestone strata beneath the site. Given the soluble nature of the strata below the site, soakaways would not be recommended for draining the site.

### **2.3 Landform and landscape**

The site is not located within a national, regional or local landscape designation. Its landscape context is illustrated in Figure 9.1. There is a Conservation Area in the village centre of Rhoose and a small part of the site, in its north-western corner, lies within the conservation area. It is considered that the proposed development would not have a detrimental impact on the conservation area or its setting.

The site has a pleasant south-facing aspect with views to the Bristol Channel. The boundary of the site is well defined, with the edge of the settlement of Rhoose to the east and west, Pentir y De to the east and a railway line to the south. Potential views to the west, north and east are obscured by these boundary features, which increases the importance of views across the Bristol Channel to the south. The site is divided in two by the access track that enters the site from Porthkerry Road. A public footpath follows this track, as it heads south through the site, before crossing the railway line into the Rhoose Point development. This track and the hedgerows along each side, which include significant trees, are a dominant feature within the site. The continuous vegetation along the track clearly splits the site into two parts, obscuring views from one side to the other.

East of the access track, the site has a fairly open character due to the lack of vegetation along the northern and eastern site boundaries and the field boundary hedgerows which are sparse with frequent gaps. Vegetation along the railway line is also intermittent in this part of the site, which allows views of houses within the Rhoose Point development. Land to the west of the access track is more enclosed due to dense, almost continuous tall hedgerows defining field boundaries. Many of the trees within the hedgerows are mature native species, predominantly ash and oak, although there are some beech trees also. In the southern part of the site, the vegetation along the railway generally forms a continuous screen with the exception of a couple of sections where there are views of the Rhoose Point development.

### **2.4 Ecology**

The site does not contain or form part of any area that has been designated for its nature conservation interest. An extended Phase 1 habitat survey plus protected species surveys of the site were undertaken in 2004-05 and further more detailed surveys completed in 2007. A small additional area of land was surveyed in 2008. Hedgerows are the most ecologically valuable habitat on the site, providing food and shelter to nesting birds, small mammals, reptiles and invertebrates. Full details of the ecological assessment of the site are provided in section 8.0 below.

### **2.5 Agricultural land quality**

An agricultural land classification survey of the site has identified the land as falling within sub-grade 3b. None of the land therefore comprises "best and most versatile agricultural land" as defined in *Planning Policy Wales* and *TAN 6: Agricultural and Rural Development*. As such, little weight should be given to its loss. The site is occupied by three farming businesses. Although part of the site represents an important part of one farming business, it is held on a short term arrangement only and therefore little weight can be given to its loss. The effects of land loss on the other two businesses will also be minimal.

## **2.6 Archaeology and cultural heritage**

The site does not contain any scheduled ancient monuments, listed buildings or other features that have been designated for their archaeological or historic interest.

A desk top archaeology and cultural heritage assessment has revealed that a medieval and post-medieval settlement at Rhoose was located to the north-west of the site. However, there is no evidence from either historical maps or the location of known sites and findspots to suggest that this settlement encroached into the site. Where hedgerows survive, along boundaries marked on the Porthkerry Tithe Map of 1839, they may be considered to be of some cultural heritage, but do not have statutory protection under the archaeology and history criteria of the *Hedgerow Regulations 1997*. Historical maps and field observations suggest that the site was traversed by tracks or paths and one survives as a green lane running through the site. Some disturbance has taken place to the south of the site of a former army camp due to the construction of a sewage treatment system and ploughing has taken place in some areas. No evidence of an undated earthwork that is recorded on the Glamorgan-Gwent Archaeological Trust's *Sites and Monument Record* could be seen during a site visit. In summary, there are no known archaeological sites present within the site and there is low potential for any currently unknown sites to be present.

## **2.7 Access and infrastructure**

Existing access to the site is via Porthkerry Road and Pentir y De, with an agricultural access off Pentir y De. Pentir y De is currently unadopted, but the Council has confirmed that the road is considered to be a public highway. Porthkerry Road links the site to the village of Rhoose and also leads to Cardiff International Airport and the A4226 in the north. An access track and public right of way runs southwards through the site from Porthkerry Road in the north and crosses the railway line into the Rhoose Point development to the south. An existing cycle route along Pentir y De connects with the Coastal Footpath to the south and the route of the proposed Sustrans National Route 88 will follow Porthkerry Road to the north.

Rhoose is served by public transport facilities with a bus link to Barry and Llantwit Major. There are a number of bus stops along Porthkerry Road and Fontygary Road and their locations are shown on Figure 2.1. A new railway station has been developed at Rhoose, to the south of the Station Road/Torbay Terrace junction, only a short distance from the western boundary of the site. The railway line re-opened to passenger traffic in 2005 giving easy access to Cardiff and Barry for employment and other purposes.

## **2.8 Drainage and services**

The site does not lie within the Environment Agency's indicative floodplain map or the Development Advice Map for the area published by the Welsh Assembly Government in *TAN15: Development and Flood Risk*.

Searches conducted with the statutory undertakers indicate that a medium pressure gas main and a foul rising main traverse the site from west to east immediately parallel to the railway line. The locations of these services are illustrated in the *Drainage Report*.

From visual inspection and discussions with the Land Drainage Officer of the Council and Network Rail, it has been established that three culverts are present underneath the railway line and that these allow surface water run-off to drain from the site, underneath the railway line, to the south. At the northern part of the site, adjacent to Dams Lane, a highway drain discharges into an open ditch. This drain collects surface water run-off from the B4265. At the eastern end of the site, an above ground drain passes underneath the new Rhoose Point link road which allows surface water run-off from the fields immediately to the east to discharge on to the development site.

### **3.0 PROPOSED DEVELOPMENT**

#### **3.1 Introduction**

The site has been promoted for development by the Vale of Glamorgan Council and is allocated for residential development in the adopted *Vale of Glamorgan Unitary Development Plan 1996-2011* under Policy HOUS 1(22). The Council has subsequently approved a site development brief: *Land north of the Railway Line, Rhose: Approved Development Brief* (August 2007). The planning application is accompanied by a *Design, Access and Sustainability Statement*, prepared on behalf of the applicants, which accords closely with the *Approved Development Brief*.

#### **3.2 Site layout**

The development framework drawing (Figure 3.1) illustrates the layout that is proposed for the site. The track, which divides the site into two areas of almost equal size, is a major feature and is therefore proposed to be retained. Adjoining it is a large area of open space, which incorporates playing facilities. The Council has indicated that the open space provision should be centrally located and this is reflected in the design of the site. The residential development is located to the west and east of the track. A series of individual residential development plots are formed by the layout of the road and the retention of some of the existing hedgerows.

The road network within the site is laid out to provide a loop system, linking the western part of the site to the eastern side in two locations. The number of points where the track and other existing mature hedgerows are crossed has been minimised and existing openings/breaks have been utilised where possible. The loop road changes direction frequently, in order to help slow traffic; other traffic management measures may also be appropriate. The design, surface material selection and landscape treatment of this road will need to clearly identify that it is the main route around the site, in order to assist with the orientation of drivers, cyclists and pedestrians. A secondary, emergency access road is also required and further details are provided in section 3.3 below. Buildings should be front-on or side-on to this main loop road to help define its overall importance and character. Pedestrian and cycle routes are provided through the site to link with the surrounding community and the railway station and bus stops.

The design concept also aims to provide a new and appropriate landscape structure for the development, retaining existing landscape features where practicable. It incorporates a hierarchy of landscape character for the road network and associated cycle and pedestrian ways to provide a “sense of place” and legibility. It also consolidates the public open space for ease of management and maintenance and is located so that it is readily accessible to the wider community.

A landscape buffer, approximately 10 m wide, has been introduced along the railway line. The extent of this buffer will be subject to detailed agreement with Network Rail and the Council, including the planting of species to be approved by the Council. This will provide a service corridor for sewerage systems, accommodate the cycle and pedestrian links, and allow houses to be set back from the railway line. In addition, a buffer has been introduced along the edge of Pentir y De to allow for level changes and service runs. The future management of these buffers will need to be agreed with the local planning authority.

#### **3.3 Access and movement**

The existing public footpath, which follows the track through the centre of the site, will form the focus of the pedestrian circulation network and will provide access to the bus services that currently run along Porthkerry Road. It will also connect with the cycle route along the southern site boundary. This will become an increasingly well used route between Rhose and Pentir y De. The existing cycle route along Pentir y De connects with the Coastal

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Footpath to the south and the route of the proposed Sustrans National Route 88 that will follow Porthkerry Road to the north.

The pedestrian and cycle network within the development will need to be acceptable for adoption, be lit and integrated with existing pedestrian and cycle routes beyond the site boundary. These routes (which will be designed to be safe, secure and useable) will provide access to community facilities, local amenities and the railway station. There will also need to be new public transport infrastructure works, namely shelter provision together with raised kerbs and associated road markings.

Discussions with the Highway Authority have indicated that access into the development site for up to 600 houses can be achieved via a new roundabout on Pentir y De. It is understood that although Pentir y De is not currently an adopted highway, it is considered by the Council to be a public road. It is also understood that the road is subject to a section 38 agreement with its developers, Cofon Ltd. A secondary access, off Porthkerry Road, via the existing lane, will serve a limited amount of development of, at most, 20 residential units. The entrance to this "mews" area will lead to a cycleway/footway, which when required, will be used as an emergency access. It is proposed that the emergency access will be 3.0m wide with 1.0m wide verges to both sides, giving a total width of 5.0m.

The detailed design of the roundabout on Pentir y De will require further investigation following highway data collection and analysis, but it is proposed that it will be designed to be 35m ICD. From this new roundabout, there will be a requirement for a length of 7.3m wide carriageway which will not have any direct frontage access. This section of road, leading to another roundabout, will be approximately 125m in length and will be capable of accommodating bus services. A hierarchy of road layouts, where direct frontage access will be permitted, will then lead from the second roundabout.

A *Transport Assessment* for the proposed development has been prepared, in accordance with parameters that were agreed in advance by the Highway Authority. It is submitted in support of the planning application as a separate document. The assessment of the proposed development involved a capacity analysis at:

- Porthkerry Road/Rhoose Point access road roundabout;
- Port Road/Porthkerry Road roundabout; and
- The proposed development access roundabout.
- Fontygary traffic signals

It concluded that as a result of the proposed development that there would be no capacity problems predicted at:

- Port Road/Porthkerry Road roundabout;
- The proposed development access roundabout; or
- Fontygary traffic signals.

The Porthkerry Road/Rhoose Point access road roundabout will operate above its level of capacity along Porthkerry Road East in 2014. In order to accommodate the capacity on the Porthkerry Road East arm, the entry arm to the roundabout will be flared over 30m. There are no capacity problems at the Porthkerry Road/Rhoose Point access road roundabout with the additional 30m flare along Porthkerry Road East.

### **3.4 Land uses and housing numbers**

In accordance with the housing allocation in Policy HOUS 1(22) of the UDP, the proposed development will comprise a residential development of approximately 600 units. The development will be phased and it is anticipated that 400 units will be developed to 2011 and 200 units after 2011, in accordance with the UDP allocation for the site. The development will also include the provision of 3.48 hectares (8.6 acres) of open space that will be offered to the Council for adoption. The open space will incorporate recreational facilities, including a football pitch, a Local Equipped Area for Play (LEAP), a Neighbourhood Equipped Area for Play (NEAP), including a Multi-Use Games Area (MUGA) and a skateboard area. Two Local Areas for Play (LAPs) will also be integrated into the residential development. The "green lane" public right of way that runs north-south through the site will be retained and enhanced with additional landscape planting and will form part of the general public open space provision.

The overall disposition of land areas will be:

- Residential land 19.78 hectares (48.9 acres)
- Public open space 3.48 hectares (8.6 acres)
- Road network 1.89 hectares (4.7 acres)
- Buffers and incidental space 1.45 hectares (3.6 acres).

The density of residential development may vary slightly across the site to create variety in the character of the various parts of the development. However, an overall density of approximately 30 dwellings per hectare (12 dwellings per acre) is proposed, which would equate to approximately 600 new homes.

### **3.5 Landscape and open space strategy**

A landscape strategy is included in the *Design, Access and Sustainability Statement* that accompanies the planning application.

The design concept aims to provide a new and appropriate landscape structure for the development, retaining existing landscape features where practicable. It incorporates a hierarchy of landscape character for the road network and associated cycle and pedestrian ways to provide a "sense of place" and legibility. It also consolidates the public open space for ease of management and maintenance and is located so that it is readily accessible to the wider community.

A landscape buffer, approximately 10 m wide, has been introduced along the railway line. This will provide a service corridor for sewerage systems, accommodate the cycle and pedestrian links, and allow houses to be set back from the railway line. In addition, a buffer has been introduced along the edge of Pentir y De to allow for level changes and service runs. The site benefits from existing landscape features, which will be retained as "green assets" for the proposed development: the areas of trees and tall hedgerows along the track through the middle part of the site and screen planting along some sections of the site boundary. The proposed development does not include proposals for large areas of structure planting as there are significant areas of existing vegetation, trees and hedgerows retained as part of the proposals. Some of this vegetation will require management to improve its appearance and longevity and, in some cases, the safety of the vegetation. Much of the existing vegetation has become damaged by livestock and has not been sufficiently maintained for some time.

There are hedgerows on site that qualify on ecology criteria as "Important Hedgerows" under the *Hedgerow Regulations 1997*. These are the overgrown hedgerows following the public right of way through the centre of the site. A tree condition survey has identified that there are trees to be retained or pruned within these hedgerows and diseased Elm trees to be felled

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(Figure 9.11). Other hedgerows on site are either to be retained with some management, or removed depending upon the quality of the existing hedges. The planting proposals for the development include predominantly formal planting in selected locations to complement the retained vegetation.

The main access road to the site is the link road from Pentir Y De. This is the primary road and, therefore, its landscape treatment should create an attractive through route and an attractive entrance to the development. Any planting, where deemed appropriate, will need to complement the existing landscape scheme along Pentir y De. Within the residential areas of the development, the development framework provides a number of interlinked streets that will be clearly legible as the main road network and the route into and out of the development. This legibility could be enhanced through a combination of landscape treatment, surface material selection and the relationship of development to these streets. This will be important in defining the overall character and legibility of the development. Buildings should front or side on to the road, with access to individual houses being from the highway.

The "off-road" movement framework is a key feature of the proposed development. A system of paths for cyclists and pedestrians is included to link the individual parts of the development, conveniently and safely, with the amenities available within the development, the main part of the village and to the Vale of Glamorgan Coastal Footpath. The footpaths will also be amenities in their own right and will contribute to active recreation provision.

### **Public open space**

An area of strategic open space will be provided as part of the proposed development and is illustrated on the development framework. The size of this new facility has been calculated in accordance with the standards advocated by the National Playing Fields Association (NPFA), which body recommends a minimum of 2.4 hectares (6.0 acres) of open space per 1000 people. The NPFA advises that the total standard should be subdivided into outdoor sport and children's play space, as follows:

- outdoor sport: 1.6 hectares (4.0 acres) per 1000 people, within which there should be a specific allocation for pitch sports of 1.2 hectares (3.0 acres) per 1000 population; and
- children's playing space: 0.8 hectare (2.0 acres) per 1000 people.

The proposed development will comprise 600 dwellings, which equates to a projected population of 1410 people (assuming a household size of 2.35). Based on the NPFA standard, this would require 3.4 hectares (8.4 acres) of open space, comprising 2.27 hectares (5.6 acres) for outdoor sport (to include 1.7 hectares (4.2 acres) for sports pitches) and 1.13 hectares (2.8 acres) for children's playing space.

For the children's playing space, three categories of provision are recommended by the NPFA for different age groups:

- A local area for play (LAP) is a small area of unsupervised open space specifically designated for young children (4-6 years) for play activities close to where they live. LAPs comprise an activity zone of 100m<sup>2</sup> with a 5m wide buffer zone around. A LAP should be located within a walking time of 1 minute from home, which equates to a straight line distance of 60m (a pedestrian route of 100m).
- A local equipped area for play (LEAP) is an unsupervised play area for children of early school age (4-8 years mainly) containing at least five types of play equipment. LEAPs comprise an activity zone of 400 m<sup>2</sup> with a surrounding 10m wide buffer zone and, if adjoined by housing on all sides, would be 0.36 hectare (0.9 acre) in extent. It should be located within a walking time of 5 minutes from home, which equates to a straight line distance of 240m (a pedestrian route of 400m).
- A neighbourhood equipped area for play (NEAP) is an unsupervised site serving a substantial housing area and intended mainly for older children (8-14 years) containing at

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least eight types of play equipment. NEAPs comprise an activity zone of 1000 m<sup>2</sup> with a 30m wide surrounding buffer zone. If adjoined by housing on all sides, a NEAP would be 0.84 hectare (2.0 acres) in extent. It should be located within a walking time of 15 minutes from home, which equates to a straight line distance of 600m (a pedestrian route of 1000m).

The development framework (Figure 3.1) shows that the main area of open space has been located adjacent to the existing public footpath and cycleway in the central part of the site. It incorporates a football pitch to Football Association standards, a NEAP and a LEAP. The NEAP includes a Multi-Use Games Area (MUGA) and a skateboard area. The public open space is consolidated in one area for ease of maintenance and located so that it is readily accessible to the wider community as well as to future residents of the site. Adjacent mature trees and hedgerows provide a landscape setting for the public open space that does not rely on the establishment of new planting. The retained vegetation will provide an attractive setting for informal recreation, such as jogging and cycling. It will also contribute significantly to the biodiversity of the area as a whole. Two LAPs will also be provided, one in the eastern part of the development and one in the western part of the development.

### ***Landscape aftercare proposals***

In order to fulfil the aims of the landscape strategy, a long term commitment to the management and maintenance of landscape areas is necessary. A detailed programme of regular maintenance will be required to ensure the successful establishment of new planting including fertiliser applications, weed control, replacement of plant failures, pruning, checking rabbit guards and protective fencing. Areas of retained existing vegetation will need to be managed to remove dead growth and undesirable species, which would enhance the environment of the development and increase biodiversity.

In order to ensure that all planting is compatible with the local gene pool of the area, all woody plant species should be of local provenance as outlined in *Forest Practice Note No. 8: Using Local Seed Sources for Planting Native Trees and Shrubs* (Forestry Commission, 1999). All herbaceous planting should be sourced from the *List of Native Flora Suppliers in the British Isles and Ireland (Flora Locale (UK))*, 8 June 2000). The species selection and maintenance of the planting areas will need to reflect the exposed coastal nature of the site, which will result in prolonged exposure to coastal winds.

### **3.6 Drainage and utility services**

Initial discussions have been held with Dŵr Cymru/Welsh Water with regard to the discharge of both foul and surface water from the site and verbal agreement has been reached on both these issues. A detailed *Drainage Report* for the proposed development has been undertaken and accompanies the planning application.

It is proposed that a new storm water drainage system discharging to the east, via a thrust bore under the railway line and across to a new or existing sea outfall, would be installed. Network Rail has confirmed its in-principle agreement to the scheme. This scheme would provide for a comprehensive drainage solution that would not appear to have any consequential effect on the surrounding environs and in particular, would be designed not to increase greenfield run-off rates to the south of the site. Subject to the necessary permissions and approvals, this drainage scheme could be offered for adoption or requisitioned from Welsh Water. Full details of the proposed layout for the storm water drainage system are provided in the *Drainage Report*.

With regard to foul water drainage, a new pumping station is proposed to be constructed on the site. The pumping station would connect to the existing rising main at the mid southern part of the site and existing flows from the Rhoose pumping station would be diverted to the new facility via additional storage. The new facility will pump the flows to the Porthkerry pumping station. This scheme would provide the most benefit to the existing infrastructure

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since it would shorten the pumping circuit now serving Murlande Way and would be the least disruptive to construct in terms of installation and connections to the existing system. The pumping station will be designed in accordance with Welsh Water guidelines in order that it can be offered for adoption by or requisitioned from Welsh Water.

The other statutory undertakers have confirmed that all services are available within the area.

## **4.0 AGRICULTURE**

### **4.1 Introduction**

This section sets out the findings of an agricultural assessment of the site. The results are based on published data, detailed site survey and interviews with the potentially affected farming occupiers.

The site covers approximately 26 hectares located between the existing village of Rhoose to the north and west and the Rhoose Point residential development to the south. The site is bordered to the east by Pentre-y-Dre. The block of land is occupied by three separate farming enterprises. The majority of the land is grazing land with the most easterly block down to arable cropping.

### **4.2 Policy guidance**

Policy relating to development of agricultural land is set out in *Planning Policy Wales* (March 2002) and *TAN 6: Agricultural and Rural Development* (2000). *Planning Policy Wales* states that land of Grades 1, 2 and 3a on the Ministry of Agriculture, Fisheries and Food (MAFF) system of Agricultural Land Classification (ALC) is the '*best and most versatile agricultural land and should be conserved as a finite resource for the future*'.

However, such land can be developed, albeit exceptionally, if for example '*there is an overriding need for development, and either previously developed land or land in lower agricultural grades is unavailable, or available lower grade land has an environmental value which is recognised by a landscape, wildlife, historic or archaeological designation which outweighs the agricultural considerations*'. Paragraph 2.8.1 goes on to note that if best and most versatile land does need to be developed, '*and there is a choice between sites, development should be directed to land of the lowest grade*'. Land of lower quality need not generally be protected from development.

Land quality will normally be the most important factor, but other factors may be relevant, as set out in *TAN 6*, including:

- the location of the development in relation to farms;
- farm size and structure;
- farm buildings and other fixed equipment;
- irrigation (if practised);
- other effects, such as land drainage systems.

### **4.3 Agricultural land quality**

The Agricultural Land Classification (ALC) system divides land into five grades according to the extent to which inherent characteristics can be exploited for agricultural production. Grade 1 is described as of excellent quality and Grade 5, at the other end of the scale, is described as very poor quality. ALC is based upon an assessment of limiting factors, including soils, climate and other physical limitations and the way in which these interact.

#### ***Published data***

The Welsh Assembly Government has been contacted as part of the assessment. The Assembly Government holds detailed ALC information for the most easterly block of land. This information shows the land to be Grade 3b.

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The provisional agricultural land classification map of Wales (MAFF 1977) shows Grade 2 land over all of the survey area. However, the ALC system has been revised since these “provisional” maps were produced and they cannot be relied upon for assessing land quality of a particular site.

### ***The survey***

The site was surveyed in June 2004 and has been graded according to the current MAFF guidelines and criteria (MAFF 1988). Sites over the farmland were examined at approximately 100m intervals to determine the distribution of soils over the site.

### ***Factors affecting ALC grade at the site***

Climate affects the grading of land through the assessment of an overall climatic limitation and also through interaction with soils.

The key climatic variables for this site are provided by the Meteorological Office (1989) interpolated from the 5km grid climatic datasets. The figures are given in the table below:

**Table 4.1**  
**Climate and altitude data**

Grid reference	ST0660 6640
Altitude	50m AOD
Average annual rainfall	976mm
Accumulated temperature >0°C (Jan-June)	1507 degree days
Moisture deficit, wheat	85mm
Moisture deficit, potatoes	73mm
Field capacity period	201 days

The combination of rainfall and temperature at this site imposes no direct climatic limitation upon land quality over this ground. The clayey nature of the soils combined with moderate large winter rainfall imposes an access limitation over the clayey soils covering the land. Soil depth may be a limiting factor locally on this site with soils with rock between 30 and 40 cm depth placed in sub-Grade 3b and soils with rock between 15 and 20 cm in Grade 4.

### ***Geology and soils***

Published geological information is available on the 1:63,360 scale geological map of the Bridgend district (BGS 1989) and shows Porthkerry Limestone over the land. This has been extensively quarried to the south and new housing has been constructed in the old land workings. A shallow quarry occurs towards the western end of the site.

The detailed soil survey clearly recognises limestone over the site and in places this is very near the ground surface, forming the base to part of the track crossing the centre of the site.

The semi-detailed soil map of the Vale of Glamorgan (SSEW 1969) clearly reflects the presence of limestone in an area with clayey soils of the Ston Easton series over all the land.

The detailed soil survey, undertaken for this study, reveals well-drained clayey soils at each of the 26 points examined during the survey. Many profiles are of moderate depth with limestone at depths of between 40 and 60 cm of the ground surface, but there are areas, particularly against the village of Rhoose, with shallower soils where rock occurs within 30 cm of the surface.

### ***Agricultural Land Classification***

Land on this site is of moderate (Grade 3b) quality. All profiles sampled were freely drained but clayey to the surface. These soils have a high retained water capacity which gives access problems from late autumn, through the winter and into the early spring. Cattle are normally

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taken off the ground in October and it may be the middle of May before they can be returned without the risk of serious poaching.

The bulk of the soils are moderate depth but some shallower soils with limestone at about 22cm occur on the northern side of the site. These shallow soils are also of moderate (3b) quality.

Non-agricultural land counts for a small area and includes a track crossing the centre of the site.

**Table 4.2**  
**Distribution of ALC Grades at the site**

Grade	Definition	Area (ha)	Area (%)
3b	Moderate	25.3	96.2
Non - Ag	Non agricultural	0.3	1.1
	Unsurveyed	0.7	2.7
Total		26.3	100.0

The distribution is shown on Figure 4.1.

The results of the ALC survey were validated by the Welsh Assembly Government as being *'entirely consistent with field survey work carried out by the Assembly in the locality, including some land within the site. Consequently, a high degree of confidence can be attached to the sub grade 3b grading of the land.'* A copy of the letter from the Welsh Assembly Government is provided in Appendix 4.1.

#### 4.4 Other considerations

##### ***Policy guidance***

There are a number of factors in addition to land quality that may be relevant. These include an assessment of trespass and locational issues, the effect on farm businesses and their assets and potential off-site impacts on field drainage or water supply. These factors are described more fully in TAN 6.

A summary of the farming enterprises affected is included at Appendix 4.2.

##### ***Location of development***

Some sites suffer from trespass, affecting the ability to exploit the agricultural potential of the land. Some forms of development may have such an effect on surrounding land. In this case, the land is heavily trespassed by teenagers from nearby residential areas. Most of the gates are locked and are wired up to prevent damage. In summary, trespass prevents the full exploitation of the agricultural potential of this block of land.

The presence of strong physical boundaries (Rhoose Point link road) will prevent the spread of trespass onto neighbouring land from any future development. Hence the current problem should not be exported further afield if development were to proceed.

##### ***Farm size and structure***

Paragraph 8 of TAN 6 notes that the effect of development proposals on farms varies significantly. Some proposals may cause severance or fragmentation, and the effect on the remainder of the farm is a relevant consideration.

The block of land proposed for development is farmed by three separate occupiers:

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Block 1 is occupied by a local beef and sheep farmer who owns and tenants approximately twelve blocks of land in the Barry area. In total, he farms 90 hectares the majority of which is rented. The land at Upper Farm, Rhoose which extends to approximately 12 hectares is held on a 23 month tenancy.

The proposed development will involve the loss of approximately 13% of the occupier's land. As a result, he will have to downsize his sheep flock to compensate for the loss of available grazing land, or find other suitable land (which is unlikely to be a significant problem in this area). Although the potential loss of this land is of significance to this farm business, due to the nature of the occupation (that is, on a short-term, non-secure arrangement), little weight in policy terms can be given to its loss.

Block 2 forms part of Glebe Farm, Porthkerry. Glebe Farm extends to approximately 48 hectares. Of this, 13 hectares (including the farmhouse and farm buildings) are rented on a Full Agricultural Tenancy, 15 hectares are owned. The land that is subject to this assessment (10 hectares) is held on an option agreement by Persimmon Homes and the remaining land is occupied on a variety of agreements.

The proposed development will involve the development of approximately 20% of the farm. In normal circumstances this could have significant implications for the main farm holding. However, in this situation the farmer is reaching retirement age and is looking to scale down his farming enterprises. Thus the loss of this land to development will assist in a planned down-sizing of the farm enterprise. Therefore the effects of the loss of 10 hectares of land to development will not be significant.

Block 3 forms part of New Farm, Barry, a large arable and beef unit that farms some 190 hectares in the locality. The farm, through the business and a variety of family trusts, owns approximately 138 hectares. The remainder of the land is rented on a variety of Farm Business Tenancies and other informal agreements. The proposed development at Upper Farm, Rhoose would involve the loss of 4.2 hectares of land. This represents just over 2 percent of the total farm. The land is difficult to farm for arable purposes due to its awkward shape and proximity to urban development. For a number of years it was down to permanent set aside since the Rhoose Point development commenced, as a consequence of trespass problems. Its loss will have negligible effects on the main farm business.

### ***Buildings and fixed equipment***

*TAN 6* indicates that the efficiency of farms can be affected by the condition and extent of buildings and other fixed equipment. The full use of these assets could be impaired by the loss of specific sites to development and there may be proposals to improve buildings and equipment which are tied to investment decisions already taken.

There are no agricultural buildings located on the site and neither will the proposed development have any effect on the future development of any buildings at the occupiers' main farm yards.

### ***Irrigation***

Irrigation can influence the cropping potential of land. It is not practised on any of the affected land and therefore there is no impact.

### ***Other effects***

Paragraph 11 of *TAN 6* refers to the consequences for off-site drainage and water supply that may follow from development proposals. None of the survey area is tile drained. It is proposed that whole fields will be taken and therefore there will be no agricultural effects on off-site drainage or water supplies.

#### **4.5 Summary of potential impacts**

The site comprises of Grade 3b land and therefore none of the site is “*best and most versatile agricultural land*”, as defined in policy guidance. As such, little weight need be given to its loss.

The site is occupied by three farming businesses. Although part of the site represents an important part of one farming business, it is held on only a short-term arrangement and therefore little weight can be given to its loss. The effects of land loss on the other two businesses will be minimal. In summary, there are no significant agricultural constraints to the non-agricultural development of this site.

## **5.0 AIR QUALITY**

### **5.1 Introduction**

The section considers the impact on air quality caused by traffic from the proposed development of the site at Upper Farm Rhoose. The analysis consists of two sets of computations, which calculate and predict airborne pollutants for existing and future (target) year scenarios. The analyses included are “Local” and “Regional”. It has been decided that the “Generalised Local” was inappropriate for this case study as this is designed to provide performance indicators for alternative road schemes under GOMMMS.

### **5.2 Local Air Quality Management Areas**

Since 1997 local authorities in the UK have been carrying out reviews and assessments of air quality in their areas. The aim of the reviews is to ensure that the national air quality objectives will be achieved. If a local authority discovers any areas where compliance with the objectives is unlikely, this location is declared a Local Air Quality Management Area (LAQM). The local authority then compiles an Air Quality Action Plan. The locality that forms the basis for this assessment is not included in or contains an Air Quality Management Area.

### **5.3 Traffic flows**

The traffic flows used in the assessment of air quality are shown in Table 5.1.

**Table 5.1  
Traffic flows used in the assessment of air quality**

Link	Annual Average Daily Traffic Flow (AADT)				
	2004	2005	2005 + Dev	2010	2010 + Dev
Porthkerry Road – West	7773	7905	9444	8688	10227
Porthkerry Road – East	8979	9132	13049	10036	13953
Link Road north of access	2282	2321	7777	2551	8007
Link Road south of access	2282	2321	2321	2551	2551

These are AADT (Annual Average Daily Traffic) flows, as required by the methodology, and consist of the traffic flows from the *Transport Assessment*. Where required flows have been factored to AADT using a 2004 junction count (17/11/04) at the Porthkerry Road – Rhoose Point Link junction and trip generation data from the TRICS 2004(b) database.

A blanket 5% HGV content has been applied to all links, while free flow vehicle speeds of 40kmh<sup>-1</sup> on the Link Road, 45kmh<sup>-1</sup> on Porthkerry Road West and 55kmh<sup>-1</sup> on Porthkerry Road East have been used.

### **5.4 Background pollutant levels**

Prior to the commencement of air quality calculations, details of the background levels of the assessed pollutants must be established. These are shown in the table below.

**Table 5.2  
Background pollutant levels**

Year	CO mgm <sup>-3</sup>	Benzene ugm <sup>-3</sup>	1,3-butadiene ugm <sup>-3</sup>	NO <sub>x</sub> ugm <sup>-3</sup>	NO <sub>2</sub> ugm <sup>-3</sup>	PM10 ugm <sup>-3</sup>
<b>2004</b>	0.16	0.21	0.08	22.68	16.50	16.90
<b>2005</b>	0.15	0.20	0.07	22.00	16.20	16.48
<b>2010</b>	0.10	0.18	0.05	16.70	13.10	15.70

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The 2001 background pollutant levels were obtained from default concentration maps produced periodically by NETCEN on behalf of DEFRA. These are available with a resolution of 1 square kilometre. The mapping procedure makes use of ambient measurements recorded from a combination of the DEFRA background rural and urban networks and NAEI emission inventory estimates. Year correction factors are also provided to convert 2001 pollutant concentrations to estimates of other year concentrations.

### 5.5 Local air quality assessment

The *Design Manual for Roads and Bridges* (DMRB) Volume 11, describes a procedure for assessing local air quality levels at individual sample locations. This procedure was substantially revised in February 2003, and a spreadsheet calculation package (DMRB Screening Method version 1.01 produced by DETR) produced for undertaking it. The results contained within this document have been produced using this spreadsheet package.

The following tables display air quality calculation results for 1 Murlande Way – being adjacent to Porthkerry Road East and the easternmost dwelling on Murlande Way – representing the nearest existing dwelling to the impacted section of the link road. These are for the following scenarios:

- 2004 Base Year
- 2005 Without Development
- 2005 With Development
- 2010 Without Development
- 2010 With Development

These years represent the base year, and the target years set out in the table below.

The results displayed in the following tables are compared against the compliance figures shown in below.

Pollutant	Objective	Compliance Date
Nitrogen Dioxide (NO <sub>2</sub> )	Annual mean concentration should not exceed 40ug/m <sup>3</sup>	31 December 2005
Particulate Matter expressed as PM <sub>10</sub>	24-hour mean concentration should not exceed 50ug/m <sup>3</sup> more than 35 times a year. Annual mean concentration should not exceed 40ug/m <sup>3</sup>	31 December 2004
	24-hour mean concentration should not exceed 50ug/m <sup>3</sup> more than 7 times a year. Annual mean concentration should not exceed 20ug/m <sup>3</sup>	31 December 2010
Benzene	Running annual mean concentration should not exceed 16.25ug/m <sup>3</sup>	31 December 2003
	Annual Mean concentration should not exceed 5ug/m <sup>3</sup>	31 December 2010
1,3-Butadiene	Running annual mean should not exceed 2.25ug/m <sup>3</sup>	31 December 2003

### 5.6 Results analysis

- Nitrogen Dioxide: Target achieved under all scenarios.
- Particulate Matter: Targets achieved under all scenarios.
- Benzene: Targets achieved under all scenarios.
- Butadiene: Target achieved under all scenarios.

## **5.7 Regional air quality assessment**

As well as changes in local air quality following a scheme, there may be changes in the overall quantity of emissions from the traffic on the road network. The following assessment contains calculated emissions for the immediately impacted road network around the site, consisting of Porthkerry Road from a point 1km west of the adjacent roundabout to roundabout immediately to the west and the link road between the Porthkerry Road roundabout and the first roundabout to the south. This has been undertaken for the base year (2004) and the target compliance years of 2005 and 2010, both with and without the development.

The calculation is based on a combination of traffic flow, composition and speed along with link lengths.

The table below summarises the regional air quality assessment for the immediately impacted links described above:

**Table 5.3  
Regional air quality assessment**

<b>Pollutant</b>	<b>2004 Base</b>	<b>2005 No Dev</b>	<b>2005 With Dev</b>	<b>2010 No Dev</b>	<b>2010 With Dev</b>	<b>Units</b>
CO	7380	6491	8832	5209	6928	kg/year
THC	1005	867	1180	657	874	kg/year
NO <sub>x</sub>	3992	3761	5131	2809	3744	kg/year
PM <sub>10</sub>	134	126	171	86	114	kg/year
CO <sub>2</sub>	999	1004	1369	1029	1372	tonnes/year

As can be seen from the above results, the presence of development traffic does have a negative impact on the air quality of the area, compared to the same year without the development in place. However, anticipated improvements in exhaust emissions have resulted in a forecast reduction in airborne pollutants beyond those prevailing, with the exception of CO<sub>2</sub>, where an increase is anticipated.

## **5.8 Summary**

The calculations show a slight increase in pollutants due to the introduction of additional vehicles, on same year scenarios. However, under no scenario are the air quality management target concentration levels exceeded for any pollutant.

## **6.0 CULTURAL HERITAGE**

### **6.1 Introduction**

The objective of the cultural heritage assessment was to identify the nature and extent of the recorded archaeological resource within, and in the immediate environs of, the site. An analysis of the likely nature and extent of any currently unrecorded archaeological deposits within the area of interest is also provided. The site comprises pasture, mostly bounded by modern housing developments.

### **6.2 Methodology**

This assessment has been guided by the *Standard and Guidance for Desk-Based Assessments* issued by the Institute of Field Archaeologists (IFA 1999) and is guided by Appendix 10 of the *Good Practice Guide for the preparation of Environmental Statements* issued by the former DoE (1995).

The baseline survey involved consultation of readily available archaeological and historical information from documentary and cartographic sources. The major repositories of information consulted comprised:

#### ***Cadw***

- County list of Scheduled Ancient Monuments for Wales (SAMs)
- Register of Parks and Gardens of Historic Interest
- List of Buildings of Special Architectural or Historic Interest

#### ***Glamorgan Gwent Sites and Monuments Record***

- List of known archaeological sites and findspots within the former county

#### ***Glamorgan Records Office***

- Historic maps and documents

#### ***The National Assembly for Wales***

- Central Register of Air Photography for Wales, Cardiff.

#### ***Royal Commission for Ancient and Historic Monuments in Wales (RCAHMW)***

- Database of archaeological sites, excavations and archives.

All points of cultural heritage interest found in the baseline survey are located on Figure 6.2. The gazetteer (Appendix 6.1) correlates points of interest with their reference number on the *Sites and Monuments Record* (SMR), as well as any other relevant statutory designation or status. Points of interest are marked in bold in the body of the text thus, **00**.

A site visit was made on 25 June 2004 in order to examine current land use and topography, and to assess the visible cultural heritage resource of the site.

### **6.3 Baseline survey**

#### ***Designated cultural heritage sites***

The following section identifies, in chronological order, the recorded archaeological resource within the site and its immediate vicinity. Designated cultural heritage sites are as follows:

- *International designations:* No World Heritage Sites are present within, or in the immediate vicinity of, the site.
- *National designations:* Five Grade II Listed buildings (statutory) are present in the vicinity of the site. Eleven sites recorded on the RCAHMW database are present in the vicinity of the site. No Scheduled Ancient Monuments (statutory), Parks and Gardens of Special Historic Interest or Historic Landscapes are present within, or in the immediate vicinity of, the site.
- *Local designations:* Twenty-five sites recorded on the Glamorgan and Gwent *Sites and Monuments Record* are present in the vicinity, one of which is within the site.

#### ***Geology and the palaeoenvironment***

The solid geology of the site comprises Porthkerry Formation Blue Lias Limestones and Mudstones of the Jurassic Era (BGS 1989).

#### ***Previous archaeological work***

A watching brief was carried out at Lower House Farm, Rhoose, in 2001 (Figure. 6.2, 1; Channel Archaeology 2001). No archaeological features or finds were observed during groundworks.

#### ***Prehistoric***

No evidence for prehistoric settlement or activity is recorded in the immediate vicinity of the site.

#### ***Romano-British***

Unassociated sherds of Roman pottery have been found to the north-east of the site (Figure. 6.2, 2).

#### ***Medieval***

Several medieval sites are present in the locality of the proposed development, mostly within Rhoose. The site of a castle, which was abandoned in the 14th century, lies 300m to the north-west of the site (Figure. 6.2, 3). A hearth and rock-cut floor were revealed during road widening, and 12th-century pottery was recovered from the vicinity (Figure. 6.2, 4). A medieval chapel is known to have existed in the vicinity of Rhoose, but the exact location is not known (5). A battle axe and holy water sprinkler have been found at Rhoose (Figure. 6.2, 6), and medieval pottery has been recovered from two fields to the south of the village (Figure. 6.2, 7 and 8).

Medieval sites are also present to the north-east of the site, at Lower Porthkerry, where a medieval settlement was located (Figure. 6.2, 9). The site of a medieval house is known to have been present there (Figure. 6.2, 10) and medieval pottery has been recovered from ploughsoil (Figure. 6.2, 11). The site of a holy well is also thought to be present in the vicinity, although the exact location is not known (12).

#### ***Post-medieval***

Post-medieval settlement was again focused in Rhoose and Lower Porthkerry. Post-medieval buildings in Rhoose include the Grade II Listed Lower Farmhouse (Figure. 6.2, 13) and

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Greystones Farmhouse (Figure. 6.2, **14**), and non-Listed The Cottage (Figure. 6.2, **15**). Two findspots of post-medieval pottery are also present in the vicinity (Figure. 6.2, **16, 17**).

Post-medieval sites at Lower Porthkerry include Lower Porthkerry Farm (Figure. 6.2, **18**) and Upper Porthkerry Farm (Figure. 6.2, **19**), the farmhouses of which are Grade II Listed. The site of a post-medieval stable is also present (Figure. 6.2, **20**).

The sites of two post-medieval lime kilns are present in the vicinity of the site (Figure. 6.2, **21, 22**).

### **Modern**

Several modern sites are present in the vicinity, including an anti-aircraft battery (Figure. 6.2, **23**), cement works (Figure. 6.2, **24**) and Rhoose station (Figure. 6.2, **25**). The sites of now-demolished modern structures in the vicinity include those of a cottage (Figure. 6.2, **26**), a barn (Figure. 6.2, **27**), a lime kiln (Figure. 6.2, **28**), a lime works (Figure. 6.2, **29**) and a church (Figure. 6.2, **30**).

### **Undated**

Several undated features in the vicinity of Lower Porthkerry indicate that a shrunken medieval settlement was present there. These comprise platforms, hollows and other earthworks (Figure. 6.2, **31-33**). Two other areas of possible house platforms have been observed further to the south of Lower Porthkerry (Figure. 6.2, **34, 35**), close to where undated enclosures have been observed (Figure. 6.2, **36**).

### **Historic landscape**

The earliest map to depict the site is the Porthkerry Tithe Map of 1839, which depicts areas of land ownership, but not individual fields. Some hedgerows survive along boundaries marked upon this map, but as this map does not predate an Enclosure Act for the parish, they do not have statutory protection under the criteria for the definition of 'Important' hedgerows laid down in the *Hedgerows Regulations 1997*. However, depiction on a document of 1845 or earlier is generally taken as a bench mark date for the consideration of hedgerows as historically 'Important' by local authorities, and is one of those proposed as a cut-off point in the review of the Regulations published in 1998. Hence, where hedgerows survive along boundaries depicted on the 1839 Tithe Map, they may be considered as being of some cultural heritage value, but without statutory protection (under the criteria for archaeology and history).

A track-way running north to south through the site is depicted on the 1839 Tithe Map. Two further track-ways are depicted within the site, one on the First Edition Ordnance Survey map of 1889 and one on the Third Edition Ordnance Survey map of 1921 (Figure. 6.3).

A now-demolished army camp was present to the north of the site in the mid 20th century (Figure. 3; G. Davies pers. comm.). The site has now been developed for housing. Pipes and tanks thought to be associated with sewage treatment have been observed during ploughing in the field to the south, within the site, where they are still thought to be present (Figure. 6.3).

### **Site visit**

An undated earthwork recorded on the GGSMR (Figure. 6.2, **37**) could not be seen during the site visit, nor had the current land owner observed such a feature in the vicinity (G. Davies pers. comm.). The entry may refer to the hedge banks present along many of the field boundaries within the site (Figure. 6.4). These may have resulted from the clearance of limestones from the main area of the fields to the edges. The banks have been revetted by stone walls in some places (Figure. 6.5).

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Possible features were seen during the site visit; a possible sunken track-way with two branches. These may mark the routes of former track-ways or may be geomorphological in origin, resulting from water running down slope. The westerly branch of the sunken track-way coincides with the line of a path marked on the First Edition Ordnance Survey map of 1889 (Figure. 6.3). The possible features seem to have been enlarged by the movement of grazing animals across them.

### 6.4 Analysis

#### ***Survival***

Some disturbance has taken place in the field to the south of the site of the army camp, due to the construction of a sewage treatment system in this field (Figure. 6.3). Ploughing has taken place in some areas of the site (G. Davies pers. comm.).

#### ***Potential***

The historic maps and entries on the GGSMR and RCAHMW databases suggest that medieval and post-medieval settlement at Rhoose was located to the north-west of the site, and there is no evidence to suggest that it encroached into the proposed development area **CHECK**.

The site is situated close to the medieval and post-medieval settlement at Rhoose and is likely to have been farmed from it. Where hedgerows survive along boundaries marked on the Porthkerry Tithe Map of 1839, they may be considered to be of some cultural heritage value by the local authority, but do not have statutory protection under the archaeology and history criteria of the *Hedgerow Regulations 1997*.

Historic maps and observations in the field suggest that the site was traversed by tracks or paths, one of which still survives as a green lane.

No evidence of an undated earthwork recorded on the GGSMR could be seen during a site visit.

### 6.5 Geophysical survey

A geophysical survey of the site has been undertaken and a copy of the survey is provided in Appendix 6.2. The results of the detailed magnetometer survey targeted over the high and moderately enhanced areas of magnetic susceptibility do not suggest the presence of significant archaeological features within the surveyed area. In the five areas subject to detailed survey, a series of area and linear anomalies were plotted. The majority of these can be related to modern services, agricultural practices and the presence of industrial/and or agricultural rubbish discarded in the modern period. Three anomalies within Area 4 were of uncertain origin, but may also derive from modern activity. These results can be compared to a similar survey carried out for development at RAF St Athan where similar geological conditions prevailed and archaeological features were successfully identified. The survey at Upper Farm has produced no anomalies that can be identified as deriving from archaeological activity.

### 6.6 Conclusions

No known archaeological sites are present within the site and there is low potential for any currently unknown sites to be present. Some hedgerows present within the site may be considered of cultural heritage value, but do not have statutory protection under the *Hedgerow Regulations 1997* (criteria for archaeology and history). The results of the geophysical survey appear to substantiate the negative results of the cultural heritage assessment and indicate that no archaeological remains area present within the area and that no further archaeological investigation is warranted from these results.

## **7.0 DRAINAGE**

### **7.1 Introduction**

A *Drainage Report* for the proposed development has been prepared and accompanies the planning application. The proposals for drainage are described in section 3 above, but the conclusions and recommendations of the report are also summarised in this section.

### **7.2 Foul water drainage**

A new pumping station is proposed to be constructed on the site. The new pumping station would connect to the existing rising main at the mid southern part of the site and existing flows from the Rhoose pumping station would be diverted to the new facility via additional storage. The new facility will pump the flows to the Porthkerry pumping station. This scheme would provide the most benefit to the existing infrastructure since it would shorten the pumping circuit now serving Murlande Way and would be the least disruptive to construct in terms of installation and connections to the existing system. The pumping station will be designed in accordance with Welsh Water guidelines in order that it can be offered for adoption or requisitioned from Welsh Water. Full details are provided in the submitted *Drainage Report*.

### **7.3 Surface water drainage**

It is proposed that a new storm water drainage system discharging to the east, via a thrust bore under the railway line and across to a new or existing sea outfall, would be installed. Network Rail has confirmed its in-principle agreement to the scheme. This scheme would provide for a comprehensive drainage solution that would not appear to have any consequential effect on the surrounding environs and in particular would be designed not to increase greenfield run-off rates to the south of the site. Subject to the necessary permissions and approvals, this drainage scheme could be offered for adoption or requisitioned from Welsh Water. Full details of the proposed layout for the storm water drainage system are provided in the submitted *Drainage Report*.

## **8.0 ECOLOGY**

### **8.1 Introduction**

The site comprises approximately 26 hectares of greenfield land in open pasture located between the existing village of Rhoose to the north and the ongoing Rhoose Point development to the south. In 2004, Capita Symonds were appointed to provide a baseline ecological assessment and ecological input to any necessary environmental statement. In 2007 updated surveys were carried out prior to the submission of a planning application for residential development: see Tables 8.1 and 8.2 for a summary of surveys carried out. A small area of additional land was surveyed in 2008.

### **8.2 Consultations**

The following organisations were consulted for ecological and related information about the site:

- Countryside Council for Wales (CCW)
- Environment Agency Wales (EA)
- Vale of Glamorgan County Council (Biodiversity Officer)

Those initial consultations were carried out with the purpose of determining further survey work required and also to establish if any statutory and other non-statutory designations would be affected by the proposed development.

The CCW confirmed there were no statutory sites either within or adjacent to the site but noted that the Vale of Glamorgan is an important area for great crested newts.

In the absence of ponds/water courses on the site, the Environment Agency was unlikely to have any major concerns regarding biodiversity. However, otters, water voles and great crested newts occur nearby and potential impacts on the three species should be considered.

The Council's Biodiversity Officer confirmed that the site was not designated for any nature conservation reasons. In addition it was recommended that some additional survey work (for dormouse and reptiles) be carried out and mitigating measures be compiled with regard to reptiles.

### **8.3 Nature conservation designations**

The site does not contain or form part of any area that has been designated either statutorily or non-statutorily for its nature conservation interest.

Consultation with the Biodiversity Officer at the Vale of Glamorgan Council revealed that a large population of the European protected Great Crested Newt occurs at a pond less than 1 kilometre from the site. It was agreed that due to the intervening urban development and major roads between the pond and the site, there will be no impacts upon this population in connection with this proposed development.

### **8.4 Surveys undertaken**

The nature conservation and ecological assessments were undertaken in accordance with standard methodologies and are described for each survey carried out in section 8.5.

Consultations with the nature conservation organisations listed previously, together with the Phase I (Extended) Habitat and Hedgerow Survey observations described below, recommended the following targeted surveys be undertaken (Table 8.1).

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A small area of land, in the north-western corner of the site, was surveyed in 2008 and is shown on Figure 8.1A.

**Table 8.1 Details of completed surveys 2004/05**

<b>Survey</b>	<b>Reason</b>	<b>Date</b>
Phase I Habitat (extended)		June 2004
Hedgerow	Hedgerows could be important according to <i>Hedgerow Regulations 1997</i>	
Badgers	Suitable habitat – Phase I survey. Additional survey recommended by Capita Symonds and Biodiversity Officer, Vale of Glamorgan Council due to timing of initial work	June 2004 March 2005
Bats	Suitable habitats identified in Phase I survey	September 2004
Breeding Birds	Recommended by Biodiversity Officer, Vale of Glamorgan Council. Suitable habitat identified in Phase I survey	April – June (incl) 2005
Dormouse	Suitable habitat identified in Phase 1 survey and sub-optimal timing of initial survey. Additional surveys recommended by Biodiversity Officer, Vale of Glamorgan Council	June 2004 April – November (incl) 2005
Invertebrates	Suitable habitat identified in Phase I survey. Survey recommended by Biodiversity Officer, Vale of Glamorgan Council	Summer 2005
Reptiles	Slow worm recorded in Phase I survey	April – September (incl) 2005

**Table 8.2 Details of completed surveys 2007**

<b>Survey</b>	<b>Reason</b>	<b>Date</b>
Hedgerow	Previous survey highlighted some important hedgerows.	July 2007
Badgers	Previous survey identified signs of activity.	May 2007
Bats	Suitable habitat identified and foraging activity previously recorded.	September 2007
Breeding Birds	Red list species previously identified within survey area.	May – July (incl) 2007
Dormouse	Suitable habitat previously identified, previous survey hampered by tubes being lost and/or removed. Update requested by Biodiversity Officer, Vale of Glamorgan Council	May – October (incl) 2007
Reptiles	Previous survey reptiles recorded. Update requested by Biodiversity Officer, Vale of Glamorgan Council	May – September (incl) 2007

## **8.5 Baseline conditions: surveys and results**

### ***Phase I (Extended) and hedgerow survey (Figure 8.1)***

#### **Introduction**

Hedgerows are considered valuable habitats as they act as wildlife corridors and are a primary habitat for many species, particularly butterflies and moths, farmland birds, bats and dormice. Hedgerows are the most significant wildlife habitat over large stretches of lowland UK and are an essential refuge for a great many woodland and farmland plants and animals.

#### **Legislation**

The *UK Biodiversity Action Plan* lists 45 habitats that are priorities. The plan lists targets for increasing the size and quality of these habitats across the UK. As well as these broad targets some plants are listed under the UK BAP, and some are protected under the *Wildlife and Countryside Act 1981*.

The *Natural Environment and Rural Communities Act 2006* (NERC) made it the responsibility of public authorities to have due regard for conserving biodiversity, including restoring or enhancing a population or habitat. Due to this legislation the recommendations sections give possible ecological enhancements that could be incorporated into the phases, though these are not exhaustive.

#### **Method**

The site was surveyed in June 2004. The survey involved a walkover of the area with main habitats categorised and mapped according to the *Phase I Habitat Survey Guidelines* (Nature Conservancy Council, 1990).

The hedgerows were surveyed in order to ascertain the extent to which they meet the criteria within the *Hedgerow Regulations 1997*, which are shown below. The survey records the number of woody species in the hedge, the ground flora and certain features of the hedge, for example the presence of a bank or ditch along its length. The survey results will determine whether the hedgerows under consideration qualify (on ecological grounds) as Important Hedgerows as defined under the Regulations. Historical and archaeological data have not been considered here but do form an important part of the Regulations and are referred to in section 6.0 of this statement.

#### **Survey results 2004**

The following habitats were identified in the survey area:

- Dense scrub
- Improved grassland
- Semi improved grassland
- Ruderal plant communities
- Hedgerows.

Although improved grassland formed the main habitat on site, hedgerows were the most ecologically valuable habitat in the area, providing food and shelter to nesting birds, small mammals, reptiles and invertebrates. There were six 'important' hedgerows (as defined by the *Hedgerow Regulations*) within the survey area - H1, H2, H3A, H3B, H4A and H6 - based on a purely ecological assessment and it is likely that more would be classed as important should historical information be included.

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Ancient and/or species rich hedgerows are a UK BAP and Vale of Glamorgan LBAP habitat. There were no other priority habitats on site and no plants of conservation concern. However the semi improved grassland supported invertebrates, especially grasshoppers and crickets, and combined with the seed crop from species such as teasel and thistle provides a rich food source for nesting birds.

### Survey results 2007

In 2007 the hedgerows were the only habitat to be resurveyed as they were of the most importance ecologically.

As previously recorded hedgerows 1, 2, 3A, 4A and 6 are still classed as 'important' hedgerows under the *Hedgerow Regulations*. Hedgerow 3B was not identified as being 'important' as previously included in the features was a parallel hedge within 15m and parallel right of way (PRoW). If a PRoW is a feature then a parallel hedge cannot be included as a feature as well.

During hedgerow surveys a 30m section is surveyed for woody species, ground flora and other features. Therefore, if the same hedgerow is surveyed on two separate occasions different sections are likely to be surveyed so different species may be recorded.

### Survey results 2008

The small area of land shown on Figure 8.1A was subject of a walk-over survey in January 2008. Grassland in both fields can be classified as amenity as it is intensively managed. This type of habitat is of little significance with regard to biodiversity. Trees along the western boundary, the hedgerow on the eastern boundary and a small area of scrub provide suitable habitat for breeding birds. A large pile of composting grass cuttings, piles of rubble and wood chippings are suitable for use by reptiles as refugia/hibernacula. As reptiles have been found in neighbouring fields the potential for these areas to support reptiles is high.

## 8.6 Badgers

### Introduction

Badgers (*Meles meles*) are opportunistic omnivores, taking a range of fruits, nuts, cereals, small mammals and invertebrates. In Britain, earthworms are the most important prey item. Varied habitats, with a range of natural and semi-natural features, support the greatest numbers of animals. Woodland is usually chosen for main setts and areas of improved grazing are important sources of earthworms.

### Legislation

The badger is fully protected by the *Wildlife and Countryside Act 1981* (as amended) and the *Badger Act 1992*. Apart from directly killing a badger, it is also illegal to interfere with a sett by either damaging or destroying it, to obstruct access to or any entrance to a badger sett and to disturb a badger whilst it is occupying a sett.

### Method

The survey site was walked searching for field signs of badgers. This included looking for setts, latrines, pathways, hair caught on fences and thorns and footprints in soft earth or mud. The site and field boundaries were walked with particular attention paid to gaps under wire fencing or apparent runs through hedgerows.

The surveys were undertaken in the summer of 2004, March 2005 and May 2007.

The optimum time is January to May as badgers are most active at this time of year marking out their territories.

### **Survey results 2004/2005**

There was no evidence of badgers during the 2004 survey, the timing of the survey being a moderate constraint. Although mammal runs were noted along the southern boundary of the site, no badger signs were found. It was recommended that the site be re-surveyed in the winter months, when the lack of foliage makes signs easier to see.

During the 2005 survey badger footprints were found in soft mud at the corner of a field (the junction of H10 and H11) adjacent to the railway embankment. Badger hairs were found on the nearby fence. This is an ideal foraging ground where cows usually graze. Earthworms are often found in cowpats so badgers would find food by foraging in the mud and cowpats. The fence was intact around the field with no signs of badgers entering the field under the fence. This suggests that badgers move along the railway embankment, entering the field by H8.

The embankment alongside H10 next to the railway was suitable for setts, as it was not covered with ballast, and bare earth was exposed. No setts were found but two large mammal runs were recorded going into the railway embankment in the south-east corner of the site in the semi improved field.

Evidence suggests badgers use the site for foraging but no setts were found on the site.

The site has housing developments to the north and west, a road to the east and a railway to the south. It was initially considered possible that the site could therefore be a significant foraging area if it was the only area of improved pasture in the locality. The surveyors therefore checked land that was connected to the site via the railway corridor.

There was suitable foraging habitat on the other side of Pentir y De consisting of arable and grassland fields and woods. It is likely that badgers use the railway as a travelling corridor between their setts and these foraging areas and do not use the site to a great extent as foraging signs were found only in the southernmost field.

### **Survey results 2007**

A further survey for badgers was carried out on 18 May 2007 to ascertain if badgers were still using the site.

Although several pathways were noted on the site, these were not consistent with badger activity and were likely to have been used by foxes.

No setts, latrines, footprints or hairs signs of badger activity were recorded.

## **8.7 Bats**

### **Introduction**

There are seventeen bat species known to be resident in Britain. All are small, nocturnal, flying, insectivorous mammals that are under considerable conservation threat, many having undergone massive population declines over the last century. Some species, such as the common and soprano pipistrelle bats (*Pipistrellus pipistrellus* and *P. pygmaeus*) still remain relatively common and widespread in the UK, while others, such as greater horseshoe bats (*Rhinolophus ferrumequinum*), have an extremely limited distribution.

### **Legislation**

All British bat species are strictly protected under the provisions of the *EC Habitats Directive* and the *Wildlife and Countryside Act 1981* (as amended). The legislations afford complete legal protection to all bats and their roosts. Any entry to a roost site and any work, which either affects or destroys a roost site, can be carried out only under licence from the Welsh

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Assembly Government (WAG) as advised by Countryside Council for Wales (CCW). The wider requirements of the *Habitats Directive* seek to ensure that the protected species listed are either maintained at or restored to "favourable conservation status", and means that the use of the site by bats for roosting, foraging and/or commuting needs to be assessed.

### Methods

Surveys were conducted during daytime and dusk plus one to two hours.

Daytime examination of the site was carried out to identify and assess trees that might offer potential bat roosts. Nocturnal observations involved a walk-over of all the site using heterodyne detector and Tranquillity time expansion detector to allow identification of presence of bats and in some cases which species were present. Trees offering potential roosts were also monitored during the dusk survey for any emerging bats.

### Survey results 2004

The survey was undertaken on 9 September 2004 during the daytime and dusk plus 1 hour.

Four trees offered limited potential for roosting bats: a dead tree trunk approximately 6m tall with ivy cover, two poplar trees with modest ivy cover and a multi-stemmed beech with light ivy cover: see Figure 8.1.

No bats flew out of, or into, any potential roost areas at the site, and no other habitat features likely to host roosting bats were found.

No (preferential) tree-roosting bat species were recorded on site.

No bat-roost related development constraints were identified: however, the on site hedgerows offer a feeding resource for bats, in an area of extensive housing development.

### Survey results 2007

A further aerial activity survey was carried out on 27 September 2007. The survey commenced at 18.30 hours, 30 minutes prior to sunset and continued for two hours. The weather was dry, with light winds and no cloud cover. The temperature at the start of the survey was 10 °C dropping to 7.5 °C.

Frequency division and heterodyne bat detectors were used to pick up bat calls and identify species.

Whole-site walkover recorded a single Common pipistrelle (*Pipistrellus pipistrellus*) flying behind the garden boundaries of Porthkerry Road, and two Common pipistrelles (*Pipistrellus pipistrellus*) flying along the railway line that forms the boundary of the survey site: see Figure 8.1.

Unfortunately, it was not possible to ascertain the direction of bat flight because of the poor visibility due to the fading light.

No bat roost related development constraints were identified during the survey.

## 8.8 Breeding birds

### Introduction

The site consists mainly of improved grassland, hedgerows and scrub which provides suitable breeding and foraging habitat for a variety of bird species.

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The bird breeding season runs from February to September inclusive.

### Legislation

Breeding birds and their nests and eggs are subject to statutory protection under the *Wildlife and Countryside Act 1981* (as amended). In addition to statutory protection, the bird species of Britain are also subject to various conservation designations intended to indicate their rarity, population status and conservation priority, as described previously. These do not have statutory force but may be instrumental in determining local, regional and national planning and development policies.

Bird species which have suffered serious population or range declines over the past 25 years, are highlighted in *Birds of Conservation Concern* (RSPB 2002). The Red list includes those species which have suffered >50% decline; the Amber list includes those species which have undergone a 25-50% decline in the past 25 years.

Under section 42 of the *National Environment and Rural Communities Act 2006*, the Welsh Assembly Government has compiled a list of habitats and species, including bird species, determined to be of principal importance for the conservation of biodiversity in Wales.

### Method

All morning surveys were carried out between the hours of 06.00 and 09.30. The evening survey was carried out between 19.00 and 23.00 hours.

In order to ensure the survey was repeatable across a number of survey visits a transect methodology was used. As the area under survey was relatively small in size the transect line was selected in order that it included all habitat types within the survey area. This method was used, as a random transect line was likely to miss some important habitat sections.

Bird species were identified by sight, using binoculars, and by song recognition. All species identified were recorded along with their location, sex and the activity of each individual.

### Survey results 2005

The proposed development site was surveyed for breeding birds on four separate occasions during April, May and June 2005. Twenty-nine different species of birds were recorded in the area of search, of which twenty-two were confirmed as breeding. Figure 8.2 illustrates the survey results. Table 8.3 provides information concerning the conservation status of the species recorded.

The habitats within the survey boundary are composed predominantly of improved grassland fields divided by mature hedgerows. An area of semi-improved grassland is located at the eastern edge of the site. The surrounding areas, to the west and north, are dominated by housing developments. The fields to the eastern side of the site were ungrazed prior to the survey and consisted of a dense sward of agricultural grasses. A number of skylark (*Alauda arvensis*) were recorded in the semi-improved grasslands. Grey partridge (*Perdix perdix*) were recorded in the southern corner of these same areas.

Many of the fields on the western side of the survey area are subject to intensive grazing by horses and sheep. Many of the hedgerows in this area are in an unfavourable condition and have been seriously damaged by uncontrolled stock grazing. Despite their poor state these hedgerows support a number of species including blackbird (*Turdus merula*), chaffinch (*Fringilla coelebs*) and blue tit (*Parus caeruleus*).

A railway line forms the southern boundary of the survey area. A narrow area of dense scrub H10 and H17 divided the railway from the adjacent grassland area. This scrub area is an important feeding and breeding area for many bird species.

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**Survey results 2007**

Further surveys were carried out between 1 May and 2 July 2007 and included three morning survey visits and one evening survey visit.

Thirty different species of birds were recorded in the area of search, of which twenty three were confirmed as breeding. Figures 8.3, 8.4 and 8.5 illustrate the survey results.

Table 8.4 provides information concerning status of the species recorded.

Species present in 2005 but not present in 2007 survey include great tit (*Parus major*), Grey Partridge, Grey Wagtail (*Motacilla cinerea*), Meadow pipit (*Anthus pratensis*), Peregrine falcon (*Falco peregrinus*) and Song thrush (*Turdus philomelos*).

Additional species present in the 2007 survey were blackcap (*Silvia atricapilla*), chiffchaff (*Phylloscopus collybita*), Herring gull (*Larus argentatus*), Kestrel (*Falco tinnunculus*), rook (*Corvus frugilegus*), swift (*Apus apus*) and spotted flycatcher (*Muscicapa striata*).

**Table 8.3 Conservation status of bird species occurring on site 2005**

BTO symbol	Species common name	Species scientific name	No. of pairs	National status				
				WCA (Schedule 1)	UK BAP	Section 74 CRoW (Wales)*	RSPB Red/Amb (UK)	RSPB Red/Amb (Wales)
B	Blackbird	Turdus merula						
BT	Blue Tit	Parus caeruleus	3		✓			
C	Carrion Crow	Corvus corone	2					
CH	Chaffinch	Fringilla coelebs	2					
CD	Collard Dove	Streptopelia decaocto	1					
D	Dunnock	Prunella modularis	4		✓			A
GO	Goldfinch	Carduelis carduelis	1		✓			
GT	Great Tit	Parus major	1		✓			
GR	Greenfinch	Carduelis chloris	7		✓			
P	Grey Partridge	Perdix perdix	1			✓	R	
GL	Grey Wagtail	Motacilla cinerea	Female		✓			A
HM	House Martin	Delichon urbica	Feeding flock					A
HS	House Sparrow	Passer domesticus	8				R	
JD	Jackdaw	Corvus monedula	2					
LB	Lesser Black Backed Gull	Larus fuscus	Feeding					A
LI	Linnet	Carduelis cannabina	2			✓	R	
MG	Magpie	Pica pica	2					
MP	Meadow pipit	Anthus pratensis	1					A
PE	Peregrine falcon	Falco peregrinus	Feeding	✓				
RN	Raven	Corvus corax	1					
R	Robin	Erithacus rubecula	1					
S	Skylark	Alauda arvensis	3		✓	✓	R	

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BTO symbol	Species common name	Species scientific name	No. of pairs	National status				
				WCA (Schedule 1)	UK BAP	Section 74 CRoW (Wales)*	RSPB Red/Amb (UK)	RSPB Red/Amb (Wales)
ST	Song Thrush	<i>Turdus philomelos</i>	1			✓	R	
SG	Starling	<i>Sturnus vulgaris</i>	2				R	
SL	Swallow	<i>Hirundo rustica</i>	Feeding flock					A
WH	Whitethroat	<i>Sylvia communis</i>	1		✓			
WW	Willow Warbler	<i>Phylloscopus trochilus</i>						
WP	Wood Pigeon	<i>Columba palumbus</i>	5					
WR	Wren	<i>Troglodytes troglodytes</i>	2					

The CRoW Act has been superseded by the NERC Act 2006

Species in bold highlight those recorded as breeding within the survey area.

**Table 8.4 Conservation status of bird species occurring on site 2007**

BTO symbol	Species common name	Species scientific name	No. of pairs	National status				
				WCA (Schedule 1)	UK BAP	Section 42 NERC 2006	RSPB Red/Amb (UK)	RSPB Red/Amb (Wales)
B	<b>Blackbird</b>	<i>Turdus merula</i>	4					
BC	<b>Blackcap</b>	<i>Sylvia atricapilla</i>						
BT	<b>Blue Tit</b>	<i>Parus caeruleus</i>	4		✓			
C	<b>Carrion Crow</b>	<i>Corvus corone</i>						
CH	<b>Chaffinch</b>	<i>Fringilla coelebs</i>	1					
CH	<b>Chiffchaff</b>	<i>Phylloscopus collybita</i>	1					
CD	<b>Collard Dove</b>	<i>Streptopelia decaocto</i>	2					
D	<b>Dunnock</b>	<i>Prunella modularis</i>			✓			A
GO	<b>Goldfinch</b>	<i>Carduelis carduelis</i>	1		✓			
GR	<b>Greenfinch</b>	<i>Carduelis chloris</i>	1		✓			
HG	Herring Gull	<i>Larus argentatus</i>					A	
HM	House Martin	<i>Delichon urbica</i>	Small feeding flock					A
HS	<b>House Sparrow</b>	<i>Passer domesticus</i>	2				R	
JD	<b>Jackdaw</b>	<i>Corvus monedula</i>	Feeding flock					
K	Kestrel	<i>Falci tinnunculus</i>					A	

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BTO symbol	Species common name	Species scientific name	No. of pairs	National status				
				WCA (Schedule 1)	UK BAP	Section 42 NERC 2006	RSPB Red/Amb (UK)	RSPB Red/Amb (Wales)
LB	Lesser Black Backed Gull	<i>Larus fuscus</i>						A
LI	<b>Linnet</b>	<i>Carduelis cannabina</i>	6 & feeding flock			✓	R	
MG	<b>Magpie</b>	<i>Pica pica</i>	3					
RN	Raven	<i>Corvus corax</i>						
R	<b>Robin</b>	<i>Erithacus rubecula</i>						
RO	<b>Rook</b>	<i>Corvus frugilegus</i>	1					
S	<b>Skylark</b>	<i>Alauda arvensis</i>	2		✓	✓	R	
SF	<b>Spotted Flycatcher</b>	<i>Muscicapa striata</i>			✓	✓	R	
SG	<b>Starling</b>	<i>Sturnus vulgaris</i>					R	
SL	Swallow	<i>Hirundo rustica</i>	Feeding flock inc. juv.					A
SI	Swift	<i>Apus apus</i>						
WH	<b>Whitethroat</b>	<i>Sylvia communis</i>	2		✓			
WW	<b>Willow Warbler</b>	<i>Phylloscopus trochilus</i>	1					
WP	<b>Wood Pigeon</b>	<i>Columba palumbus</i>	3					
WR	<b>Wren</b>	<i>Troglodytes troglodytes</i>						

Species in bold highlight those recorded as breeding within the survey area.

**Wales** R = Red (high concern); A = Amber (intermediate concern) Thorpe RI and Young A (2003) The population status of birds in Wales: an analysis of conservation concern: 2002-2007, RSPB Cymru, Cardiff

S74 WAG's Section 74 List of Species and Habitats of Principle Importance for the Conservation of Biodiversity in Wales

**UK** Red (high concern); Amber (medium concern) Gregory et al (2002) The population status of birds in the UK: Birds of conservation concern: 2002-2007, RSPB

## 8.9 Dormouse

### Introduction

The dormouse (*Muscardinus avellanarius*) is a strictly nocturnal species, found in deciduous woodland and overgrown hedgerows. It feeds on flowers, pollen, fruits, insects and nuts. Dormice need a succession of different foods through the seasons but do not like to travel far for them (usually less than 70m). In general, the fewer the species of tree in a wood or hedgerow, the less likely it is to support dormice. Valuable species include hazel (*Corylus avellana*), oak (*Quercus robur*), bramble (*Rubus fruticosus*), elder (*Sambucus nigra*), honeysuckle (*Lonicera periclymenum*) and ash (*Fraxinus excelsior*). Honeysuckle is a particularly valuable plant for dormice, since it provides their preferred nesting material and also provides food for a longer period than many other woodland plants, at times when little

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else is available. The survey was conducted because dormice could potentially inhabit the woodland and scrub within the railway boundary so could be affected by vegetation clearance.

### Legislation

The dormouse is protected under schedule 5 of the *Wildlife and Countryside Act 1981*. This provides full protection of the animal and its places of shelter. The *Countryside and Rights of Way Act 2000* has amended the *Wildlife and Countryside Act 1981*, making it an offence to recklessly or deliberately disturb the animal. The species is further protected under Annex IVa of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (The Habitats Directive), enacted in the United Kingdom under the provisions of schedule 2 of the *Conservation (Natural Habitats, etc) Regulations 1994*. The Dormouse is a UKBAP species, a Species of Principal Conservation Concern for Biodiversity in Wales (section 46 NERC Act) and a Vale of Glamorgan LBAP species.

### Method

The most common dormouse survey method is to search for opened hazelnuts. Dormice open hazelnuts leaving distinctive tooth marks. This allows for positive identification and therefore can indicate presence of dormice in an area. Due to the lack of hazel at the site, a nest search was undertaken, whereby the undergrowth was carefully examined for dormouse nests. Particular attention was paid to vegetation that dormice preferentially use, such as thickets of bramble over 4m tall, which provide food throughout the year.

An alternative method is to place nest tubes in suitable habitat; for example deciduous woodland or overgrown hedgerows. The nest tubes are put in place in early April, before dormice come out of hibernation, and are checked monthly for the presence of dormice.

### Results 2004

In June 2004 a dormouse nest search was undertaken in potentially suitable habitat such as large, mature hedges on site. Due to the timing of the dormouse survey, only a search for dormouse nests was possible and even the timing for this search was not optimal. Due to the sub-optimal timing of the original survey and following discussions with the Vale of Glamorgan Council's Biodiversity Officer a further nest survey, over a whole season, was recommended. No nests were found.

### Results 2005

In April 2005 one hundred dormouse nest tubes were attached to suitable branches in hedgerows throughout the site. These were left to settle into the environment and to allow the vegetation to grow denser. They were then checked at intervals from May until November, in accordance with The Mammal Society guidelines. This survey was hampered by the loss/removal of some of the dormouse tubes. No evidence of dormice was recorded.

### Results 2007

In June 2007 sixty-eight dormouse nest tubes were attached to suitable branches in hedgerows throughout the site. The survey effort concentrated on the hedgerow alongside the railway and the green lane and was carried out in accordance with The Mammal Society guidelines. The tubes were checked at intervals from June until October

During this survey there was no apparent loss/removal of tubes as in previous surveys. No evidence of dormice nests or nesting material was recorded in any of the tubes.

## **8.10 Invertebrates**

### **Introduction**

There are estimated to be approximately 30,000 species of invertebrates present in the British Isles. Invertebrates are a very diverse group of animals, taking advantage of a huge range of niches, which makes them a difficult group to study.

### **Legislation**

Protection of certain invertebrates is afforded through international and national legislation while others are covered by various designations.

### **Methods**

The surveys were carried out in good weather during the summer months of 2005. Optimum survey times for invertebrates are from May to September.

A variety of methods were employed:

- Sweep netting to catch flying insects such as butterflies, the sweep net was also used to sweep through the undergrowth to catch invertebrates such as spiders.
- Active searching, as the name suggests, suitable places for example under rotting wood or under stones were 'searched'.
- Incidental observations of invertebrates found during other surveys, such as reptile surveys.

The survey effort for 2007 was severely hampered by the adverse weather conditions throughout May, June, July and the first week of August.

Additional effort to record invertebrates was undertaken during the hedgerow survey, together with an assessment of key invertebrate habitats at the site.

Further incidental recording was undertaken during the reptile and dormouse survey visits.

These records therefore provide the majority of the information for the 2007 survey.

### **Survey results 2005 and 2007**

No species protected by legislation were recorded from the site and the habitat was not suitable for the three invertebrate species contained in the Vale of Glamorgan Species Action Plan of the LBAP. These are Marsh fritillary butterfly, high brown fritillary butterfly and chalk carpet moth.

As with any ecological survey, it is easier to prove presence of a species than absence, although the habitats on site are not deemed suitable for protected species of invertebrates or species listed in the LBAP. Therefore no specific mitigation for these species is required.

One notable species, the speckled bush cricket, was recorded on site in 2005. Some of the habitats identified at the site, such as the hedgerows and semi improved grassland provided limited potential for invertebrate species listed as "of conservation concern". The variety of habitats, however, is likely to be used by a wider range of invertebrate groups to the overall benefit of biodiversity.

The key invertebrate habitats at the site comprised hedgerows and the semi improved grassland to the east of the site.

Since the 2005 survey, the area of semi improved grassland to the east of the site has been cut and ploughed generally removing the majority of its invertebrate interest.

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Only common and widespread species were noted during surveys in 2007 and included Speckled wood (*Pararge aegeria*) Peacock (*Inachis io*.) Small tortoiseshell (*Aglais urticae*) and Meadow brown (*Maniola jurtina*) butterflies, common Pill woodlouse (*Armadillidium vulgare*), common shiny woodlouse (*Oniscus asellus*), common rough woodlouse (*Porcellio scaber*) and earthworms (*Lumbricus terrestris*).

### 8.11 Reptiles

#### Introduction

Habitats favoured by reptiles tend to be sunny, open, undisturbed, well-drained and often south-facing. Typical habitats include hedgerow bases, road/railway embankments, rough grassland and unintensively managed farmlands.

#### Legislation

The *Wildlife and Countryside Act 1981* (as amended) provides varying levels of protection for reptiles. Four species – adder (*Vipera berus*), common lizard (*Lacerta vivipara*), grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*) – are protected in respect of sale or deliberate or reckless killing or injury and occur in South Wales. These four species are also listed as species of nature conservation importance in the Vale of Glamorgan's Local Biodiversity Action Plan (LBAP).

Slow worms were recorded on site through the Phase I survey in 2004 and thus a reptile survey was recommended as part of further ecological works.

#### Method

The use of artificial refugia (for example, corrugated iron sheets, known as tins or roofing felt tiles) is the most efficient and commonly adopted method for locating reptiles. All reptiles have a tendency to hide under certain materials that warm up when they are exposed to the sun and the use of artificial refugia exploits this tendency. By hiding under refugia reptiles can regulate their body temperature and evade predators at the same time.

Roofing felt tiles were laid around the site concentrating the refugia in areas with suitable reptile habitat such as around the edges of fields and hedge banks dividing fields. These were then checked on six occasions in good weather. After the final check the refugia were collected. Any naturally occurring refugia within the survey area were also checked on each visit.

#### Survey results 2005

The reptile survey took place during the period April – September 2005. Suitable reptile habitat such as short and long grass, hedge banks, scrub and man made refugia such as piles of rubble and stone walls were targeted during the survey.

Slow worms were the only reptiles recorded during the survey. They were primarily found along the boundaries of the improved grassland to the west of the site. Gardens and the railway line border the closely grazed fields and it is likely that slow worms live predominantly in these areas but use refugia such as tin sheets on the grassland to bask under.

The hedge banks throughout the site were considered to have potential for reptiles. They have south- and west-facing banks, suitable for basking, and associated dry stone walls, which could provide shelter and possibly hibernacula. No reptiles were found in these areas during the survey.

No reptiles were found in the semi-improved grassland field during the survey but survey efforts were hampered by the frequent disappearance of the survey mats. One slow worm

was found on the boundary of an improved grassland field to the east of the public footpath that transects the site. Again, the grassland itself would be unlikely to support reptiles due to its flat, featureless nature and dense sward of grass.

#### **Survey results 2007**

A further survey was carried out between May and October 2007. Any naturally occurring refugia (rubble piles and stone walls) within the survey area were also checked on each visit.

As in previous surveys slow worms were the only reptiles recorded. They were found along the railway boundary to the south-west of the site and along the boundary with the houses north-west of the site.

Mats laid along the boundaries of the improved fields disappeared or were ripped up by livestock which hampered the survey efforts.

### **8.12 Ecological assessment; mitigation proposals; opportunities**

Environmental impacts and constraints associated with the proposed housing development together with mitigation proposals and opportunities are detailed below. Figure 8.1 illustrates most of the information described.

The overall interest of the site, need not be greatly affected provided that the mitigation proposals are implemented. Recommendations concerning important hedgerows, translocation, compensatory planting, creation and management of public open spaces and verges and encouragement of wildlife friendly gardening, would reduce the impact of the development. In some cases the biodiversity interest of the site and adjacent areas could be increased. Initially site clearance works associated with the proposal should be timed so as to avoid disturbance and/or injury to protected species such as birds and reptiles.

Proposals concerning the development and ongoing management for biodiversity should be carried out in close consultation with the Council and its Biodiversity Officer, as part of the Council's and developers' commitment to sustainable development. The Welsh Assembly Government has an obligation under the *Natural Environment and Rural Communities Act 2006* "to have regard for" biodiversity in the exercise of its functions.

### **8.13 Hedgerows**

The ecological value of the hedgerows need not be lost if existing hedgerows and trees on site could be retained. Government policy specifies that good design, high quality environments and diverse wildlife should be achieved within new developments and through land use planning.

Providing for wildlife within the built environment has been shown to improve the desirability of an area as a place to live or work and to benefit the health and well being of the inhabitants (Land, 2004). The design of the housing development should therefore ensure the maintenance and enhancement of the ecological value and interest of the area.

The following mitigation is therefore proposed:

- Retain as much of the existing hedgerows, trees and scrub as possible especially important hedgerows H1, H2, H3A, H3B, H4A and H6 and scrub area adjacent to the railway embankment H10 and H17. Vegetation clearance, if necessary, should not be carried out during the bird-breeding season. (The bird-breeding season runs from February to August inclusive.)
- Where loss of sections of hedgerow is unavoidable, compensatory planting of trees and shrubs of local provenance should be undertaken to achieve no net loss of hedgerow overall.

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- Improve the connectivity of hedgerows in the area using translocated plants from those hedgerows that were removed or through the planting of native shrubs and trees.
- If an important hedgerow requires removal or translocation as part of the scheme a hedgerow removal notice must be sent to the local planning authority who will decide if the circumstances justify the removal of the hedgerow.
- Translocate sections of important hedgerows to suitable receptor sites where removal is unavoidable.
- Organise gardens together, to form a large area of habitat to act as a 'stepping stone' between higher quality habitats. Gardens should be connected to existing hedgerows and scrub where possible through the provision of tree-lined streets or planted, native hedgerows.
- Native plants should be used where possible to support invertebrates and provide seed and berry crops for foraging birds. The exotic plant *Cotoneaster interimma* is also useful as it fruits late between hawthorn and ivy, providing finches, thrushes and tits with berries.
- Management of the vegetation for biodiversity should be included in the maintenance contract for public open spaces. This should include an appropriate mowing régime for grass verges and amenity areas as well as suitable hedgerow management.
- The Council's Biodiversity Officer should be consulted for advice on biodiversity matters relating to the development within the context of the Council's strategy for wildlife.
- The grassland in the area is not of high ecological value although the semi-improved grassland field (SI) does support many invertebrates. To mitigate the loss of this area for invertebrates, areas of public grassland within the housing development should be managed for invertebrates and wildlife friendly gardening encouraged, with the provision of nectar-rich flowers particularly beneficial.

### 8.14 Badgers

The survey suggests that the scheme will not have a significant negative impact on the local badger population, as there is extensive foraging habitat in the nearby area. Therefore no specific mitigation is proposed.

### 8.15 Bats

No bat roosts were found on site and no related development constraints are anticipated.

The hedgerows offer good cover for commuting and foraging, and should be maintained post-development by compensatory planting of an equivalent area of native shrub/tree species.

Common Pipistrelle (*Pipistrellus pipistrellus*) is the only species to be recorded at the site in both 2004 and 2007. This species is not deterred by street lighting and can be expected to continue to use this area providing that feeding opportunity is available.

### 8.16 Breeding birds

On a national level, one of the Government's fifteen headline indicators for sustainable development relates to populations of wild birds.

Particular attention should be paid to the retention of hedgerows along the Public Footpath and the scrub adjacent to the railway embankment, H1, H2, H3A, H3B, H4A, H6, H10 and H17 (Figure 8.1) because of their high value to breeding and feeding birds.

Vegetation clearance should be carried out outside the bird-breeding season (The breeding season runs from February – August inclusive.)

Prior to any earthworks or topsoil stripping, grassland should be cut short at the end of winter to deter ground nesting species breeding on site in the Spring.

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Nest boxes should be sited throughout the proposed development at appropriate locations. Local residents should be encouraged to provide feeding and watering stations (some housing developers have run popular promotions giving new house owners nest boxes, bird feeders and bird baths).

Providing information on wildlife friendly gardening is another inexpensive way of improving a site for biodiversity. Information is available from such bodies as the RSPB, local Wildlife Trusts and the Council.

### **8.17 Dormouse**

The habitat recorded in the survey area was not considered ideal but these animals often inhabit sub-optimal habitat such as conifer woodland and reedbeds. Although the likelihood of dormice being on site is very low, it is more difficult to prove absence of a species than presence as Dormice are elusive and live at low population densities.

No specific mitigation is therefore proposed for this species; however, should dormice subsequently be discovered on site during development, all work in the affected area must stop and CCW contacted for further advice.

### **8.18 Invertebrates**

No mitigation for any specific invertebrate species is proposed; however, in order to enhance invertebrate communities it would be deemed best practice to retain as much of the natural habitat as possible. Areas close to the railway could be retained fairly easily, providing a small but suitable habitat for invertebrates as well as a visual screen for housing overlooking the railway. Hedgerows should be retained where possible in order to lessen the impact of development on invertebrates, since loss of invertebrates could have an effect on species further along the food chain.

The retention of habitats must be carefully planned. One large area of good habitat has more ecological value than many fragmented smaller areas, which would isolate populations. If it is only possible to leave smaller areas of good habitat these can be improved by linking the areas by hedgerows or the railway corridor vegetation.

### **8.19 Reptiles**

The method of mitigation will depend upon development plans and sequences. The hedgerows and associated banks and dry stone walls are the most valuable habitat remaining at the site. If these features could be retained, the extent of any translocation programme could be minimised.

Reptile fencing would be required to separate the boundaries of each field from the grassland in the centre. A trapping exercise would be undertaken between April and September to ensure any reptiles within the grassland area were placed outside the fence. Temporary Herpetosure Fencing, which can be driven over, can be used to allow vehicle movements in and out of the site.

The fencing would need to be maintained throughout the development process as reptiles may take shelter in stockpiled materials or weedy areas, which will grow up quickly around a construction site. Once development is complete the fencing can be removed to allow reptiles to recolonise the area. Features such as rock piles, log piles and south-facing banks could be incorporated into the housing development landscaping to encourage this process.

Although reptiles were not present along the hedge banks and rough grassland during this survey, these areas do provide suitable reptile habitat. As reptiles are known to occur within

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the area, a reptile clearance operation should be undertaken as a precaution, should the proposed site layout dictate that these habitats are removed.

The potential impacts of the development are summarised in Table 8.5

**Table 8.5 Impact summary table**

<b>Interest</b>	<b>Potential impact</b>	<b>Scale/Duration</b>	<b>Mitigation measures</b>	<b>Residual</b>
Hedgerows "Important"	Loss of habitat and or features	Moderate/ permanent	Retain as much of the hedgerows as possible. Compensatory planting where unavoidable loss including translocation.	Moderate
Grassland Semi improved	Loss of habitat Main area already cut and ploughed and therefore lost.	Moderate/ permanent	Areas left as public grassland to be managed for invertebrates.	Minor
Improved grassland	Loss of habitat	Minor/ permanent	Public grassland within housing development to be managed for invertebrates	Minor
Badgers	Loss of minor foraging area	Minor	No specific mitigation proposals.	Minor
Bats	Loss of foraging and potential commuting routes - hedgerows	Minor/ permanent	No constraints identified. No specific mitigation proposals.	Minor
Breeding birds	Loss of breeding and foraging habitat	Moderate/ permanent	Improved hedgerow and scrub retention. Vegetation clearance prior to development to be timed so as not to disturb nesting birds. Winter grass cutting to deter ground nesting birds. Nest boxes to be sited throughout estate.	Moderate
Dormouse	Habitat loss	Negligible/ permanent	No specific mitigation however if discovered on site during development all works to cease and CCW to be informed.	Minor
Invertebrates	Habitat loss	Moderate/ permanent	Best practice to retain as much as possible of the semi natural habitats. No specific mitigation proposals.	Moderate
Reptiles	Low population levels. Anticipated loss of basking habitat at periphery of site	Moderate/ permanent	Trapping exercises to be carried out between April – September (incl) where all likely habitats of grassland, hedge banks would be affected by the development.	Moderate

## **9.0 LANDSCAPE AND VISUAL AMENITY**

### **9.1 Introduction**

This section provides an assessment of the effects on the landscape of the site and its context of a residential development on land currently used for agricultural pasture, i.e. effects on features assessed as important to the landscape quality, or effects on the landscape character of the site and its setting. It also deals with the effects on views of the site and its setting, which is visual amenity.

The objectives of the assessment are to:

- describe and evaluate the landscape and visual amenity of the site and surrounding area which might be affected by the proposed development;
- identify and assess the significance of any effects on the landscape or visual amenity, associated with the construction and occupation of the residential development;
- set out mitigation measures which could be implemented in order to avoid, reduce or remedy adverse effects;
- describe any enhancements of the landscape or visual amenity incorporated into the development proposals.

Site visits were undertaken to the locations of the proposed development and its environs, particularly taking into account locations from which existing features on the site are visible. The methods for the landscape and visual assessments are described below.

### **9.2 Assessment methodology**

The method used for assessing landscape and visual effects is based on the recommendations in the *Landscape Assessment Guidance*<sup>1</sup> and *Guidelines for Landscape and Visual Impact Assessment*<sup>2</sup>.

The assessment comprised a combination of desk studies and field surveys, with subsequent analysis, and involved:

- a site survey and inspection of publicly accessible viewpoints of the site, including a photographic survey. The field surveys for this proposed development were carried out in July and September 2004 and February 2006.
- a review of landscape designations and planning policies for the landscape
- an evaluation of the landscape context and setting, and their ability to accommodate the changes proposed in the development
- a viewpoint analysis of the likely effect on visual amenity of the public in the surrounding area, including local residents
- the identification of potential landscape and visual effects of the proposed development, their magnitude and significance
- consideration of mitigation and enhancement measures to avoid, reduce or remedy significant effects on the landscape or on views

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<sup>1</sup> Countryside Commission, *Landscape Assessment Guidance*, 1993

<sup>2</sup> The Landscape and Institute of Environmental Management & Assessment, *Guidelines for Landscape and Visual Impact Assessment (2<sup>nd</sup> Edition)*, E&FN Spon 2002

### ***Photography***

Photographs have a special role in describing landscape character and key views, but in order to be representative and to create an image that is similar to that seen with the human eye, accepted practice is to use a lens with a focal length of 50mm, and print size 150mm x 100mm (for a 35mm SLR camera). A series of overlapping photographs were spliced together to provide a panorama, approximating to the normal field of view in a landscape context. The contrast and brightness of photographs were, where necessary, slightly manipulated in order to create a consistent panorama without visible joins. The viewpoints and key elements in the photographs were located from their Ordnance Survey grid reference and height Above Ordnance Datum (AOD).

### ***Assessment and mitigation***

The effects of the development, whether beneficial or adverse, would vary in nature and degree through the construction and operational phases. Mitigation measures are proposed in the design of the development or by management of the construction and operational processes. The aims of mitigation measures are, first to avoid potential effects, and secondly to reduce the degree of adverse effects which are unavoidable. The effects assessed are those that remain after mitigation measures are put in place: "residual effects"

The effects of the development, whether beneficial or adverse, would vary in nature and degree through the construction and operational phases. Mitigation measures are proposed in the design of the development or by management of the construction and operational processes. The aims of mitigation measures are, first to avoid potential effects, and secondly to reduce the degree of adverse effects which are unavoidable.

The degree of the likely landscape and visual effects of the proposed development was determined by relating the ability of the landscape or view to accommodate the changes arising from the development proposals, and the magnitude of the changes to which they would be subjected. The degree of effect, whether adverse or beneficial, is graded from substantial to negligible, as follows:

#### Effects on the landscape

<i>Significant:</i>	Sensitive landscape completely degraded, with little or no scope for mitigation, <b>or</b> Improvement sufficient in scale to upgrade overall landscape character.
<i>Substantial:</i>	Considerable adverse change to the features, elements, character, or quality of sensitive landscape, with limited scope for mitigation (or lesser change in very sensitive landscape); <b>or</b> Improvement to the landscape over a wide area sufficient to alter perceptions.
<i>Moderate:</i>	Discernible change to landscape character, features, or elements of medium-high sensitivity, but with scope for mitigation; <b>or</b> Perceptible improvements to landscape character.
<i>Slight:</i>	Localised or limited adverse change to the existing landscape character with considerable scope for mitigation; <b>or</b> Localised improvement to the existing landscape quality.
<i>Negligible or None:</i>	No perceived change to the existing landscape character and quality, or the change is difficult to discern.

Effects on visual amenity

<i>Significant:</i>	Major visual intrusion experienced from settlements or numbers of properties and/or from sensitive public viewpoints, where the development would cause a large scale deterioration in the existing view, with little or no scope for mitigation; <b>or</b> An improvement in the view, sufficient to upgrade overall visual amenity.
<i>Substantial:</i>	Visual intrusion experienced from settlements or numbers of properties and/or from sensitive public viewpoints where the development would cause deterioration in the existing view with limited scope for mitigation (or a lesser intrusion in highly sensitive views); <b>or</b> An improvement in the view, sufficient to provide some benefits to visual amenity.
<i>Moderate:</i>	Visual intrusion on settlements or numbers of properties and/or from public viewpoints where the development would cause a limited deterioration in the existing view, but with scope for mitigation; <b>or</b> A reduction in visual intrusion, or improvement in the view.
<i>Slight:</i>	Minor visual intrusion attributable to the development or a perceptible deterioration in the existing view, with scope for mitigation; <b>or</b> Localised reduction in visual intrusion, or noticeable improvement in the view.
<i>Negligible:</i>	The change in the view is imperceptible or difficult to discern.

**9.3 Description of the existing landscape**

The features described below are located on Figure 9.1 Landscape Context and Figure 9.2 Site Survey. Photographs of the site and the surrounding area, which illustrate many of the features described below, are included on Figures 9.3 – 9.5 and 9.7 – 9.9. The photograph viewpoints are located on Figures 9.2 and 9.6.

The site is located in the Vale of Glamorgan between Cardiff and Bridgend on the coast bordering the Bristol Channel. In the central part of the Vale, the site is on the eastern edge of the settlement of Rhoose, just south of Cardiff International Airport. Rhoose and its more recent extension at Rhoose Point give the site an urban context which is within a setting of the rolling, pastoral landscape of the Vale of Glamorgan.

***Settlement and development pattern***

The settlement pattern of much of the Vale of Glamorgan is dispersed villages/hamlets with scattered farmsteads and small groups of dwellings. The undulating landscape of the Vale appears to have influenced the settlement pattern in that villages tend to be set in valleys away from the higher land of the plateau areas. Dinas Powys, Wenvoe, Cowbridge, Penmark and Llancaiach are all typical of this pattern. Exceptions to the pattern tend to be relatively recent residential and industrial development, located on elevated, prominent sites, for example, the Highlight Farm development north of the A4226 in Barry and the British Airways aircraft engine maintenance facility at Cardiff International Airport.

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The larger settlements of the Vale, which are Penarth, Barry and Llantwit Major, are all located along the coast. The smaller settlements of Sully and Rhose are also located in the coastal zone in areas of intense development pressure between the larger settlements. Large scale development at Cardiff International Airport and recent residential developments have been located on higher ground in this area, which along with frequent caravan parks gives the coastal zone a distinctly less rural character than inland parts of the Vale.

Porthkerry Road passes the north-east corner of the site before entering Rhose. This is the main road link between Rhose and the A4226 (Port Road) which heads in an easterly direction towards Barry. The western edge of Barry is located approximately 2km to the east of the site beyond Porthkerry Country Park. After passing through Rhose, Porthkerry Road follows the coast towards the village of East Aberthaw, 3km to the west of the site. There are several other small villages within 3km of site, north of Rhose. These are Fonmon, Llancadle and Penmark, located within narrow valleys.

The nearest settlement to the site is the village of Rhose which defines the western and northern edges of the site. The residential development at Rhose Point is located to the south of Rhose beyond the Vale of Glamorgan railway line, which defines the southern boundary of the site. Pentir y De, the link road to the Rhose Point, heads south from the roundabout on Porthkerry Road, passing over the railway line before reaching the Rhose Point development. This link road defines the eastern site boundary.

There are individual properties within 1km of the site, including Church Farm and Porthkerry House to the east and lower Porthkerry to the north-east. Other properties are more distant beyond Cardiff International Airport to the north or beyond Rhose to the west. There is a caravan park located within 0.5km to the east of the site near the Bulwarks Fort, a Scheduled Ancient Monument.

### ***Public rights of way***

There is a public footpath passing through the site along a track from Porthkerry Road in Rhose to a point where it crosses the railway line adjacent to the Rhose Point development. To the south of the Rhose Point development there are several footpath links between the pedestrian circulation routes within the Rhose Point development and the Coastal Path along the top of the sea cliffs at Rhose Point. The Coastal Path is a well used route that links through to Porthkerry Country Park, just over 1km along the coast to the north east.

Other public footpaths in the area are those over 2km away from the site to the north beyond Cardiff International Airport and along the western and northern edge of Barry.

Pentir y De has a roadside cycle route on its western side, adjacent to the site. This route links Porthkerry Road at the eastern edge of Rhose with the residential development at Rhose Point. It continues through this area towards Rhose railway station. National cycle route 68, a Sustrans route, is located within Porthkerry Country Park. There is a proposed extension to this route which will pass the northern edge of the site where it would follow Porthkerry Road. The proposed route is National Cycle Route 88.

### ***Landscape features and character***

The landscape character study has been divided into three main sections. First, a broad overview of the landscape character of the wider area based largely on a desk-study of published landscape character studies. Second, a more detailed look at the landscape character to be found within 4 kilometres of the site; this is based on a landscape appraisal undertaken in September 2004. Third, a study of the site itself and its immediate surroundings; this is based on a site appraisal undertaken in July 2004 and February 2006.

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### **Desk-study**

*Landscapes Working for the Vale of Glamorgan* was produced for the Vale of Glamorgan Council in January 1999<sup>3</sup>. The report includes a landscape assessment based on the LANDMAP methodology (Landscape Assessment and Decision Making Process) devised by the Countryside Council for Wales. The assessment work informed the preparation of a series of strategy and policy recommendations, design guidelines and action programmes.

The LANDMAP study of the Vale of Glamorgan identifies 33 Landscape Character Areas. The salient features that define the landscape of each area are recorded in individual descriptions that explain what makes one area different from another, the issues affecting the landscape and aims for enhancement. The site is within Landscape Character Area 18 – Rhoose Environs. This is described as:

*"Plateau farmland between Weycock and Kenson Valleys to the north and coastal strip to south visually dominated by Cardiff Wales Airport. Barry to the east and Aberthaw Cement Works to the west. An exposed landscape of productive arable with trimmed/laid hedges and limited woodland associated with small valleys and settlement".*

The landscape issues identified for this character area are the visual impact of development, most notably the British Airways hangar, and further development. The strategy makes a series of recommendations to strengthen the landscape character of the area through strengthening the landscape structure of woods and hedgerows. One of the aims of the strategy is to retain a rural buffer between settlements.

South of the site and the railway line, and outside the Rhoose Point development, the coastal zone is within Landscape Character Area 20 – Coastal Strip – East of Aberthaw Power Station. This is described as an area which:

*"Consists of sandy beaches, wavecut platforms, low cliffs, wind sculpted vegetation, mix of older settlement but dominated by 20th Century development including housing, leisure and commercial development at Barry."*

In the vicinity of the site, this area is separated from the site by the railway line which is infrequently at grade, tending to be either on embankment or in cutting. There is a linear band of vegetation associated with the railway line and larger areas of deciduous woodland on the eastern edge of the Rhoose Point development and associated with the Bulwarks Fort.

Particular landscape issues highlighted in the study are the superb views from the area and the degradation of the coastal frontage caused by inappropriate industrial and housing development and unsightly leisure development. The strategy recommends improvements to the coastal path to create a continuous path and also to improve access to the path from inland areas. It goes on to state that there is a need to encourage improvements to existing development and attain higher standards for new development.

Cardiff International Airport to the north of Rhoose is within Landscape Character Area 19: Cardiff Wales Airport and Environs. The area includes the airport and farm land to the north located on a part of the coastal plateau which is highly visible from the north. The higher ground upon which the airport is located is prominent in the wider landscape, with the British Airways hangar being particularly visible.

### **Landscape appraisal**

The landscape appraisal identified that the area is broadly characterised by topography. There are two broad landscape character types identified in the wider landscape which are

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<sup>3</sup> Landscapes Working for the Vale of Glamorgan, Vale of Glamorgan Council, January 1999

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separated by a low-level ridge between the coast and the River Waycock valley. This ridge passes to the north of Barry and then through to the west towards Cardiff International Airport. Despite there being higher ridges to the north, this ridge is particularly important as it marks a change in character from the rural Vale on its northern side and the Coastal Vale to the south.

The River Waycock Valley has a distinctive, rural character with a strong field pattern on the side slopes rising away from the valley floor. Deciduous woodland is frequent on the steeper valley side slopes of the River Waycock and its tributaries. The pattern of vegetation and topography create an intimate, self-contained landscape with few external influences. Notable exceptions being the Highlight Farm residential development on the northern outskirts of Barry and the large industrial buildings associated with Cardiff International Airport. These features "break" the ridgeline, forming intrusive elements in the rural landscape of the River Waycock.

The coastal zone, within which the site is located, has variety in character due to the mix of land uses. However, the relative importance of seascape features and the gentle slope of the land towards the coast broadly define the character of the coastal zone. At a more detailed level there are three character sub-areas within the coastal zone. The approximate extents of these areas are shown on Figure 9.10 and they are 1: Rhoose and environs, 2: Porthkerry Country Park and 3: Barry.

### Rhoose and environs:

The character of this area is dominated by existing development which includes the settlement of Rhoose and Rhoose Point, Cardiff International Airport and two holiday and leisure parks along the coast to the east and west of Rhoose Point.

The Airport has an important impact on the character of the area, cutting across the grain of the landscape, resulting in the apparent realignment of roads and disruption of the field pattern. In addition to the runways, terminal buildings and the perimeter fence, the activity and noise associated with planes landing and taking off influence the character of the area.

The mainline railway is a relatively prominent feature, which is due in part to the vegetation which has established on the cutting and embankment slopes. It creates a barrier to movement through the area as there are only a limited number of opportunities to cross the line.

Beyond the developed area, and the wavecut platform and cliffs along the coast, land use is agricultural pasture and arable. Fields are medium in scale and generally well defined by maintained hedgerows.

### Porthkerry Country Park:

East of Rhoose, Porthkerry Country Park has a distinctly different character to other areas along the coast. Steep wooded valley slopes along Cwm Cidi and around Porthkerry Country Park create enclosure and a self contained landscape unit with few external influences. The Vale of Glamorgan Railway passes through the area generally in cutting with the exception of the section along the viaduct where it passes over the valley. The railway line and associated vegetation creates a strong linear feature which cuts across the grain of the landscape.

North of Porthkerry Country Park and south of Port Road the land is intensively farmed pasture and arable land. Fields are medium in scale and generally well defined by maintained hedgerows. The land is dissected by the narrow valleys of Nant Talwg and Whiteland Brook which have areas of woodland and plantation along their side slopes.

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### Barry:

The urban area of Barry is to the east of Porthkerry Country Park and is generally well contained by higher ground on its western and northern side. The agricultural land along the western side of Barry forms a well defined edge to the settlement preventing the spread of urban influences in a westerly direction.

### ***The application site***

The current land use within the site is agricultural pasture. The field pattern is small to medium scale, although many fields are grazed together due to the intermittent nature of the field boundary hedgerows and fences. Land within the site slopes gently towards the south from the 60m AOD contour to the 40m AOD contour.

The site is divided into two parts by the access track which enters the site off Porthkerry Road (*Photographs 14, 15 and 16 on Figure 9.4*). This track and the hedgerows along each side, which include significant trees, are a dominant feature within the site (*Photographs 8, 9 and 10 on Figure 9.3*). The continuous vegetation along the track clearly splits the site into two parts, obscuring views from one side to the other.

East of the access track the site has a fairly open character due to the lack of vegetation along the north and east site boundary and the sparse field boundary hedgerows with frequent gaps (*Photographs 12, 18 and 21 on Figures 9.4 and 9.5*). Vegetation along the railway line is also intermittent in this part of the site, which offers views across the line to the houses within the Rhoose Point development.

Land to the west of the access track is more enclosed due to dense, almost continuous tall hedgerows defining field boundaries (*Photograph 11 on Figure 9.4*). Many of the trees included within the hedgerows are mature native species, predominantly Elm, Ash and Oak. South of the site, the vegetation along the railway generally forms a continuous screen with the exception of a couple of sections where there are views of the Rhoose Point development.

### Site boundary description

The site has three boundary types relating to existing land uses beyond the site boundary. These are the north and west boundary with the residential areas of Rhoose, the east boundary along Pentir y De and the southern boundary along the railway line.

Residential properties within the settlement of Rhoose are located along the north and west site boundary. The properties to the north are slightly elevated above the site with either the back or side of the houses facing the site (*Photographs 12 and 13 on Figure 9.4*). There is generally little vegetation along the garden boundaries, with the exception of a few significant trees, and a variety of fence types including close board and post and wire. Properties along this boundary have either open, uninterrupted views of the site or to a lesser extent views filtered by vegetation.

The western boundary has more vegetation with an almost continuous garden boundary hedgerow with large trees. Views of the site from these properties are generally filtered or obscured by vegetation. Adjacent to the south-western corner of the site there is a resident parking area with garages, accessed off Torbay Terrace (*Photographs 1 and 2 on Figure 9.3*). The site boundary is defined by a gate and chain link fence in this location so there are views across the site (*Photograph 4 on Figure 9.3*).

The eastern site boundary is defined by Pentir y De. The road is at a similar level to the site near the roundabout with Porthkerry Road before rising up to cross the railway line (*Photograph 18 on Figure 9.4*). At the south-eastern corner of the site the road is up to 6.5 metres higher than the level of the site at the base of the embankment. The embankment slope has not been planted so there are open, panoramic views across the site. A cycleway

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and footway follow the western edge of the highway from Rhoose Point to Porthkerry Road (*Photograph 17 on Figure 9.4*). Beyond Pentir y De to the east the land is agricultural pasture which rises gently to the east. The field pattern is medium scale defined by intermittent hedgerows and post and wire fencing. Scrub along the railway cutting slopes and within the caravan park to the south form a substantial block of vegetation along the coast when viewed from Pentir y De (*Photograph 20 on Figure 9.5*).

The southern boundary of the site is along the railway line, which is in a slight cutting. As the level of the site falls to the west, the railway line rises onto an embankment which is around 2-3 metres high. The slopes of this embankment and areas within the railway boundary fence are well vegetated with deciduous scrub and trees (*Photograph 21 on Figure 9.5*). The Rhoose Point residential development is on the southern side of the railway line at a slightly lower level than the site.

### 9.4 Ability of the landscape to accommodate change –‘sensitivity’

The ability of a landscape to accommodate change may be defined as its ability to accept the proposed development "without unacceptable detrimental effects on its character"<sup>4</sup>. This is referred to as the *sensitivity* of the landscape.

- The character of the landscape is partly derived from the field boundary hedgerows and trees within the site. Therefore, the degree of impact on the landscape resource of the area would relate in part to the impacts on this vegetation, which is regarded as a *sensitive* receptor.
- The landscape amenity for people using the public footpaths, roads and the Sustrans route within the immediate vicinity of the site and to a greater extent nearby residents is considered *sensitive*. People would be aware of site clearance, soil stripping and the construction of the development. These are considered to be *sensitive* receptors to change because of the prominence of the site within the landscape.
- Scheduled Ancient Monuments are considered *sensitive* to changes in their context and setting. There is a Scheduled Ancient Monument at The Bulwarks Fort just over 0.5km east of the site which may be affected by the proposed development as a result of changes in its landscape setting.

### 9.5 Visual amenity

A representative sample of views of the site are described below and illustrated on Figures 9.6 – 9.9. A sample of these views, selected in consultation with the local planning authority, will be used for the visual impact assessment of the proposed development. The visual appraisal for the site (*Figure 9.6*) shows the locations of appraisal photographs, shown on Figure 9.7, and other photographs, shown on Figure 9.8 and 9.9. The Visual Appraisal shows features which define the extent of areas where it may be possible to obtain views of the site, referred to as the visual envelope. The extent of the visual envelope is largely defined by topography with ridgelines and higher ground both offering opportunities for views and obscuring potential views from low-lying areas beyond. Figure 9.6 identifies areas elevated over 65m AOD and intervening valleys.

Views of the site from the south, west and north are limited by boundary vegetation and the adjacent built development at Rhoose. Views from the south are from less elevated locations than the site either from the Rhoose Point development or the coastal footpath beyond to the south. Views from the coastal footpath are infrequent with the site only visible through gaps in the vegetation along the footpath and where there are lower areas of land between the coastal path and the site, as illustrated in Appraisal Photograph 2 (*Figure 9.7*). Views towards the site from within the Rhoose Point development are limited by the buildings in the development and

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<sup>4</sup> The Landscape and Institute of Environmental Management & Assessment, Guidelines for Landscape and Visual Impact Assessment (2nd Edition), E&FN Spon 2002

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significant level changes which remain from quarrying activity. Appraisal Photograph 3 (Figure 9.7) illustrates a view towards the site from south of the railway line where intervening vegetation and the railway embankment obscure the site. The higher parts of residential properties to the north of the site in Rhoose are visible but the ground surface within the site is obscured.

Views from the west are limited by existing residential properties along the site boundary. Potential views of the site are obscured by existing vegetation along the northern side of the railway line and in the southwest corner of the site. There are views across the site from the railway line, although these are filtered views due to the vegetation along the northern side of the railway line.

There are no areas of higher ground which would offer opportunities for elevated views of the site. Photograph 27 (Figure 9.9) is taken from an elevation of around 70 to 75 metres AOD from the A4226 Port Road near Welford, 2.0 km to the northeast of the site. Views of the site from this location are obscured by the runway at Cardiff International Airport, which at a similar elevation to the viewpoint, is more elevated than the site.

Views from the east are partly screened by the embankment along Pentir y De. A view of the site is available from Porthkerry Road on its approach to the Pentir y De roundabout, Appraisal Photograph 2 (Figure 9.7). The lower level of the land to the south, near the Bulwarks Fort SAM, means that views of the site are obscured by intervening features, Photograph 24 (Figure 9.8).

### 9.6 Ability of views to accommodate change – ‘sensitivity’

The *sensitivity* of views is affected by factors such as the distance to the viewer, the number of viewers affected, and the importance of the proposed development in the overall view. The context of the viewpoint may also contribute to its ability to accommodate change; for example a view from residential properties or from a valued landscape might be regarded as less able to accommodate change, than a view from an industrial context.

The views identified as *sensitive* to the potential impacts of the proposals are:

- from the Coastal Path south of the Rhoose Point residential development, considered to be *sensitive* due to the importance of the site in views from this well used recreational route (refer to Figure 9.7 – Appraisal Photograph 1).
- from Porthkerry Road to the east of Rhoose, considered to be *sensitive* due to the close proximity of the site and the number of pedestrians and vehicle travellers affected (refer to Figure 9.7 – Appraisal Photograph 2).
- from the Trem Echni, an access road within the Rhoose Point residential development, considered to be *sensitive* due to the close proximity of the site and the number of viewers affected (refer to Figure 9.7 – Appraisal Photograph 3).

### 9.7 Landscape policies and designations

The proposed development site does not fall within nationally designated sites such as National Parks or Areas of Outstanding Natural Beauty. There are no regional or local landscape designations within the site boundary. The following is a summary of the landscape and related planning designations within the vicinity of the site.

#### **Conservation area**

The nearest Conservation Area to the site is the central part of Rhoose, the undeveloped part of which extends into the north-western corner of the site (Figure 9.1). This area has been designated to maintain the historic centre of the village. In addition to the conservation area, its setting is also important. An assessment of the landscape and visual effects on this area

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as a result of the development will assess the impact of the proposed development on the character of the conservation area and on views into and out of the area.

### **East Vale Coast**

The coastal area to the west of Aberthaw Power Station has been designated as a heritage coast in the adopted *Vale of Glamorgan Unitary Development Plan*. To the east of the heritage coast area a section of coast has been identified as within the East Vale Coast (Figure 9.1). However, the land at the site and at Rhoose Point has been excluded from this designation.

### **Green Wedge**

Farm land to the east of Pentir y De is identified as within a green wedge (Figure 9.1). Policy ENV 3 within the UDP refers specifically to green wedges, which are designated to prevent urban coalescence between and within settlements.

### **Special Landscape Area**

Land to the north of the A4226 and B4265, north of Cardiff International Airport, is identified as within a Special Landscape Area in the UDP (Figure 9.1). The planning policies relating to the Special Landscape Areas (SLA) aim to protect the landscape character, landscape features or visual amenities of the SLA.

### **Historic landscapes and gardens**

The landscape park around Fonmon Castle is included in the *Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales*. It is approximately 2.2km to the north-west and does not have any views of the site due to the intervening higher ground at Cardiff International Airport.

North of Fonmon Castle the area of Llancarfan, Vale of Glamorgan, is included in the *Register of Landscapes of Outstanding Historic Interest in Wales*. It is identified as “one of the best surviving and most complete, typical historic parts of the Vale of Glamorgan”. The area included in the register is over 2.5km away from the site to the north-west. The higher ground at Cardiff International Airport, north of the site, obscures views from such distant areas.

### **Scheduled Ancient Monuments and listed buildings**

There are several Scheduled Ancient Monuments (SAM) and listed buildings within 4km of the site (Figure 9.1). The most notable of these is the Bulwarks Fort SAM, 800 metres to the east of the site. The site is not visible from the Bulwarks Fort or the other SAMs and listed buildings in the vicinity of the site.

## **9.8 Assessment of effects**

### ***The proposals and potential sources of landscape and visual impact***

The landscape and visual impact will result from the following:

- Clearance of some field boundary hedgerows and soil stripping and storage
- Minor earthworks associated with access road and public open space.
- Site establishment and building activities during the construction period including the construction of the access road.
- Operational features of the completed development such as vehicle movements and street lighting.

### ***Landscape effects***

The main *sensitive* receptors have been identified as:

- The character of the landscape is partly derived from the field boundary hedgerows and trees within the site. Therefore, the degree of impact on the landscape resource of the area would relate in part to the impacts on this vegetation, which is regarded as a *sensitive* receptor.
- The landscape amenity for people using the public footpaths, roads and the Sustrans route within the immediate vicinity of the site and to a greater extent nearby residents is considered *sensitive*. People would be aware of site clearance, soil stripping and the construction of the development. These are considered to be *sensitive* receptors to change because of the prominence of site within the landscape.
- Scheduled Ancient Monuments are considered *sensitive* to changes in their context and setting. There is a Scheduled Ancient Monument at The Bulwarks Fort just over 0.5km east of the site which may be affected by the proposed development as a result of changes in its landscape setting.

The potential sources of landscape impact as a result of the proposed development are described above. The trees along the public footpath through the site and the field boundary hedgerows are the most important landscape elements within the site and are also recognisable features in the wider landscape. The proposed development will retain the majority of the vegetation along the public footpath and will only remove hedgerows which are discontinuous and poor quality. Retained vegetation will be protected by protective fencing during construction and woodland and hedge management will increase the longevity of the vegetation and improve its amenity value. The short and long-term landscape impact upon this receptor will be *slight*.

Local residents, vehicle travellers and users of public rights of way/cycle routes within the immediate vicinity of the site will be aware of the development occurring. Site clearance, remediation and construction activities will cause indirect impact upon the landscape setting and amenity of the adjacent residential area as residents become aware of the development occurring. The adjacent housing areas to the south of the railway line were constructed during the last few years so construction activity will not be a new activity to the area.

Site clearance will occur over a period of several months and will be more apparent to vehicle travellers along Pentir y De and the public footpath which runs through the site. The construction of the proposed development will occur over several years, although it is unlikely that the whole site will be developed at the same time. The activity associated with construction will cause indirect adverse impact to residents adjacent to the site in the short-term. Long-term impacts are considered negligible improvement on landscape amenity, as a result of the proposed public open space and a negligible improvement in landscape setting as the site becomes an integral part of the settlement of Rhoose.

### ***Visual effects***

Section 1.6 above identified three viewpoints as representative of the most *sensitive* views available. These views are described below and the effects of the development on them assessed.

#### Appraisal viewpoint 1:

The view is from the Coastal Path south of the Rhoose Point residential development, approximately 600 metres from the site (*refer to Figure 9.7 – Appraisal Photograph 1*).

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### *Existing view*

The Rhoose Point development occupies the foreground of this view. The development is relatively high density, two to three storey detached and semi-detached houses set within large areas of open space. The open spaces within the development include the remains of quarry faces, visible in the centre of the view, and areas of wetlands with ponds, visible in the foreground.

The railway embankment along the southern edge of the site is visible in the middle distance, separating the Rhoose Point development from the site. The relative elevation of this viewpoint, and undeveloped areas in the central part of the Rhoose Point development, offer a view of a part of the site. Vegetation along the railway embankment is intermittent, which allows views of areas of the ground surface within the site. Along the northern boundary of the site, housing within Rhoose with associated tree planting, forms the horizon of the view.

Other land uses adjacent to the site are not evident from this viewpoint. The farmland to the east of the site is not visible due to the relative elevation of the railway line. Cardiff International Airport, although more elevated than the site, is obscured by Rhoose and the relative low level of the viewpoint.

### *View during and after construction*

Part of the ground surface within the site is visible in this view so vegetation clearance and soil stripping will be visible in the short term over a period of several months. Existing vegetation along the railway line will remain and continue to filter/obscure views into the site. This vegetation along with the railway embankment itself will reduce the potential visual impact of site clearance and construction operations as it reduces the scale of the site in the view.

The visual impact during the construction of the buildings would be over a period of a couple of years. Buildings will be comparable in scale to the existing residential properties along the northern site boundary, on the horizon in the view.

### *Assessment*

The activities associated with the site clearance and the process of change during construction of the new development will be noticeable in this view over a period of a couple of years. However the site is seen in the context of the Rhoose and Rhoose Point urban areas which will provide a strong visual edge to the development. The adverse impact upon this view will be *negligible* during site clearance and will be *slight* in the long-term as the development of the site will increase the dominance of development in the view.

### Appraisal viewpoint 2:

The view is from Porthkerry Road where it approaches Rhoose, approximately 100m from the site (*refer to Figure 9.7 – Appraisal Photograph 2*).

### *Existing view*

The hedgerow boundary of Porthkerry Road occupies the foreground of the view with agricultural pasture defined by well maintained hedgerows beyond. Gaps in sections of the hedgerows which are overgrown allow filtered views of the site in the left of the view. The embankment of Pentir y De is visible in the middle distance, identified by the line of lighting columns extending across the view. The Rhoose Point development is visible in the left of the view along with the railway embankment vegetation. Porthkerry Road, running westwards into Rhoose and parts of the settlement of Rhoose can be seen in the right of the view. The vegetation and more elevated land surrounding the site, obscure the majority of the site in this view.

*View during and after construction*

Part of the ground surface within the site is visible in this view so vegetation clearance and soil stripping within the site will be visible in the short term over a period of several months. Existing field boundary hedgerows outside the site filter views into the site. This vegetation along with the embankment along Pentir y De will reduce the potential visual impact of site clearance and construction operations as a part of the site is obscured.

The visual impact during the construction of the buildings would be over a period of a couple of years. Buildings will be comparable in scale to the existing residential properties along the northern site boundary, on the horizon in the right of the view.

*Assessment*

The activities associated with the site clearance and the process of change during construction of the new development will be noticeable in this view over a period of a couple of years. The site appears outside the urban area so the proposed development would result in an increase in the extent of development in this view. In the middle part of the view the proposed development will form the horizon or be viewed against the sea; in either case there would be a visual contrast between the development and the background. The adverse impact upon this view will be *slight* during site clearance and will remain *slight* in the long-term as the development will increase the dominance of the urban area in the view.

Appraisal viewpoint 3:

The view is from Trem Echni Road, within the Rhoose Point residential development, approximately 120 metres from the site (*refer to Figure 9.7 – Appraisal Photograph 3*).

*Existing view*

The foreground of the view is occupied by a vacant development site where ruderal grassland has established. The left and right hand sides of the view are defined by residential properties within the Rhoose Point development. The railway embankment and the intermittent vegetation along its embankment obscure the site from view. The ground surface of the site is not visible but existing properties in Rhoose, along the northern site boundary, are visible in this view.

*View during and after construction*

Vegetation clearance within the site will be visible during the short term over a period of several months. Soil stripping will not be particularly apparent as the ground surface of the site is not visible. Existing vegetation along the railway line will remain and continue to filter views into the site. This vegetation along with the railway embankment itself will reduce the potential visual impact of site clearance and construction operations as the majority of the site is obscured from view.

The visual impact during the construction of the buildings would be over a period of a couple of years. Buildings will be comparable in scale to the existing residential properties along the northern site boundary, on the horizon in the view.

*Assessment*

The activities associated with the construction of the new development will be noticeable in this view over a period of a couple of years. However the site is seen in the context of the Rhoose and Rhoose Point urban areas which will provide a strong visual edge to the development. The impact upon this view will be *negligible* during site clearance and will be

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*slight adverse impact* in the long-term as the development of the site will increase the dominance of development in the view.

### **Mitigation measures**

Mitigation measures are concerned with retaining elements of potential benefit to the proposed development, such as the mature vegetation along the public footpath through the site. The main areas of vegetation which screen the site from view will be retained and protected from damage by fencing during construction. Soil storage areas will be located near existing vegetation to reduce the visual impact of the mounds but will be kept a suitable distance away to prevent root damage.

As another aspect of the mitigation measures, the landscape strategy proposed the creation of attractive spaces and routes within the site and improving the appearance of the site when viewed from adjacent areas.

Proposed planting will be undertaken as soon as the land becomes available to maximise plant growth before the development is complete. Planting and seeding of the public open space will be undertaken as soon as is practicable so that local residents will be able to use the area prior to the construction of the whole development being completed.

### **9.9 Conclusions**

The site is not located within an area with a national, regional or local landscape designation. There is a conservation area in Rhoose but it is considered that the proposed development would have no adverse impact on either the conservation area or its setting.

The most sensitive landscape receptors are the mature trees and hedgerows of the site, which are defining features of the landscape character. Existing vegetation on site will be retained and supplemented by planting in key locations. Residential properties adjacent to the site at Rhoose are considered sensitive to the proposed development due to their proximity and the elevated nature of their views. Properties at the Rhoose Point site are also considered sensitive to the proposed development due to their proximity to the site.

The landform, vegetation pattern, and existing settlement, restrict the visibility of the site from the wider area. The higher ground at Cardiff International Airport obscures views from areas to the north which have a similar or slightly higher elevation than the site. Where visible, the site is seen in the context of the existing urban area and the site is not a dominant or important feature in the view.

Nearer views are available from Rhoose, Rhoose Point and Porthkerry Road. Because of their low elevation, and the intervening vegetation associated with the railway line and access track within the site, the site is generally obscured in these views; only the tops of the trees within the site and roofs of adjacent properties are generally visible.

## **10.0 NOISE AND VIBRATION**

This assessment takes into account noise from the existing and proposed levels of traffic on the railway line along with noise from the nearby Cardiff Wales Airport. Road traffic noise has been assessed, both in terms of existing levels and the impact on existing dwellings caused by the anticipated increase in traffic in the area.

### **10.1 Site**

The site is bounded to the south by the Vale of Glamorgan Railway (currently serving Aberthaw Power Station) to the north by Porthkerry Road, to the west by existing housing and to the east by agricultural land.

At the time of the assessment, the railway line to the south of the site was soon to be opened up to a regular passenger service, so consideration has been given to the increase in traffic on this line using sample data from another location.

The eastern edge of the Cardiff Wales Airport runway is to the north of the site (to the north of Porthkerry Road). The prevailing wind direction, from the south-west, means that aircraft are generally approaching over the site. Therefore, as they are landing, the engines are not operating at full throttle, so generate less noise.

### **10.2 Equipment**

Noise levels were measured using a CEL-480.C.1 environmental noise analyser (serial number: 19463) calibrated in the field with a CEL-284/2 field calibrator (serial number: 2215). This equipment, complying with the type-1 rating in BS5969 was calibrated to comply with the manufacturer's performance specification on the 12 March 2004. Copies of the calibration certificates and appropriate documentation are included under Appendix 10.3.

### **10.3 Standards and assessment methodology**

This assessment has been carried out in accordance with *TAN 11: Noise* (1997), which provides noise exposure categories for noise sensitive development close to sources of transportation noise.

Supporting methodological documentation includes Calculation of Rail Noise (CRN) for the forecasting of noise from the reintroduction of a regular passenger service on the adjacent Vale of Glamorgan Rail Line. Calculation of Road Traffic Noise (CRTN) will be used for the assessment of noise at existing dwellings and any forecast increases caused by additional traffic generated by the new development.

### **10.4 Field calibration**

An external field calibration was undertaken pre and post measurement using a CEL-284/2 field calibrator. In all cases, the calibrated levels were within the correct range of 114dB  $\pm$ 0.2dB (at 1kHz), as specified by the manufacturer.

### **10.5 Measurements**

24 hour measurements were undertaken at two locations (see Figure 10.1) in order to assess the noise sources affecting the site.

Weather conditions for all surveys were cool, with partial cloud and a gentle south-westerly breeze. This was not ideal for the survey at the north of the site, where road and air traffic was dominant (with the source north-east of the receiver), however due to the site's coastal location could not be avoided (noise measurements should normally be taken when the wind

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direction is from source to receiver, however, the coastal location of this site resulted in a persistent south-westerly onshore breeze during the daytime).

Measurements were undertaken as follows:

- Location 1 (adjacent to rail line)  
27/09/2004 at 1200hrs to 28/09/2004 at 0700hrs  
28/09/2004 at 1330hrs to 29/09/2004 at 1330hrs
- Location 2 (north-eastern boundary)  
07/12/2004 at 1600hrs to 08/12/2004 at 1530hrs

During these surveys the sound level meter was set to log every 15 minutes and the following parameters were recorded:

- LAeq
- LA90
- LA10
- LAmax

### 10.6 Measurement results

The detailed results of the measurements are included under Appendix 10.4, while a summary is set out below:

- Location 1  
1<sup>st</sup> Survey  
Daytime  $L_{Aeq,16-hour}$  - 51.9dB  
Night-time  $L_{Aeq,8-hour}$  - 42.9dB  
  
2<sup>nd</sup> Survey  
Daytime  $L_{Aeq,16-hour}$  - 55.1dB  
Night-time  $L_{Aeq,8-hour}$  - 56.3dB
- Location 2  
Daytime  $L_{Aeq,16-hour}$  - 61.8dB  
Night-time  $L_{Aeq,8-hour}$  - 52.9dB

Considering the site under the “Mixed Sources” category in *TAN 11*, as it is affected both by rail and aircraft noise, the site is currently placed in Noise Exposure Category (NEC) – B. The “Mixed Sources” category specifies lower noise thresholds for each NEC band than the “Rail Noise” category, thus making the assessment more robust.

*TAN 11* states that for NEC – B sites:

*‘Noise should be taken into account when determining planning applications, and where appropriate, conditions imposed to ensure an adequate level of protection.’*

In addition to the noise data shown above, the detailed data contained in Appendix 10.4 illustrates that the  $L_{Amax}$  only exceeded 82dB during two 15-minute logging periods at Location 1. As a result the criteria specified under Note (2), Annex A, *TAN 11* (exceedance of night-time  $L_{Amax}$  of 82dB several times in 1 hour) can be discounted and the site remains under NEC-B classification.

**10.7 Forecasts**

***Rail noise***

The following rail noise data was gathered from New Inn railway station on the 5 December 2002 at a distance of 10 metres from the nearest rail.

**Table 10.1  
Rail noise data**

Train Type	Direction	Activity	Average SEL
Modern Sprinter – 2 carriages	North	Straight Through	91.2dBA
Modern Sprinter – 2 carriages	North	Accelerating	90.3dBA
Modern Sprinter – 2 carriages	South	Decelerating	88.9dBA
MEAN			90.2dBA

Train Type	Direction	Activity	SEL
Diesel Freight + 15 wagons	South	Straight Through	98.2dBA

Based on existing freight train movements and the Strategic Rail Authority's forecasted passenger train movements, this part of the assessment has used the following usage statistics:

0700 – 2300 32 passenger trains plus 6 freight trains

2300 – 0700 4 passenger trains plus 2 freight trains

Based on the above statistics and disregarding the on-site measurements the following levels are forecast at a distance of 10 metres from the rail line (including passenger and freight information).

$L_{Aeq,16-hour}$  (Day) - 61.0dB

$L_{Aeq,8-hour}$  (Night) - 57.8dB

Calculated using:  $L_{Aeq,T} = 10\lg(((SEL_{a1}/10^{xN})+(SEL_{b1}/10^{xN}))/Tseconds)$

This would place this area of the site under NEC-B in the "Rail Noise" category.

Due to the effect over the whole site of air traffic noise, it is more realistic to use the following method, where the passenger traffic is added to the measured levels.

Baseline levels:

$L_{Aeq,16-hour}$  (Day) - 53.7dB

$L_{Aeq,8-hour}$  (Night) - 53.5dB

Baseline + Forecast passenger use:

$L_{Aeq,16-hour}$  (Day) - 59.1dB

$L_{Aeq,8-hour}$  (Night) - 55.7dB

Calculated using:  $L_{Aeq,T} = 10\lg(((SEL_{a1}/10^{xN})/Tseconds)+L_{Aeq,T} Base)$

This would place this area of the site into NEC-B in the "Mixed Sources" category.

**Road traffic noise**

Traffic flows for this section have been obtained from the *Transport Assessment* that accompanies the planning application and which was completed in accordance with Calculation of Road Traffic Noise (CRTN).

Assessments have been undertaken for the following scenarios:

- Base year without development
- Base year plus development
- 2014 without development
- 2014 plus development

This assessment has enabled the calculation of noise impact at the nearest existing dwellings to the site. This has been identified as those dwellings fronting onto Porthkerry Road to the west of the roundabout serving the access road.

Traffic flows on this stretch of road have been calculated as follows.

**Table 10.2  
Traffic flows**

Scenario	18-hour traffic flow
Base Year – no development	6937
Base Year – plus development	8409
2014 – no development	8255
2014 – plus development	9727

Inputting these flows into Noisemap 2000 with a traffic speed of 45kmh-1 has resulted in the following calculated façade levels at a distance of 10 metres from the roadside, which equates to the northern façade of 1 Murlande Way.

**Table 10.3  
Calculated Noise Levels**

Scenario	Floor	L <sub>A10,18-hour</sub> (dB)
Base Year – no development	Ground	64.7
	1 <sup>st</sup>	66.6
Base Year – plus development	Ground	65.5
	1 <sup>st</sup>	67.4
2014 – no development	Ground	65.5
	1 <sup>st</sup>	67.4
2014 – plus development	Ground	66.2
	1 <sup>st</sup>	68.1

The above results demonstrate that in the base year traffic from the development contributes an additional 0.8dBA to the dwellings on Porthkerry Road and an additional 0.7dBA in 2014. This additional noise is of little significance and even below the accepted accuracy levels of Type 1 (BS5969) sound measuring equipment.

**10.8 Assessment**

The *TAN 11* assessments of the site show the areas closest to the major noise sources to be in the upper reaches of NEC – B. The L<sub>Amax</sub> of 82dB was only exceeded twice during the one night-time survey at the area of the site adjoining the railway.

The CRTN assessment of traffic noise created by the fully open site shows a negligible impact on the existing dwellings in the area.

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The noise from air traffic will affect the whole of the site, while road and rail noise will only significantly affect those dwellings immediately adjacent. These will then act as a screen for other dwellings within the site.

As a result of the air traffic noise, good quality double glazed units should be installed to habitable rooms of all new dwellings across the site. While the noise levels are not particularly high, night-time air traffic (although infrequent at present) is likely to cause sleep disturbance by the sporadic nature and intensity of its occurrence. A well sealed 6-10-6mm (glass-gap-glass) glazing unit should be sufficient to reduce levels to 30dB within habitable rooms and reduce the possibility of sleep disturbance. The use of trickle vents should be avoided due to their lack of acoustic resistance and the fact that the brisk on- and off-shore breezes experienced in the area are likely to play across the vents, inducing a noise source of their own. This level of acoustic treatment will also substantially reduce the intrusion of road and rail traffic noise to required internal levels.

This acoustic treatment will also be complemented by the use of dense roofing materials, such as Marley tiles as opposed to slate. Design features such as open eaves should also be avoided.

### **10.9 Summary**

The periphery of the proposed development site experiences moderate levels of transportation noise for a semi-rural location. The whole of the site is moderately affected by air traffic noise.

The northern and southern peripheries of the site experience noise levels at the higher end of NEC – B. The presence of air traffic noise at the site means that the whole of the site is affected by noise, which cannot be mitigated at source, and also means that even the quieter areas of the site will still remain within NEC – B, albeit lower in the band.

The noise from all sources can be effectively ameliorated by fairly traditional and unobtrusive means. This should substantially remove the risk of unacceptable levels of noise exposure within the proposed dwellings. Therefore, noise should not give sufficient cause for concern for the proposed development.

## **11.0 PLANNING CONTEXT**

### **11.1 Introduction and planning designations**

As part of the Environmental Statement, a review of current planning policies at national and local levels has been undertaken to consider whether the proposed development conforms with planning policy. This is particularly relevant in view of sub-section 38(6) of the *Planning and Compulsory Purchase Act 2004*, which requires planning applications to be determined in accordance with the development plan, unless material considerations indicate otherwise. This principle has been developed and clarified by case law, which has confirmed that a particular proposal does not need to accord with each and every policy in a development plan. The key issue is that it accords with the overall focus of development plan policies taken as a whole. In this case, the site has a development plan allocation and it is concluded that the proposed development complies with both the development plan and national planning guidance.

The site is not subject to restrictive planning designations. It is not located in a National Park, Area of Outstanding Natural Beauty, Green Belt, Special Landscape Area or Green Wedge. It does not form part of an area that has been designated for its nature conservation or scientific interest. It does not contain any scheduled ancient monuments, listed buildings or registered parks. A small part of the site lies within the Rhose Conservation Area, but that part of the site does not contain any buildings or other features that are of importance to the character and appearance of the conservation area.

### **11.2 The statutory development plan**

#### ***The current development plan***

The statutory development plan for the area comprises the *Vale of Glamorgan Unitary Development Plan 1996-2011* (UDP), which was adopted by the Vale of Glamorgan Council in April 2005. The site is allocated for residential development in the UDP under Policy HOUS 1(22). The site is allocated for the development of 400 units in the current plan period, to 2011, and a further 200 units in the next plan period (2011-2026), giving a total allocation for the site of 600 units.

The UDP includes a range of general policies relating to the environment, housing, transportation, sport and recreation. The UDP policies that are relevant to the proposed development are:

- Policy HOUS 1(22) Residential allocation
- Policy HOUS 12 Affordable housing
- Policy ENV 2 Agricultural land
- Policy ENV 11 Protection of landscape features
- Policy ENV 16 Protected species
- Policy ENV 20 Development in conservation areas
- Policy ENV 27 Design of new developments
- Policy TRAN 9 Cycling development
- Policy TRAN 10 Parking
- Policy REC 3 Provision of open space within new residential developments
- Policy REC 6 Children's playing facilities
- Policy REC 12 Public rights of way and recreational routes.

The proposed development, as set out in the development framework, has taken full account of the policies of the UDP and it is considered that the design concept for the site accords with their requirements.

### ***The emerging development plan***

The Vale of Glamorgan Council has embarked on the preparation of the *Vale of Glamorgan Local Development Plan (LDP)* which, when statutorily adopted, will supersede and replace the UDP. The LDP will provide the land use strategy for the Vale of Glamorgan for the period 2011-2026.

Work on the LDP commenced in 2006 and the plan is scheduled to be adopted in 2011. The plan is at a relatively early stage of preparation, with the *Draft Preferred Strategy* (The Vale of Glamorgan Council, December 2007) having been published for consultation earlier this year. In the *Draft Preferred Strategy*, Rhoose is identified by the Council as a primary settlement. The Council's own assessment of settlements in the Vale (*Sustainable Settlements Appraisal*, December 2007) identifies Rhoose as a highly sustainable settlement, according it the same weighted score as Barry and Penarth on criteria for community and employment, transport services and accessibility and community facilities.

The site has been promoted as a candidate site in the LDP and the applicants have made representations on the LDP.

### **11.3 National planning policy guidance**

National planning policy guidance is produced by the Welsh Assembly Government and is principally set out in three main documents: *People, Places, Futures: The Wales Spatial Plan* (2004) (WSP); *Planning Policy Wales* (March 2002) (PPW), as updated by subsequently published *Ministerial Interim Planning Policy Statements* (MIPPSs); and the accompanying series of *Technical Advice Notes* (TANs).

#### ***The Wales Spatial Plan***

*People, Places, Futures: The Wales Spatial Plan* sets out the Assembly Government's vision for Wales. The WSP is currently being updated and a consultation draft was published earlier this year (*People, Places, Futures: The Wales Spatial Plan – 2008 Update Consultation*, Welsh Assembly Government, 2008). In that document the site is located within the South East – The Capital Network region. The Assembly's overall vision for the area is:

*'An innovative skilled area offering a high quality of life – international yet distinctively Welsh. It will compete internationally by increasing its global visibility through stronger links between the Valleys and the coast and with the UK and Europe, helping to spread prosperity within the area and benefiting other parts of Wales.'*

#### ***Planning Policy Wales***

*Planning Policy Wales* has been amended by two relevant MIPPSs: MIPPS 01/2006 *Housing*; and MIPPS 01/2008 *Planning for Good Design* (January 2008).

The Assembly Government's objectives with regard to housing, as set out in paragraph 9.1.1 of PPW, are to provide:

- *'Homes that are in good condition, in safe neighbourhoods and sustainable communities; and*
- *'Greater choice for people over the type and location they live in, recognising the needs of all, including those in need of affordable or special needs housing in both urban and rural areas.'*

PPW states, in paragraph 9.2.8, that,

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*'In identifying sites to be allocated for housing in development plans, local planning authorities should follow a search sequence, starting with the re-use of previously developed land and buildings within settlements, then settlement extensions and then new development around settlements with good transport links.'*

This approach was adopted by the Vale of Glamorgan Council in preparing its UDP and the site was identified as a preferred location for new housing development. This allocation was tested through the development plan process, which involved full public consultation.

In addition, the Assembly will seek to ensure (paragraph 9.1.1) that:

- *'new housing and residential environments are well designed, environmentally sound (especially energy efficient) and make a significant contribution to promoting community regeneration and improving the quality of life; and that*
- *'the overall result of new housing development in villages, towns or edge of settlement is a mix of affordable and market housing that retains and, where practical, enhances important landscape and wildlife features in the development.*

Paragraph 9.1.2 of PPW goes on to state that local planning authorities should promote sustainable residential environments, avoid large housing areas of monotonous character and make appropriate provision for affordable housing. They should promote:

- mixed tenure communities;
- development that is easily accessible by public transport, cycling and walking;
- mixed use development so communities have good access to employment and services;
- attractive landscapes around dwellings, with usable open space and regard for biodiversity, nature conservation and flood risk;
- greater emphasis on quality, good design and creating places to live that are safe and attractive;
- the most efficient use of land;
- well designed living environments, where appropriate at increased densities;
- construction of housing with low environmental impact that especially maximises energy efficiency and minimises the use of energy from fossil fuel sources, using renewable energy technology where appropriate; and
- "barrier free" housing developments.

The proposal complies with the housing objectives of national planning guidance. It will provide attractive new homes in a well designed environment in a sustainable location where people wish to live. The site has been identified through the development plan in accordance with the search sequence criteria set out in PPW. PPW also includes guidance on a wide range of issues relating to environmental, housing, recreation and transportation and this brief takes full account of its provisions.

### **Technical Advice Notes**

PPW is supplemented by a series of *Technical Advice Notes* (TANs), of which, the following are considered to be most relevant to this site:

- TAN 2 *Planning and Affordable Housing* (June 2006)
- TAN 5 *Nature Conservation and Planning* (1996)
- TAN 6 *Agricultural and Rural Development* (2000)
- TAN 12 *Design* (2002)
- TAN 15 *Development and Flood Risk* (2004)
- TAN 18 *Transport* (March 2007).

#### **11.4 Design and access statements**

*TAN 12: Design* advises that planning applications for developments that have design implications, including infrastructure and changes to landscape appearance, should be accompanied by a planning application design statement. This should explain:

- the design principles and design concept;
- how these are reflected in the development's location, layout, density, scale, detailed design and landscape;
- how the design relates to the site and its wider context; and
- how the development will meet UDP design policies and SPG requirements.

*The Town and Country Planning (General Development Procedure) (Amendment) (Wales) Order 2006* introduced a requirement for most planning applications to be accompanied by an access statement.

Relevant design and access issues are addressed in the *Design, Access and Sustainability Statement* that accompanies the application. This document also includes a landscape strategy.

#### **11.5 Development brief**

The Council has adopted a site development brief for the site: *Land to the North of the Railway Line, Rhoose: Approved Development Brief* (The Vale of Glamorgan Council, August 2007). The proposals set out in the applicants' submitted *Design, Access and Sustainability Statement* accord closely with the *Approved Development Brief*.

#### **11.6 Other supplementary planning guidance**

The Vale of Glamorgan Council has produced a number of documents that provide non-statutory supplementary planning guidance (SPG) on a number of issues. These are referred to in the *Approved Development Brief*. The design of the proposed development, as set out in the applicants' *Design, Access and Sustainability Statement* takes account of the Council's SPG, where it has been formally approved.

#### **11.7 Summary**

A review of planning policies at national and local levels has been undertaken to consider whether the proposed development conforms with current planning policy. It is concluded that the proposal complies with the statutory development plan, national planning policy guidance and supplementary planning guidance.

## **12.0 CONCLUSION**

This *Environmental Statement* describes the proposal by the National Assembly for Wales, Bellway plc and Persimmon Homes (Wales) Ltd for residential and ancillary development of a site of approximately 26 hectares of land located to the north of the railway line at Rhoose in the Vale of Glamorgan. Together with other documents, the ES supports an application for outline planning permission, which has been submitted to the local planning authority, The Vale of Glamorgan Council.

The proposal will involve developing the site for approximately 600 dwellings in accordance with the allocation of the land for housing under Policy HOUS 1(22) of the adopted *Vale of Glamorgan Unitary Development Plan 1996-2011*. In the UDP the site is allocated for the development of 400 units in the current plan period, to 2011, and a further 200 units in the next plan period (2011-2026), giving a total allocation for the site of 600 units. In the emerging development plan – the *Vale of Glamorgan Local Development Plan 2011-2026* – Rhoose is identified as a primary settlement and as one of the area's three most highly sustainable settlements.

A detailed *Design, Access and Sustainability Statement* has been prepared, which illustrates the applicants' proposals for the site. The proposed development will incorporate a substantial element of public open space, with footpath and cycle links to the existing community of Rhoose. The existing green lane through the site will be retained and existing hedgerows will be maintained wherever possible. New planting will be incorporated into the development in order to complement the retained vegetation. Vehicular access to the site will be achieved from a new roundabout to be built on Pentir y De, with a secondary, emergency access off Porthkerry Road, serving a limited development (maximum 20 units). The scheme also provides for a comprehensive surface water drainage solution that would not appear to have any consequential effect on the surrounding area and, in particular, would be designed not to increase greenfield run-off rates to the south of the site.

Inevitably, there are potential environmental effects associated with the proposed development. The applicants have recognised the relevant issues and have commissioned specialist consultants to review the key impacts that might arise.

The traffic impacts of the proposed development are the subject of a separate *Transport Assessment*. The application is also accompanied by a *Drainage Report*.

The ES has considered potential impacts on agriculture, air quality, cultural heritage, drainage, ecology, landscape and visual amenity, noise and vibration. Where necessary, in each case, appropriate mitigation proposals are made, which are designed to ameliorate any potential adverse environmental effects. With the benefit of those measures, it is concluded that the development may proceed subject to appropriate planning conditions and, where necessary, planning obligations. Overall, the results of the environmental impact assessment indicate that there is no single issue or combination of issues which is of sufficient importance that the proposed development should be refused planning permission.