

Design, Access and Sustainability Statement

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

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

2008

Land to the North of the Railway Line, Rhoose, Vale of Glamorgan Design, Access and Sustainability Statement

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1.0 INTRODUCTION

1.1 Background

The National Assembly for Wales, Bellway plc and Persimmon Homes (Wales) Ltd own or control approximately 26 hectares of land to the north of the railway line, off Pentir y De, Rhoose in the Vale of Glamorgan. The land has been allocated for residential development in the statutorily adopted *Vale of Glamorgan Unitary Development Plan 1996-2011* (UDP) and the consortium is seeking to secure its development for housing. The location of the site is illustrated in **Figure 01**.

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. The application is accompanied by a master plan, illustrating the development concept, and by a range of supporting documents, including an environmental impact assessment, a transport assessment, a drainage report and this *Design, Access and Sustainability Statement*.

1.2 Purpose

The UDP requires a comprehensive approach to the development of the site. To assist this, the Council has approved a site development brief: *Land north of the Railway Line, Rhoose: Approved Development Brief* (August 2007).

This *Design, Access and Sustainability Statement* describes the development proposals for the site and sets out a vision and framework for the proposed residential development. It accords closely with the principles set out in the *Approved Development Brief*. It forms a sound, overall framework to guide the future development of the site and provides appropriate urban and landscape design guidance. All future proposals for development will need to demonstrate that they comply with the design concept that is set out in this statement.

The *Design, Access and Sustainability Statement* is intended:

- to fulfil the statutory requirement for an access statement under the *Town and Country Planning (General Development Procedure Order) (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 the *Approved Development Brief* (2006); and
- to provide the sustainability statement required by the local planning authority in *Supplementary Planning Guidance: Sustainable Statement* (2006).

In accordance with *TAN 12: Design*, this statement is of appropriate detail to support an application for *outline* planning permission.

1.3 Acknowledgements

This document has been prepared on behalf of the applicants by White Young Green in association with the following consultants:

- | | |
|----------------------------------|------------------------------------|
| • Capita Symonds | Access, infrastructure and ecology |
| • Cotswold Archaeology | Archaeology and cultural heritage |
| • Kernon Countryside Consultants | Agricultural land. |

2.0 PLANNING POLICY BACKGROUND

2.1 National policy guidance

The Welsh Assembly Government's national planning and land use policy is set out in the *People, Places, Futures: The Wales Spatial Plan* (WSP) (2004); *Planning Policy Wales* (PPW) (March 2002), as updated by subsequently published *Ministerial Interim Planning Policy Statements* (MIPPSs); and the accompanying series of Technical Advice Notes.

The Assembly Government's objectives with regard to housing, which are set out in the *MIPPS 01/2006 Housing*, are to provide:

- *'Homes that are in good condition, in safe neighbourhoods and sustainable communities';* and
- *'Greater choice for people over the type of housing and the 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.'*

The MIPPS also states, in paragraph 9.2.8, that,

*'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.'*

In addition, the Assembly will seek to ensure that:

- *'New housing and residential environments are well designed, environmentally sound (especially energy efficient) and make a significant contribution to promoting community regeneration and improve 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.'*

The MIPPS 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 efficiency and minimises the use of energy from fossil fuel sources, using renewable energy technology where appropriate; and
- "barrier free" housing developments.

The guidance contains useful policy in respect of planning for sustainability including promoting sustainability through good design.

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The Assembly's objectives with regard to access and transport are firstly addressed in the *Wales Spatial Plan*:

- *'Accessibility is an important factor in improving quality of life and prosperity.'*
- *'Access to essential facilities, services and employment is an important determinant of social inclusion.'*

And more specifically in paragraph 8.7.3 of *Planning Policy Wales*, which states:

- *'Proposed access to a development should reflect the likely travel patterns involved. It should ensure that people can reach the development, as far as practicable, by walking, cycling and public transport, as well as by car.'*

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

- TAN 2 *Planning and Affordable Housing* (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* (2007).

TAN 12 explains the importance of street design in paragraph 5.4:

'The layout and detailed design of development can be critically important in providing genuine alternatives to car travel and achieving quality in the environment as a whole. Transport infrastructure should contribute to a sense of place and community within a development and the design of streets has a crucial role in this regard.'

The proposed development at the site complies with the housing and access 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 statement takes full account of its provisions.

2.2 Local policy guidance

The site is allocated for residential development under Policy HOUS 1(22) of the adopted *Vale of Glamorgan Unitary Development Plan 1996-2012*. The accompanying text to the policy states:

'The site comprises 26 hectares of greenfield land located between the existing settlement of Rhoose and the Rhoose Point development. It is anticipated that the site will yield approximately 400 units during the Plan period (1996-2011) and 200 units during the next Plan period (2011-2026). The Council is keen to ensure that anticipated development rates at the Rhoose Point site are achieved and that sufficient land at this location is available throughout this Plan period and the next. Therefore planning permission for the development of this site will not be granted until 80% beneficial occupation of the residential units on the Rhoose Point site has been achieved.'

'The Council will through discussions with the site owners/developers seek to secure affordable housing, Public Open Space, children's play areas, appropriate landscaping and contribution/provision for educational, recreational, community and public transportation provision.'

'The development of the site will be guided by a Development Brief, which will be produced in partnership with the Council, the purpose of the brief will be to ensure a comprehensive approach to the development of the site. It is essential that the development of this

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significant site makes an effective and positive contribution to the social, economic and environmental well being of the local community.

'In addition to a Development Brief, the Council will require a Traffic Impact Assessment of the site to be undertaken in order to assess the potential impact of the development on the existing highway network and to identify appropriate transportation solutions.

'Glamorgan Gwent Archaeological Trust have indicated that the site may be of archaeological value and that a desk top survey of the site should be submitted as part of any planning application.

'Dŵr Cymru Welsh Water's Capital Investment to enable this site to proceed is considered to be long term. Development of this site in advance of the planning improvements would need to be subject to an appropriate planning agreement, to be agreed prior to the granting of planning permission. This approach would, therefore, ensure that essential water and sewerage facilities are in place.

'The Environment Agency has indicated that the site is located on a major aquifer of high vulnerability. Therefore, no discharge of foul or contaminated run-off must be made to ground. The Agency will need to be consulted prior to any works being undertaken at the site to discuss the necessary measures required to protect the aquifer.'

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 include:

- 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 recreation routes.

In terms of access, Policies ENV 27, TRAN 9 and TRAN 10 are relevant. Policy ENV 27 addresses proposals for new development and recommends that new development must have full regard to the context of the local natural and built environment and its special features. The policy also states that *'... new development will be permitted where it provides a high level of accessibility, particularly for public transport, cyclists, pedestrians and people with impaired mobility.'* The Council also addresses the maintenance and improvement of existing public rights-of-way in Policy REC 12 by the creation of new access opportunities as part of development proposals.

The *Design, Access and Sustainability Statement* 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.

2.3 Supplementary planning guidance

The Council has produced a number of documents that provide non-statutory, supplementary planning guidance (SPG) on a number of issues, including the production of access statements (*Guidance for Access Statements for Planning Applications*, 2007). *Design and Access Statements* (CABE, 2007) also provides guidance on the preparation of design and access statements and gives advice under a number of relevant headings such as use, layout and scale.

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The Council has also approved *A Model Design Guide for Wales – Residential Development* (LDA Design, March 2005), prepared for the Planning Officers Society for Wales with the support of the Welsh Assembly Government. The main purpose of the document is to increase the standard of design in residential developments, regardless of scale. A number of design aspects are covered by this document such as compactness, character and context. The main topics relevant to the *Design, Access and Sustainability Statement* are accessibility and ease of movement, and legibility.

With regard to accessibility and ease of movement the guide states:

'Create development layouts that are accessible to all in society, make links into surrounding areas, create new links where necessary and ensure that it is easy to get from A-B within a development.'

As to legibility the document suggests:

'The structure of key streets and spaces forms the main image of a place and makes it easy for people to orientate themselves and find their way round.'

Regard has been had to these documents in the production of this statement.

Other approved SPGs that are relevant to this site include:

- Amenity Standards
- Trees and Development
- Affordable Housing
- Sustainable Development
- Design in the Landscape

This *Design, Access and Sustainability Statement* has taken account of the Council's SPG where it has been formally adopted.

2.4 Other guidance

There are several other documents that are relevant to the proposed development and include:

- *The South Wales Parking Guidelines* (as amended);
- *The Vale of Glamorgan Local Transport Plan* (2000);
- *The Vale of Glamorgan Cycling Strategy*.

This *Design, Access and Sustainability Statement* has taken account of such guidance where relevant. With regard to the South Wales Parking Guidelines *Planning Policy Wales* now requires local authorities to ensure that new developments provide lower parking standards than hitherto.

3.0 THE SITE AND ITS EXISTING SURROUNDINGS

3.1 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 01**.

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 02**.

3.2 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.

3.3 Landform and landscape

The site is not located within a national, regional or local landscape designation. Its landscape context is illustrated in **Figure 03**. 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.

A detailed landscape appraisal of the site has been undertaken and this is illustrated on **Figure 04** and in photographs of the site (**Figures 05-07**). The site has a pleasant south-facing aspect with views to the Bristol Channel and the North Devon coast. The boundary of the site is well defined, with the edge of the settlement of Rhoose to the north and west, a main road 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 an access track which enters the site from Porthkerry Road. A public footpath follows this track, as it heads south through the site into the Rhoose Point development via an at-grade pedestrian crossing over the railway line. The track and the hedgerows along each side, which include significant trees, are a dominant feature within the site. The existing vegetation would be maintained, wherever possible, and integrated into the development. The continuous vegetation along the track clearly splits the site into two parts, obscuring views from one side to the other.

The site has a fairly open character on the eastern side of the access track 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.

A tree condition survey was carried out at the site in November 2004. It confirmed that a proportion of the elm trees have Dutch Elm disease and that it is likely many of these trees would die during the next five to ten years.

3.4 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 the *Environmental Statement*.

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3.5 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.

3.6 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.

3.7 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 02**. 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.

3.8 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

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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.

4.0 PROPOSED PLANNING AND DESIGN PRINCIPLES

4.1 Proposed site layout

The development framework drawing (**Figure 09**) shows the layout proposed for the site. The track, which divides the site into two areas of almost equal size, is a major feature and is therefore 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 existing hedgerows. 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 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 10m wide, is proposed 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.

4.2 Land uses

The site will comprise a residential development of approximately 600 units, in accordance with the housing allocation in the UDP. 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 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” and 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 density of residential development (including affordable housing) will vary slightly across the site to create variety in the character of the various parts of the development. An overall density of approximately 30 residential units per hectare is proposed, which would equate to approximately 600 new homes.

4.3 Vehicular access proposals

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, which also serves the Rhose Point development. 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, Cofton Ltd.

From the new roundabout, there will be a requirement for a length of 7.3m carriageway which will not have any direct frontage access. This section of road, leading to another roundabout,

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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 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.

Within the site, the road network is laid out to provide a loop system, linking the western part of the site to the eastern side in two locations. The loop road changes direction frequently in order to help slow traffic. Other traffic management measures may also be appropriate. All roads within the site will be designed and constructed to adoptable standards (including street lighting) and will be offered for adoption by the Highway Authority.

The design, surface material selection and landscape treatment of this road will clearly identify that it is the main route around the site, in order to assist with the orientation of drivers, cyclists and pedestrians. Buildings should be front-on or side-on to this main loop road to help define its overall importance and character.

4.4 Pedestrian and cyclists

The existing public right of way, which follows the track through the centre of the site, will form the focus of the pedestrian circulation network. It will be retained on its existing alignment and enhanced for use as a footpath and cycleway and will provide direct access to the public transport services that currently run along Porthkerry Road. It will also connect with a new footpath/cycleway to be provided within a buffer on the northern side of the railway line. This will give east-west access within the site, connecting to the east with Pentir y De and to the west with the railway station. The 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 that will follow Porthkerry Road to the north.

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

4.5 Public transport

Rhoose is well served by public transport facilities, with a choice of travel by bus or rail. Porthkerry Road, immediately north of the site, is a bus route, providing a regular service to Barry and Cardiff to the east and Llantwit Major and Bridgend to the west, as well as a more limited service to Cowbridge. The Vale of Glamorgan railway line was re-opened in June 2005. It serves a new railway station at Rhoose, close to the site, and provides an hourly service to Cardiff, Barry, Bridgend and Llantwit Major. The development proposals allow for easy access on foot or cycle to both bus and rail services.

4.6 Location of community facilities

Rhoose contains a range of local facilities, including a primary school and shops. These will be easily accessible from the development of foot or by cycle.

The proposal includes for the provision of a substantial area of public open space with associated recreation facilities. To facilitate provision and maintenance, this has been consolidated in a single location and placed at the centre of the development where it will be accessible to future residents of the site. Its location is such that it will be accessible also to residents of the rest of Rhoose, directly linked by the proposed footpaths/cycleways.

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4.7 Access for disabled persons

Footways within the site will incorporate dropped kerbs and tactile floor markings at appropriate locations to facilitate road crossings. The site is gently sloping. As such, it is not envisaged that it will be necessary to introduce steps into footpaths or cycleways. All houses built on the site will be designed in accordance with the *Disability Discrimination Act* and the Building Regulations prevailing at the time.

4.8 Car parking

Arrangements for car parking can have a profound effect on the overall character of the development. Cars should not be allowed to dominate the street scene although careful consideration needs to be given to the security of car parking areas. The Vale of Glamorgan Council has adopted the *Standing Conference on Regional Policy in South Wales Parking Guidelines (Revised Edition 1993)* and Policy TRAN 9 of the UDP requires that parking facilities should be provided in accordance with the approved guidelines. However, *Planning Policy Wales* now requires local authorities to ensure that new developments provide lower parking standards than hitherto.

4.9 Transport assessment

The applicants have prepared a *Transport Assessment* for the development, in accordance with parameters that were agreed in advance by the highway authority. This indicates that no capacity problems are predicted at the Port Road/Porthkerry Road roundabout, the traffic signals at Fontygary Road and the proposed access into the site from Pentir y De. The assessment indicates that a minor improvement will be necessary at the Porthkerry Road/Pentir y De junction, so as to create additional capacity, and this improvement may be secured by a planning condition imposed on any grant of planning permission.

4.10 Landscape design principles and objectives

The landscape strategy for the site describes the landscape structure, recreation and amenity, public open space and the pedestrian/cycle network and has been based on a detailed site appraisal. The existing landscape features and opportunities at the site are:

- The main landscape feature of the site that provides an opportunity for the proposed development is the existing vegetation within the site and along its boundaries. Existing hedgerows incorporate mature trees which would help to create a landscape setting for the residential development and public open space.
- The existing network of public footpaths near the site offer opportunities for linking the development with the surrounding area. Areas of importance for recreational use near the site are the Porthkerry Country Park and the coastal footpath. These are easily accessible via the network of public routes through the Rhoose Point Development to the south.
- The concentration of mature scrub along the railway line is an important feature and would assist with screening the railway from the proposed development.

The principles underlying the landscape strategy for the proposed development are to:

- provide a new and appropriate landscape structure for the proposed development, retaining existing landscape features where practicable;
- establish a hierarchy of landscape character for the road network, and associated cycle and pedestrian ways to provide a “sense of place” and legibility;
- consolidate the public open space for ease of maintenance; its location would make it readily accessible to the wider community;

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- provide pedestrian and cycle links with Rhoose to provide access to community amenities and to existing public rights-of-way giving access to the surrounding area.

4.11 Landscape strategy

The site benefits from existing landscape features which would be retained as "green assets" for the proposed development, as shown in **Figure 08**. These include the areas of trees and tall hedgerows along the track through the middle part of the site and the existing screen vegetation along some sections of the site boundary. The proposed development does not include proposals for large areas of structure planting as significant areas of existing vegetation, trees and hedgerows are to be retained as part of the proposals. Some of this vegetation would 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. Existing vegetation on site would be retained wherever practicable, or supplemented by new planting in key locations.

There are hedgerows on site that qualify as "Important Hedgerows" under the *Hedgerow Regulations 1997*. These are the overgrown hedgerows following the public footpath through the centre of the site. The tree condition survey identified that there are trees to be retained or pruned within these hedgerows (**Figure 08**). It also identified diseased Elm trees, many of which would die during the next five to ten years. Therefore, a phased programme of felling would be adopted which would identify the worst affected trees for removal and retain the better trees until such time as they succumb. Each phase of felling would be followed by re-planting with native species.

Hedgerows on site are either to be retained, with some management, or removed, depending upon the quality of these hedges. The planting proposals for the development include predominantly formal planting in selected locations to complement the retained vegetation. Following an initial consultation, it was confirmed that any new planting, including its location and type, would need to take account of operational constraints that would be imposed by Network Rail and Cardiff International Airport.

The main access road to the site is the link road from Pentir-y-De to the east of the site. This is the primary road; its landscape treatment would create an attractive through route and appropriate entrance for the development. Any planting, where deemed appropriate, would 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 would be clearly legible as the main road network and the route into and out of the development. This legibility would be enhanced through a combination of landscape treatment, surface material selection and the relationship of development to these streets. This would be important in defining the overall character and legibility of the development. Buildings would front or side onto 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 network of paths for cyclists and pedestrians would link the individual parts of the development, conveniently and safely, with the amenities available within the development, the centre of the village of Rhoose and to the Vale of Glamorgan Coastal Footpath. The footpaths would also be amenities in their own right as they would contribute to the active recreation provision.

4.12 Public open space and provision for play

An area of strategic open space is included within the development proposals; it is illustrated on the development framework (**Figure 09**). The size of this new facility has been calculated in accordance with the standards advocated by the National Playing Fields Association (NPFA), which recommends a minimum of 2.4 hectares (6 acres) of open space per 1000

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people. The NPFA advises that the total standard would be subdivided into outdoor sport and children's play space, as follows:

- outdoor sport: 1.6 hectares (4 acres) per 1000 people, within which there would be a specific allocation for pitch sports of 1.2 hectares (3 acres) per 1000 population; and
- children's playing space: 0.8 hectares (2 acres) per 1000 people.

The proposed development would 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 100 m² with a 5m wide buffer zone around. It would 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 m² 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 would 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 least eight types of play equipment. NEAPs comprise an activity zone of 1000 m² 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 would 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 09**) 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, including a Multi-Use Games Area (MUGA), and a skateboard area. Two LAPs would also be provided, one in the eastern part of the development and one in the west.

The main area of open space is consolidated in one area for ease of maintenance and located so that it is readily accessible to both the wider community and the future residents of the proposed development at 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 would provide an attractive setting for informal recreation, such as jogging and cycling. It would also contribute significantly to the biodiversity of the area as a whole.

4.13 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 drainage assessment for the proposed development has been undertaken and a *Drainage Report* is submitted to accompany the planning application.

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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 their 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.

With regard to 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.

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

5.0 DESIGN AND LANDSCAPE GUIDANCE

5.1 Urban design framework

A high standard of design and a quality environment will be achieved on the site through the application of sound design principles. A well-designed development should be an intelligently considered response to the site, the brief and the context, whilst using resources sustainably. Guidance on this issue can be found in *TAN 12: Design* and other documents.

This *Design, Access and Sustainability Statement* sets out the development framework for the site and is illustrated in **Figure 09**. Following the grant of outline planning permission, the detailed design of the site will need to incorporate the following strategic principles:

- A townscape that is appropriate to the semi-rural/coastal nature of the site, which is non-uniform and low rise.
- Enhancement of the existing indigenous landscape by the provision of planting within the development sites and by supplementing existing hedgerows. It should be noted that there is a practical restriction on tree planting on the site due to its proximity to Cardiff International Airport.
- Providing a logical and legible road hierarchy which generates opportunities for different forms of access, via frontages and through private access ways.
- Co-ordination between individual development sites through the use of continuous detail particularly with regard to the highway layout and the philosophy of landscaping.
- Particular areas of the site may require special attention to detail having regard to their visual sensitivity or proximity to adjacent users.
- Safeguarding the residential amenity of adjoining existing properties.

There are a number of key issues which will need to be considered for the layout of houses, streets and landscape features in order to create an attractive, interesting, people-friendly place, where traffic is slowed naturally by the arrangement of buildings, and cars do not dominate.

- **Key views out and into the site** Where appropriate, the orientation of buildings should take advantage of the principal views across the Bristol Channel to the south. Careful consideration should also be given to the view into the site from across the Bristol Channel.
- **Focal spaces** Focal spaces should be provided where possible as these enhance the character and quality of the environment. These could be provided in a variety of ways: for example, the arrangement of housing around local play areas could create an attractive communal resource.
- **Building frontage** Buildings should, wherever possible, be front or side onto streets, pedestrian/cycle routes, public spaces and the track through the centre of the site. Of particular importance is the relationship of buildings to the central open space and the track. Buildings must front onto the open space to provide natural surveillance. For the track, the layout should try to avoid rear gardens abutting the existing hedgerow and, therefore, the houses should front onto the track, or where that is not possible, they should be side onto it. Similarly, the houses should front onto the landscape buffer to the railway, in order to promote security.

The appearance of the development from Pentir y De needs to be carefully considered, particularly for the section between Porthkerry Road and the new roundabout, where rear gardens backing onto the road will not be acceptable. A consistent building frontage should ideally be maintained along the roads to ensure a strong street frontage. However, the building line may be stepped to provide some variation, articulation and interest. With the majority of buildings facing onto streets, active frontages are created, which promotes natural surveillance of the streets. In order to address the issue of

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privacy in relation to both existing and new residents along the northern site boundary, gardens may need to incorporate new screen planting.

- **Building layout** The houses should be a mixture of terraces, semi-detached and detached housing. Limited, small scale flatted development might also be appropriate in order to provide a mix of properties and opportunities for affordable housing. Approved affordable housing should be provided.
- **Gardens** Where gardens form a boundary to the street, they should be predominantly walls or hedges, to be built in materials to match the dwelling(s). Each house should feature a rear private garden space which is not directly overlooked by adjacent properties. Each must include a private outdoor area, privacy to which is secured by means of design in layout or enclosure by permanent eye level structures. Where houses are laid out parallel to each other across private rear gardens, the Council will wish to secure recognisable privacy and separation between principal windows to avoid overlooking. In practice, this may involve careful consideration of internal layout, the design of fenestration and the creation of intervening landscaping/topography.
- **Security** The aim of the finished development will be to create legibility, in terms of:
 - A clear distinction between private and public space, with private gardens to the rear of dwellings and gardens to the front.
 - A positive relationship between built form and public areas. Building frontages, windows and entrances should overlook streets and public spaces in order to maintain surveillance.
 - In addition, the location and design of landscaping adjacent to buildings and walls should be carefully considered from the point of view of security provision.

5.2 Sustainability

The development should address the principles of sustainable development, which has been officially defined as '*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*' (Our Common Future: The Brundtland Report, Report of the 1987 World Commission on Environment and Development).

The site itself is a sustainable location for development. It is close to the centre of Rhoose, which offers existing services and community facilities, and to local employment opportunities at Cardiff International Airport and its business park. The village is served by a bus route and rail passenger services with a new railway station for Rhoose, just to the east of the site. These facilities provide easy access to a wider range of employment opportunities in the Vale, Cardiff and beyond.

In terms of building design, sustainability means that buildings are designed specifically to reduce the level of resources that are consumed, whether energy, raw materials or water. In the process of using less finite resources and more renewable ones, development then becomes healthier and more user-friendly. There are also benefits in terms of reduced running costs over the lifetime of the building. Consideration should also be given to the provision of buildings suitable for future adaptability.

The gently sloping, southerly aspect of the site offers an excellent opportunity to design a layout and to orientate houses that are more energy efficient with passive solar gain being achievable.

A sustainability checklist of the proposed development has been prepared in accordance with the Council's *Supplementary Planning Guidance: Sustainable Development* and is provided in **Appendix 1**.

5.3 Building design

Well-designed buildings have qualities of proportion, rhythm, pattern, colour and texture, which together create architectural quality. The appearance of a building is also intrinsically related to all other aspects of a building: function, construction, organisation and so forth. The appearance and form of the buildings should also be a response to context. However, in this instance, it is difficult to identify a particular character for the housing as the surrounding residential developments are varied. Good architecture deals with and integrates all of these issues.

- **Building proportions:** Good architectural design is achieved through the use of well considered proportions that please the eye. Buildings are generally formed from a base, middle and upper order. How these are designed and the prominence given to each will set the character of the development. The buildings at the site must be well proportioned with careful consideration given to the horizontal or vertical character and the rhythm created by structure, opening or building features. There will be a mix of heights of dwellings on the site. However, in view of the site's location and prominence, no building on the site will be higher than two and a half storeys unless it can be demonstrated that three storey buildings would have no unacceptable impact on surrounding uses, the Conservation Area and the landscape.
- **Building materials:** Building materials should be of high quality. The brickwork and smooth and roughcast render should be responsive to their coastal setting with slate or slate substitute roofing material. Contemporary materials that create an appropriate character may also be suitable. The aim should be to incorporate a limited variety of materials to create an area with an identifiable character. Too many changes in material and colour between individual dwellings and across the site should be avoided: for example, one roofing colour should be agreed upon. Consistency in material selection for the whole site could be secured through the selection of an agreed palette of materials, to ensure continuity between different developers. Consideration should also be given to the use of sustainable materials.
- **Building features:** Building features should be responsive to the coastal context. Careful consideration will need to be given to the design of features to ensure that they are used in a contemporary way and not as a pastiche of historical styles. Roofscape is considered to be of particular importance given the landscape context of the site. The varied composition of roofscape when viewed from a distance and in terms of the change of level, should be carefully considered and roof pitches should be equal to or exceed 30 degrees.

5.4 Landscape and public realm design

The roundabout on Pentir y De would form the gateway to the site. Proposed planting along the short section of access road between the roundabouts would be of formal design to create an attractive, high quality entrance to the development. Contrasting colours, forms and textures of planting would highlight the locations of junctions and footpath links. The extent of grass verges would satisfy forward visibility highway requirements, for example on the approaches to roundabouts.

It is anticipated that the road network beyond these roundabouts would consist of two types, each having a different character. These would be the main access road, forming a loop with the development, and the residential area roads, which would be culs-de-sac.

The residential area roads would join the main access road at T-junctions and would be marked by a change in the landscape treatment. Within the development area, the impact of linear rows of houses could be reduced by alternating avenue tree planting, shrub planting and wide verges. Tree planted verges may be provided to one or both sides. All tree planting in the development would allow room for the full development of the crown circumference of the chosen species in the area where the tree is planted. Where there is no

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verge, tree planting may be located in the gardens. Tree Preservation Orders may be used to allow the trees to reach maturity without being removed. Access to housing would be direct off these roads and gateway features of walls or hedges could be used to define the access to small groups of houses and mews courts whilst satisfying the requirements of visibility splay criteria.

The main area of public open space shown on the development framework is located in the central part of the site. This space is ideally located to benefit from the mature setting created by retained vegetation. It is not necessary for significant areas of planting to complement this vegetation. However, it may be beneficial for tree planting along the perimeter of the space to define the boundary with the adjacent residential area. An avenue of trees around the perimeter of the open space could create a permeable edge to the space whilst giving a degree of separation from adjacent properties, although the open space would still be well overlooked for security reasons. It would also be noted that there is a practical restriction on tree planting on the site due to its proximity to Cardiff International Airport.

The provision for cycleways would generally be in association with footpaths. These may be immediately alongside or separated from the carriageway. The main route would be separate from the road network and would be an important route giving access to local amenities. It would link the proposed public open space with Rhose, heading north along the route of the existing public footpath, and west running parallel to the railway line. Where separate from the road system, such routes would be contained within a "green corridor". Existing tree groups along the route would be retained and additional occasional planting of trees and shrubs would assist in creating spatial variety. The route passes along the line of the existing track through the site where the retained vegetation would provide an enclosed character. In the two locations where the cycle route crosses the access road in the development, raised tables could be introduced in order to encourage drivers to slow down or give way. Additional footpaths may be provided, especially within the open space to link with footpaths beyond the site.

Focal spaces would be provided within the individual development sites as these can enhance the character and quality of the environment. These could be provided in a variety of ways, for example:

- The entrance to the individual development site from the main road network could be treated as a minor gateway, with buildings set back slightly and tree planting introduced. Alternatively, the buildings themselves could create an entrance feature.
- The arrangement of housing around local play areas could create an attractive communal space.
- Variation in building alignment to create small squares and mews would help articulate the street.
- Housing fronting onto landscaped "streets" could be a key feature that also helps reduce the dominance of vehicles.

5.5 Landscape details

Scrub / woodland edge planting would be planted as transplants or container grown shrubs with the aim of complementing the existing vegetation on site. In order to ensure that all planting is compatible with the local gene pool of the area, all woody plant species would 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). The species selection and maintenance of the planting areas would need to reflect the exposed coastal nature of the site, which would result in prolonged exposure to coastal winds.

Species rich/low maintenance grassland would be established along cycleway / footpath margins as an alternative to intensively managed grassland. Such an approach would also

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be preferable for the periphery of the public open space and along the margins of retained hedgerows. These areas would be established using soils with low nutrient levels, to encourage higher levels of species diversity and lower maintenance requirements. The seed mix would include approximately 25% grass species and 75% wild flower species. The mix would incorporate species appropriate to the site location and conditions and could potentially use a standard seed mix, available from one of the main seed suppliers.

5.6 Landscape aftercare and management 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. This would require the preparation of a management plan for the site, identifying a detailed programme of regular maintenance to ensure the successful establishment of new planting including fertiliser applications, weed control, replacement of plant failures, pruning, checking rabbit guards and protective fencing.

In terms of the existing vegetation, the objectives are to maintain the structure and diversity of the hedgerows and scrub, providing sufficient resources for maintenance and phased enhancement. Areas of retained vegetation would be managed to remove dead growth and undesirable species, which would enhance the setting for the development and increase biodiversity. Maintenance would also aim to manage specimen trees, or those with particular amenity value, to improve form and longevity.

The maintenance régime for the species rich grassland would aim to increase habitat and species diversity.

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6.0 CONCLUSION

The National Assembly for Wales, Bellway plc and Persimmon Homes (Wales) Ltd own or control land to the north of the railway line, off Pentir y De, Rhoose in the Vale of Glamorgan. An application for outline planning permission for the development of the whole site has been submitted. The application is accompanied by a master plan, illustrating the development concept for the site, and by a range of supporting documents, including an *Environmental Statement*, a *Transport Assessment*, a *Drainage Report* and this *Design, Access and Sustainability Statement*.

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.

The proposed development will incorporate a substantial element of public open space in the centre of the site, with footpath and cycle links to the existing community of Rhoose. The existing green lane through the site will be retained and existing hedgerows and trees 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 housing development (maximum 20 units).

This *Design, Access and Sustainability Statement* describes the development proposals for the site, sets out a vision and framework for the new residential development and provides urban and landscape design guidance for the proposed development. The applicants consider that the proposal is an acceptable form of development, the master plan for which has been carefully designed, in accordance with national and local planning policies and guidance, and that outline planning permission for the scheme should be granted.

**Appendix 1
Sustainability Checklist**

APPENDIX: SUSTAINABILITY CHECKLIST

Sustainability Measure	Tick box if you have taken this into account	If Yes, what measures are proposed? If not, or not applicable, state why not.
Site Assessment (pages 9-10)		
<i>Accessibility to neighbouring developments, local services and facilities.</i>	✓	The site is located in the village of Rhoose, which is located only 3.5km west of the town of Barry. Rhoose has a number of facilities including local shops, a primary school and other services. Barry has a very wide range of services and facilities. Cardiff International Airport Business Park is also located just to the north of the site. Rhoose is served by excellent public transport facilities with bus and rail links to Barry, Cardiff, Llantwit Major and Bridgend.

<p><i>Connections to existing pedestrian, cycle, rights of way and public transport routes.</i></p>	✓	<p>A multi-directional pedestrian and cycleway network will be provided within and through the development, which will retain and enhance the existing public right-of-way that runs north-south through the site. This network will provide easy access to village facilities, bus stops and the railway station.</p> <p>Rhoose is well served by public transport facilities with bus links to Barry, Cardiff, Llantwit Major and Bridgend. There are bus stops very close to the site and easily accessible from it. The Vale of Glamorgan railway line, which was re-opened in June 2005, includes a new railway station close to the site, to which a footpath/cyclway connection will be made. It provides an hourly service to Barry, Cardiff, Llantwit Major and Bridgend.</p>
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<p><i>Existing infrastructure and its capacity.</i></p>	<p>✓</p>	<p>Highways There is an existing, modern highway (Pentir y De) from which the principal vehicular access will be taken. Capacity analysis carried out as part of the <i>Transport Assessment</i> (Capita Symonds, January 2007) shows that the additional development traffic can be satisfactorily accommodated on the local highway network, subject to a minor lane improvement at the Porthkerry Road/Pentir y De junction that can be implemented within existing highway limits.</p> <p>Foul sewerage A new pumping station will be provided within the site, which will connect to the existing adopted public sewerage system.</p> <p>Surface water drainage The drainage strategy for this site is to intercept part of the existing greenfield run-off and channel it into a positive drainage system away from the site and its surroundings.</p> <p>Services All other services are readily available.</p>
<p><i>Topography and site orientation.</i></p>	<p>✓</p>	<p>Land within the site slopes gently to the south from 60m above Ordnance Datum (AOD) to around 40m AOD. This provides the site with a pleasant southerly aspect. Where appropriate, the orientation of the buildings should take advantage of this aspect and the views across the Bristol Channel.</p>

<p><i>Archaeological or historic interests.</i></p>	<p>✓</p>	<p>The impact of the proposed development on the archaeology of the site has been assessed and is reported in Chapter 6 of the <i>Environmental Statement</i>.</p> <p>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 survey and geophysical survey have revealed that there are no known archaeological features within the site and that there is low potential for any currently unknown sites to be present.</p>
<p><i>Boundary features, such as hedges, stone walls and tree lines.</i></p>	<p>✓</p>	<p>A detailed landscape appraisal of the site has been undertaken. Site boundaries are well defined by existing development: housing to the north and west; Pentir y De to the east; and the railway line to the south. Where there is existing housing, boundaries comprise garden curtilages. Hedgerows have been recorded by type. The development framework seeks to retain most of the existing hedgerows and mature trees on the site. Additional planting is proposed.</p>

<p><i>Local building characteristics and important views.</i></p>	<p>✓</p>	<p>The character of existing housing around the site is very varied and does not provide a strong or unified basis for building design. Advice on building design (and other design elements) is provided in the <i>Design, Access and Sustainability Statement</i>.</p> <p>The site is enclosed by existing built development to the north, south and west. An analysis of views into and from the site has been undertaken and is reported in Chapter 9 of the <i>Environmental Statement</i>. Where appropriate, the orientation of buildings should take advantage of the views obtainable across the Bristol Channel.</p>
<p><i>Ecological impacts assessed</i></p>	<p>✓</p>	<p>The impact of the proposed development on the ecology of the site has been assessed and is reported in Chapter 8 of the <i>Environmental Statement</i>.</p> <p>The site does not contain or form any part of any area that has been designated for its nature conservation interest.</p> <p>Extensive ecology surveys have been undertaken. Hedgerows are the most ecologically valuable habitat on the site, providing food and shelter to nesting birds, small mammals, reptiles and invertebrates. Chapter 8 contains recommendations designed to mitigate the impact of the development.</p>

<p><i>Landscape/amenity impacts including trees and green spaces</i></p>	<p>✓</p>	<p>The impact of the proposed development on the landscape of the site and its surroundings has been assessed and is reported in Chapter 9 of the <i>Environmental Statement</i>.</p> <p>The most sensitive landscape receptors are the mature trees and hedgerows on the site, which are defining features of its landscape character. Existing trees and hedgerows will be retained wherever practicable and supplemented by new planting in key locations.</p>
<p>Site Layout (page 10)</p>		
<p><i>Orientation of buildings utilises the benefits solar gain.</i></p>	<p>✓</p>	<p>The gently sloping, southerly aspect of the site offers an excellent opportunity to design a layout and to orientate houses that are more energy efficient and with passive solar gain being achievable.</p>

<p><i>Infrastructure layout accords to the transport user hierarchy.</i></p>	<p>✓</p>	<p>The proposed highway layout has been designed in consultation with the highway authority.</p> <p>The layout provides for a loop system, linking the western side of the site to the eastern side in two locations. From the proposed roundabout on Pentir y De, there is a requirement for a short (approximately 125m) length of 7.3m wide carriageway which will be capable of accommodating a bus service and will not have any direct frontage access. From this point onwards, a hierarchy of roads, where direct frontage access will be permitted, will lead from a second proposed roundabout. A secondary, emergency access is proposed from Porthkerry Road.</p> <p>Comprehensive provision has been made for footpaths/cycleways within the site, linking to local facilities and public transport services.</p>
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<p><i>Maintains or improves existing pedestrian and cycle network</i></p>	<p>✓</p>	<p>The existing public right-of-way, which follows the track through the centre of the site, will be retained on its existing alignment and enhanced. It will form the focus of the pedestrian/cycleway network and will provide access both within the site and between the site and Rhoose village and the bus stops on Porthkerry Road</p> <p>A new footpath/cycleway will be provided in a buffer alongside the railway and will connect the site to the railway station and Pentir y De. The 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 that will follow Porthkerry Road to the north.</p> <p>The pedestrian and cycle network within the development will therefore afford good access to community facilities, local amenities and public transport.</p>
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<p><i>Allow for easy and safe access to public open spaces?</i></p>	<p>✓</p>	<p>The proposed development incorporates a large area of public open space containing recreation facilities. It is strategically located adjacent to the existing public right-of-way, in a central position on the site, where it will be easily accessible to the community as a whole as well as to future residents of development on the site.</p> <p>The public open space has been consolidated into one main area for ease of maintenance and so as to provide a range of facilities. It is overlooked by housing to give easy supervision and security surveillance.</p> <p>The system of paths for cyclists and pedestrians has been designed to link the individual parts of the development, conveniently and safely, with the amenities available within the development, such as the public open space area.</p>
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<p><i>Minimise the opportunities of crime?</i></p>	<p>✓</p>	<p>Legibility will be utilised as the main method of combating any crime within the development. This is created by:</p> <ul style="list-style-type: none"> • A clear distinction between private and public space, with private gardens to the rear of dwellings. • A positive relationship between built form and public areas. Building frontages, windows and entrances will overlook streets and public spaces in order to maintain surveillance. • In addition, the location and design of landscaping adjacent to buildings and walls will be carefully considered in terms of security provision. • Easy and natural supervision of public open space from adjacent highways and houses.
<p><i>Mixed-use development proposed.</i></p>	<p>✓</p>	<p>The proposal includes for the on-site provision of public open space and recreation facilities as well as for housing. The development framework allows for easy access to existing community facilities.</p>

Transport and Movement (pages 10-11)		
<i>Safe movement for children, pedestrians and disabled persons.</i>	✓	<p>The development framework incorporates an off-street footpath and cycleway network, which will provide safe and easy links to village facilities, the local primary school and public transport.</p> <p>The road network within the site is laid out to provide a loop system, with frequent changes in direction in order to help slow traffic. The design, surface treatment and selection of finishes will clearly identify that it is the main route around the site, in order to assist the orientation of drivers, cyclists and pedestrians and to promote safe movement within the development.</p>
<i>Provisions made for cyclists e.g. secure cycle storage.</i>	✓	<p>Secure cycle storage will be provided privately within each house plot or apartment block.</p> <p>A cycle network is provided within the site, creating routes to community facilities within the site as well as links to other cycle networks outside the development site.</p>
<i>Encourages public transport use.</i>	✓	<p>Residents of the site will be facilitated to use and support local public transport services through easy and safe footpath/cycleway connections to the nearby bus stops and railway station.</p>

<i>Maintain the transport user hierarchy.</i>	✓	The development framework has been designed to encourage the use of available public transport services and to promote walking and cycling.
Sustainable Energy Use (pages 11-13)		
<i>Undertake an Eco-Homes, BREAM, or NHER standards assessment to determine the overall environmental performance of the proposal.</i>	✓	An eco-homes assessment will be carried out.
<i>An EcoHomes Assessment is required for affordable housing funded through Social Housing Grant</i>	N/A	Not known at this stage.
<i>BREEAM Assessment is required for WAG procured buildings.</i>	N/A	BREEAM applies to non-residential buildings.
<i>Passive solar design.</i>	✓	The gently sloping southerly aspect of the site offers an excellent opportunity to design a layout and to orientate houses that are more energy efficient with passive solar gain being achievable.
<i>Natural daylighting</i>	✓	All habitable rooms will have natural daylight and mainly will be south facing.

<i>Natural ventilation</i>	✓	All habitable rooms will be provided with opening windows.
<i>Reduce energy consumption, e.g. installation of A rated appliances, condensing boilers etc.</i>	✓	'A' rated
<i>Provision of internal drying space or external communal drying area.</i>	✓	All houses on the site will have gardens with space for external clothes lines or carousels may be provided.
Renewable Energy Sources (pages 13-15)		
<i>Solar Photovoltaics (PV's)</i>	✓	Not currently proposed
<i>Solar Water Heating</i>	✓	Not currently proposed
<i>Small scale wind</i>	✓	The use of wind turbines is not proposed on this site.
<i>Biomass</i>	✓	The use of biomass is not proposed on this site.
<i>Combined Heat and Power (CHP)</i>	✓	Not currently proposed
<i>Geo thermal</i>	✓	Not currently proposed
Energy Efficiency and Material Choice (pages 15)		
<i>Use reclaimed or recycled materials.</i>	✓	It is not proposed to use reclaimed or recycled materials for this development. There is no on-site resource that may be utilised.
<i>Materials sourced from sustainable resources, e.g. FSC certified timber.</i>	✓	FSC certified timber will be used.
<i>Use natural energy efficient materials, e.g. timber, stone etc.</i>	✓	Materials will be locally sourced wherever possible.

<i>Sustainable construction techniques, e.g. straw bale, green roofing etc.</i>	✓	These techniques are not considered appropriate for use on this site.
Street Lighting (page 15)		
<i>Low energy street and other external lighting.</i>	✓	The street lighting will be designed to meet the highway authority's requirements for adoption.
<i>Street lighting designed to reduce light pollution and other environmental impacts.</i>	✓	As above.
Water Conservation (page 15-16)		
<i>Installation of dual water supplies e.g. rainwater run-off e.g. for toilets and/or grey water reuse.</i>	✓	Not currently proposed
<i>Installation of low/dual flush toilets.</i>	✓	Yes.
<i>Installation of rain water collectors for landscape maintenance and or domestic garden use</i>	✓	Yes: rain water butts will be provided with each property.
<i>Installation of water efficient A rated white goods.</i>	✓	Where these are to be provided by the site developers, A-rated white goods will be used.
<i>Use natural techniques, such as a reed bed filtration system to treat wastewater.</i>	✓	The use of reed beds, for example, is not considered appropriate for this site, where the intention is to intercept part of the existing greenfield run-off and channel it into a positive drainage system away from the site and its surroundings.
Sustainable Drainage (pages 17-18)		

<i>Installation of Sustainable Urban Drainage.</i>	✓	The use of sustainable urban drainage is not considered appropriate for this site, where the intention is to intercept part of the existing greenfield run-off and channel it into a positive drainage system away from the site and its surroundings.
<i>Soakaways</i>	✓	The use of soakaways is not considered appropriate for this site, due to local geology and topography.
<i>Permeable surfacing</i>	✓	The use of permeable surfacing is not considered appropriate for this site, due to local geology and topography.
<i>Swales and Basins</i>	✓	The use of swales and basins is not considered appropriate for this site, due to local geology and topography.
<i>Infiltration Trenches and Filter Drains</i>	✓	The use of infiltration trenches and filter drains is not considered appropriate for this site, due to local geology and topography.
<i>Ponds and Wetlands</i>	✓	No ponds or wetlands are proposed on this site.
<i>Onsite Stormwater Detention</i>	✓	Surface water runoff will be discharge to a positive drainage system, possibly leading to a sea outfall. Hence on-site surface water detention will not be required.

<i>Green Roofs</i>	✓	The use of green roofs is not proposed for this site.
Waste Management (pages 18-19)		
<i>Internal recycling/separation facilities.</i>	✓	The development will comply with the Building Regulations in force at the time and with the Council's own waste management protocol.
<i>Communal external recycling/separation facilities.</i>	✓	A community recycling site of approximately 150m ² will be provided within the site, convenient to the site's main entrance. This will provide an excellent on-site opportunity for the recycling of paper, cans, glass, textiles and plastic. The Council has also advised that the road layout of the development must give consideration as to how and where general household waste will be collected.
<i>Re-use/recycle existing building materials.</i>	✓	There are no existing buildings, hardstandings or foundations on the site which may be recycled for future use.
<i>Implementation of an on site waste management scheme during construction.</i>	✓	Yes.

Landscape, Trees and Ecology (pages 19-19)		
<i>EIA or other ecological assessment/surveys conducted.</i>	✓	<p>A Phase 1 extended habitat survey, including a walk-over survey, has been carried out, together with a hedgerow assessment under the <i>Hedgerow Regulations 1997</i>.</p> <p>Subsequent, more detailed protected species and other ecology surveys were carried out in 2004-5 and 2007-8 and formed the basis for the ecology assessment included in the <i>Environmental Statement</i>.</p>
<i>Retention of existing trees as part of the site layout/landscaping scheme.</i>	✓	Existing trees and hedgerows within the site will be retained wherever practicable and additional planting of trees and shrubs will assist in strengthening those and in creating a landscaped setting for the development.
<i>Incorporation of ecological mitigation or compensation measures.</i>	✓	Mitigation measures will be incorporated within the design and development of this site and details of such measures are described in Chapter 8 of the <i>Environmental Statement</i> .
<i>Creation of new wildlife habitats.</i>	✓	There will be no necessity to create any new wildlife habitats, but existing reptiles on part of the site will be translocated to the buffer alongside the railway line.

<i>Inclusion of post-development management, monitoring and review.</i>	✓	Translocation of reptiles will necessitate short-term post-development monitoring.
<i>Retention/enhancement of existing landscape features.</i>	✓	The site currently benefits from existing landscape features, which will be retained as “green assets” for the proposed development including 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.
<i>Plant locally sourced indigenous trees and plants.</i>	✓	To ensure that all planting is compatible with the local gene pool of the area, all woody plant species will be of local provenance as outlined in <i>Forest Practice Note No. 8: Using Local Seed Sources for Planting Native Trees and Shrubs</i> (Forestry Commission, 1999).