

Barry Waterfront

Sustainability Statement

August 2009

Appendices

Notice

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Contents

Section	Page
Appendices	
Appendix A Development of Sustainability Appraisal Framework	1
A.1 General sustainability requirements for Barry Waterfront	2
A.2 Sustainability Baseline	20
A.3 Environmental	31
A.4 Access to Services and Facilities: Detailed Assessment	46
Appendix B Final Sustainability Appraisal Framework	54
Appendix C Assessment of Masterplan: First Iteration	117
C.1 Assessment of Masterplan: First Iteration	118
C.2 Conclusions & Recommendations	133
Appendix D Assessment of Final Masterplan	137
D.1 Assessment Results Table	138

Appendix A Development of Sustainability Appraisal Framework

A.1 General sustainability requirements for Barry Waterfront

Sustainability Principles for Development

- A.1.1 Table A.1 demonstrates the requirements of the relevant guidance identified through the policies and plans review, and the subsequent comparison of these to local conditions from the analysis of baseline data and discussions with the Vale of Glamorgan Council. This has allowed the identification of a range of locally specific recommendations in order to maximise the sustainable development potential of the site, as well as meeting the aspirations of the Consortium in respect of the sustainability credentials sought for the development.

Ecohomes

Background

- A.1.2 Ecohomes was developed and launched in April 2000 by the Centre for Sustainable Construction at the Building Research Establishment (BRE) with support from NHBC (National House Builders Council). Its development was steered by a committee of industry representatives and environmental experts.
- A.1.3 Ecohomes is an independent, transparent, environmental labelling scheme for housing. The scheme covers houses and apartments, either at the design stage or as part of major refurbishment.
- A.1.4 Ecohomes assesses the environmental quality of a development by considering the broad concerns of climate change, use of resources, pollution, and impacts on bio-diversity. These concerns are balanced against the need for a high quality internal environment.

Issues

- A.1.5 The issues assessed by Ecohomes are grouped into the seven category areas listed below:
- Energy: Operational energy and CO₂;
 - Transport: Location issues related to transport;
 - Pollution: Air and water pollution (excluding CO₂);
 - Materials: Environmental implications of materials selection, recyclable materials;
 - Water: Consumption issues;
 - Ecology and Land Use: Ecological value of the site, planting and landscaping;
 - Health and Well-Being: Internal and external issues relating to health and comfort; and
 - Management: Construction site impacts and home security issues.

Scoring System

- 1.1 Credits are available for each issue meeting the specified levels of performance. The number of credits available in each category does not necessarily reflect the relative importance of the issues being assessed; however, before the final score is calculated, each of the scores in the eight category areas have a weighting factor applied.
- 1.2 The Ecohomes Scale runs from '**PASS**' to '**EXCELLENT**' as depicted overleaf.
- 1.3 The final rating is determined by the Ecohomes assessor and quality assured and certified by BRE.

Pass (36%)	Most developments should be able to achieve this with minor design/specification changes at a minimal additional cost.
Good (48%)	The developer has been able to demonstrate good practice in most areas.
Very Good (58%)	Developments pushing forward the boundaries of environmental

Pass (36%)	Most developments should be able to achieve this with minor design/ specification changes at a minimal additional cost.
	performance will achieve this.
Excellent (70%)	Developments demonstrating exemplary environmental performance across the full range of issues will achieve this.

Table A.1 - General Sustainability Requirements arising from relevant plans, policies and programmes

	General Requirement	Source Document
Ecohomes/ BREEAM		
1.	Requirement for site to support the Wales 2011 carbon zero target. (National Assembly for Wales (NAFW) speech reference) The Council is one of 45 new local authorities participating in the fifth phase of the Carbon Trust's Local Authority Carbon Management. (LACM)	http://www.planningportal.gov.uk/english/government/en/1115314843329.html http://www.carbontrust.co.uk/News/presscentre/2007/110507_LACM_phase5.htm
Management		
2.	Ecohomes rating Man1: Home User Guide Provision of a guide for each home to cover 'non-technical' guidance on environmental performance of home and in relation to site and surroundings.	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
3.	Ecohomes rating Man2: Considerate Constructors Commitment to comply/exceed best practice site management principles.	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
4.	Ecohomes rating Man3: Construction Site Impacts Evidence that demonstrates a commitment and a strategy to monitor, sort and recycle construction waste on site AND Evidence that demonstrates that 2 or more of a-f listed below are achieved. OR Evidence that demonstrates that 4 or more of a-f are achieved: Monitor and report CO2 or energy arising from site activities Monitor and report on CO2 or energy arising from transport to and from site Monitor water consumption from site activities Adopt best practice policies in respect of air (dust) pollution arising from site Adopt best practice policies in respect of water (ground and surface) pollution occurring on site 80% of site timber is reclaimed, reused or responsibly sourced.	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2

Renewable Energy Generation		
5.	<p>Ecohomes rating Pol4: Renewable and Low Emission Energy Source</p> <p>Where evidence provided demonstrates that a feasibility study considering renewable and low emission energy has been carried out and the results implemented</p> <p style="text-align: center;">AND</p> <p>Where evidence provided demonstrates that the first credit has been achieved and 10% of total energy demand for the development is supplied from local renewable, or low emission, sources (in line with the recommendations of the feasibility study)</p> <p>Where evidence provided demonstrates that the first credit has been achieved and 15% of total energy demand for the development is supplied from local renewable, or low emission energy, sources (in line with the recommendations of the feasibility study)</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
Efficiency and Climate Change Low/ Zero Carbon Energy Sources and Systems		
6.	<p style="text-align: center;">Barry SPG:</p> <p>The orientation and topography of buildings and their scale need to address local environmental conditions. The following should be integrated and maximised into buildings:</p> <p style="text-align: center;">Passive Solar Design Natural Daylighting and ventilation</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
7.	<p>Developers are encouraged to improve the energy efficiency within a building: Providing energy efficient boilers – condensing boilers are the most efficient “conventional” system</p> <p>Ecohomes rating Pol2: NOx emissions (heating and hot water systems)</p> <p>95% of dwellings throughout the development must be served by heating and hot water systems with an average NOX emission rate of less than or equal to the levels listed below.</p> <p style="text-align: center;">Less than or equal to 100 NOx mg/kWh Less than or equal to 70 NOx mg/kWh Less than or equal to 40 NOX mg/kWh</p>	<p>BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2</p> <p>The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)</p>
8.	<p>Ecohomes rating Ene4: Eco Labelled white goods</p> <p>Provision of eco labelled white goods with the following energy ratings: All fridges, freezers, fridge-freezers with an A* rating</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2

	<p>All washing machines, and dishwashers where supplied, with an A rating and washer dryers and tumble dryers with a rating of B or higher</p> <p>OR</p> <p>No white goods provided but info on eco labelling</p>	
9.	<p>Ecohomes rating Ene5: Internal lighting (low energy lights)</p> <p>Where 75% dedicated low energy lights have been specified</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
10.	<p>Ecohomes rating Ene6: External lighting (CFLs)</p> <p>Space Lighting</p> <p>All space lighting is specifically designed to accommodate only compact fluorescent lamps (CFL)</p> <p>Security Lighting</p> <p>All intruder lighting to be 150 watts and be fitted with PIR and day light sensor and</p> <p>All other type of security lighting to accommodate CFLs or fluorescent strips only and be fitted with dawn to dusk sensors or timers.</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
11.	<p>Ecohomes rating Ene3: Drying space</p> <p>Provision of drying space</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
12.	<p>It is recommended that the decision on which materials are to be used is considered early in the design process and that choice should be made in terms of quality, durability, and appropriateness to the context and also the amount of embodied energy within that material.</p> <p>Ecohomes rating Mat1: Environmental impact of materials</p> <p>The following elements obtaining an A rating from the Green Guide for Housing:</p> <p>Roof</p> <p>External walls</p> <p>Internal walls- party walls and internal partitions</p> <p>Floors</p> <p>Windows</p> <p>External surfacing</p>	<p>The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011</p> <p>Supplementary Planning Guidance: Sustainable Development (2006)</p> <p>BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2</p>

	Boundary protection	
13.	<p>Ecohomes rating Mat2: Responsible sourcing of materials: basic building elements Where the majority of the materials in the following basic building elements are responsibly sourced:</p> <p style="text-align: center;">Frame Ground Floor Upper Floors (including any loft boarding) Roof (structure and cladding) External Walls (including external cladding) Internal Walls (including internal partitions) Foundations/ substructure Staircase (including the tread, rises and stringers)</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
14.	<p>Ecohomes rating Mat3: Responsible sourcing of materials: finishing elements Where the majority of materials in the following secondary building and finishing elements are responsibly sourced:</p> <p style="text-align: center;">Stair (including handrails, balustrades, banisters, other guarding/ rails (excluding staircase)) Window (including sub-frames, frames, boards, sills) External and internal door (including sub-frames, frames, linings, door) Skirting (including architrave, skirting board and rails) Panelling (including any other trim) Furniture (including fitted; kitchen, bedroom, and bathroom) Fascias (soffit boards, bargeboards, gutter boards, others) Any other significant use</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
15.	<p>Ecohomes rating Ene1: Dwelling Emission Rate (SAP 2005 CO₂ emissions) Credits are awarded to achieve SAP 2005 CO₂ emissions as follows: (minimum points): less than or equal to 40kg/m²/yr (maximum points) 'true zero' carbon solutions: less than or equal to -10kg/m²/yr</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2

16.	<p>Ecohomes rating Ene2: Building Envelope Performance (thermal performance based on Heat Loss Parameter) Up to 2 credits awarded where thermal performance based on the Heat Loss Parameter (HLP) method meets the following requirements:</p> <p style="text-align: center;">For new build: Where the HLP is less than or equal to 1.1 W/M2K</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
17.	<p style="text-align: center;">Ecohomes rating Pol1: Insulation ODP and GWP</p> <p>Specifying insulating material, that avoid the use of ozone depleting substances and have a global warming potential (GWP) of less than 5 or more (and an ODP of zero), in either manufacture or composition, for the following elements:</p> <p style="text-align: center;">Roof (incl. roof hatch) Wall- internal and external (incl. all doors, lintels and all acoustic insulation) Floor (incl. foundations) Hot water cylinder (incl. pipe insulation and other thermal store)</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
18.	<p>Reuse of brownfield land and remediation-reuse of contaminated land at high density development (see other themes)</p> <p style="text-align: center;">UDP: 4.4.2</p> <p style="text-align: center;">South Quay: remedial works will be necessary</p> <p>UDP: (5.4.8) it is recommended that further development of this site is subject to consultation with the Environment Agency given that part of the site lies within 250 metres of a former landfill site.</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001
Waste Management: Integral recycling and composting facilities		
19.	<p style="text-align: center;">Ecohomes rating Mat4: Recycling facilities</p> <p>Recycling of household waste (max points) Provision of internal AND external storage (or LA collection) SD SPG: Take account of the Council's recycling targets</p>	<p>BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2</p> <p>The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)</p>
20.	<p style="text-align: center;">Reuse recycle existing building materials</p> <p style="text-align: center;">Implementation of on site waste management during construction</p> <p>Developers should at a very early stage, consider opportunities for reusing and recycling waste both on and off</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)

	site	
21.	<p>UDP Policy 13: Development proposals which encourage sustainable principles for waste disposal based on a hierarchical approach of:</p> <p style="text-align: center;">Waste minimisation/ avoidance; Re-use of waste; Waste recycling or recovery (including waste conversion to energy); and Waste disposal land fill with minimal environmental impact; will be favoured.</p> <p style="text-align: center;">Municipal Waste Management Strategy: Enhancement of the network of 'Bring Sites', to include the provision of a number of strategically located community-based recycling centres.</p>	<p>The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 The Vale of Glamorgan Municipal Waste Management Strategy (2004)</p>
Street lighting to minimise pollution		
22.	The use of LEDs for illuminated road furniture is specified. High accuracy photoelectric cells could also be used to switch lights on and off.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
23.	Directing light more accurately on designated areas, without any up lighting, will reduce glare (light pollution) and also energy consumption as making fewer lights more focused will remove the need for more streetlights.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
Water conservation (Reduce; Re-use; Recycle)		
24.	<p>Ecohomes rating Wat1: Internal potable water use (max points) less than or equal to 32m³ per bedspace per year (8.33)</p> <p>Installation of water efficient fixtures such as low/dual flushing toilet systems, or waterless urinals and toilets (SD SPG)</p> <p>Incorporate dual water supplies wherever possible, for example grey water for toilet flushing; landscaping, on-site water storage for fire fighting (SD SPG)</p> <p>Installation of low water use appliances such as low water use washing machines and dishwashers (A rated white goods) (SD SPG)</p>	<p>BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2</p> <p>The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)</p>

25.	Ecohomes rating Wat2: External potable water use Rainwater collection system for watering gardens and landscaped areas (1.67)	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2 The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
26.	Indigenous planting schemes that include drought tolerant species to reduce the need for watering	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
27.	Use of local groundwater sources for purposes such as cooling in air-conditioning plants	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
Improve Water Quality		
28.	Need to improve water quality.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
Sustainable Drainage and Flood Risk		
29.	Developers are encouraged to work with the Council and the Environment Agency to incorporate SUDS in all new development to reduce the risk of flooding, the pollution to watercourse and to minimise negative impacts on biodiversity. This should be considered at the earliest stages of master planning or layout design. Early consultation with the Council is advised. The Council will make use of planning conditions or legal agreements to secure implementation of SUDS where appropriate. Examples of techniques include: Soakaways Permeable Surfacing	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006); BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2

	<p>Swales and Basins Infiltration Trenches and Filter Drains Ponds and Wetlands On site Stormwater Detention (OSD) Reed Bed Filtration Green Roofs Ecohomes rating Pol3: Reduction in surface runoff</p> <p>Where rainwater holding facilities and/or sustainable drainage techniques are used to provide attenuation of water run-off to either natural watercourse and/or municipal drainage systems, by 50% in areas of low probability of flooding, 75% in areas of medium flood risk, and 100% in areas of high flood risk, at peak times from:</p> <p>Hard surface runoff Roof runoff</p> <p>(where a statutory body requires a greater attenuation then the higher requirement should be met in order to achieve these credits)</p>	
30.	<p>Ecohomes rating Pol5: Flood Risk Mitigation</p> <p>Where evidence provided demonstrate that the assessed development is located in a zone defined as having a low annual probability of flooding</p> <p>OR</p> <p>Where evidence provided demonstrate that the assessed development is located in a zone defined as having medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the site's location.</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
Biodiversity and Landscape		
31.	<p>Supply of survey data and other ecological information to accompany planning applications where appropriate: EIA of other ecological assessments and surveys Minimise effect on ecology during construction Securing post-development management, monitoring and review for biodiversity on development sites Use of locally sourced plants, which are appropriate to the local ecology of the site, when creating/ restoring habitat features or designing landscaping schemes. Ecohomes rating Eco1: Ecological value of site</p>	<p>The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006) BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2</p>

	<p>Building on land which is inherently of low ecological value</p> <p>Ecohomes rating Eco2: Ecological enhancement</p> <p>Enhancing the ecological value of the site through consultation with an accredited expert</p> <p>Ecohomes rating Eco3: Protection of ecological features</p> <p>Ensuring the protection of any existing ecological features on the site</p> <p>Incorporating appropriate measures for mitigation and compensation into development</p> <p>Ecohomes rating Eco4: Change of ecological value of site (maximum points) A change of greater than +9 species</p>	
32.	<p>Ecohomes rating Eco5: Building Footprint</p> <p>Where the combined Floor area: Footprint ratio for all houses on the site is greater than 2:5:1</p> <p>AND</p> <p>Where the total combined Floor area: Footprint ratio for all flats on the site is greater than 3:5:1</p> <p>OR</p> <p>Where the total combined Floor area: Footprint ratio for all dwellings on the site is greater than 3:5:1</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
Geology		
33.	<p>Small areas with traces of former saltmarsh channels locally survive and conservation of such areas, including their sediment record of Quaternary climate change, could ensure that total loss of this record does not occur.</p> <p>Ensure that no surviving and potentially conservable features of geological or geomorphological significance are lost/damaged due to development or reclamation, etc, by implementing a RIGS survey to identify key sites, and adopt a strategy of temporary exposure recording to ensure that significant geological features exposed in temporary excavations are recorded</p>	Landmap
Local Character and Urban Design		
34.	<p>New development should develop an individual identity that contributes to existing Barry character and there should be links between built heritage (traditional built form, character and detailing) and a visionary future.</p> <p>Environmental Quality should be high.</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
35.	<p>Innovative design of public buildings as a powerful regenerative tool</p> <p>Similarly high aspirations should apply to local buildings which have a more direct impact on peoples' lives.</p>	Welsh Assembly Government, Planning Policy Wales: Technical Advice Note 12: Design (2002)

36.	Many structures and artefacts representing dockside heritage could be retained within new development.	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
37.	Noise abatement and privacy need to be addressed through design and construction techniques. Mixed uses should relate well to one another physically and offer opportunities for visual interest and originality. High density development should be innovative and high quality to create the perception of lower density.	Welsh Assembly Government, Planning Policy Wales: Technical Advice Note 12: Design (2002)
Landscape		
38.	Undertaking strategic landscape assessment : At the outset to define the capacity of the natural environment to absorb development. It is important that the qualities of the urban landscape are appreciated and considered in the design of development including its contribution to views and links to the open countryside (as well as internal important views- Barry SPG)	Welsh Assembly Government, Planning Policy Wales: Technical Advice Note 12: Design (2002) The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
39.	Barry SPG: Trees and structure planting should be used to frame vistas and enhance open spaces and the scale of buildings. (also consider seasonal variation and local suitability of species) Thompson Street and Gladstone Link road: best opportunities to display a coordinated approach to tree planting. SD SPG: Where landscape schemes are appropriate, the developer must show that the planting proposals are sustainable and can be easily maintained. Where applicable a landscaping scheme must illustrate what existing landscaping is to be retained (including protection measures) together with full details of new planting.	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006) The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006);
Mix of Uses and higher densities: Reduce the need to travel and promote public transport as an integral part of design		
40.	Mixed uses within a development can make the most of opportunities for higher densities and intensive activity at locations with good access to public transport as well as reducing the need to travel. Ecohomes Rating Tra4: Home Office (provision of space) Provision of space, and services, for a home office	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006) BREEAM: Ecohomes Pre Assessment

		Estimator – 2006 / 1.2
Design for pedestrian priority: Transport Hierarchy and Permeability		
41.	<p>User Hierarchy:</p>	<p>Welsh Assembly Government, Communities and Local Government, Department for Transport, Manual for Streets (March 2007)</p>
i. Pedestrians Convenient routes, which are easy, safe and attractive to use through		
42.	<p>Strong Links to the Town Centre/ Integration with existing settlement</p> <p>The links between the Waterfront and Barry Town and Barry Island must be direct, broad, and should accommodate generous pedestrian and cycle access.</p> <p>Pedestrian and Cycle routes should connect to existing routes beyond the immediate development</p>	<p>The Vale of Glamorgan Adopted Unitary Development Plan</p> <p>1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)</p>
43.	<p>Manual for Streets:</p> <p>Reflecting and supporting pedestrian desire lines in networks and detailed designs</p> <p>Creating networks of streets that provide permeability and connectivity to main destinations and a choice of routes (These should be defined through a legible built form and open space system that enables ease of orientation and identification. (Barry SPG))</p> <p>SD SPG:</p> <p>There should be routes to local facilities, public transport nodes; open spaces; long distance footpaths</p> <p>Disabled access routes</p> <p>Provide conveniently located pedestrian crossing points on busy sections of road</p> <p>Clear signposting and lighting</p> <p>Avoid gradients of over 1:20</p>	<p>Welsh Assembly Government, Communities and Local Government, Department for Transport, Manual for Streets (March 2007)</p> <p>The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)</p> <p>The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)</p>

	Provide wayside seating at appropriate locations	
44.	Traffic calming measures would help add security for pedestrians Traffic calming techniques must be designed into a development from the initial layout or master planning stage	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
45.	SD SPG: Home Zones are encouraged in both the planning and transport policies for new developments and existing streets. They are distinguished from other streets by having signed entry and exit points, which indicate the special nature of the street. Manual for Streets advocates: moving away from hierarchies of standard road types based on traffic flows and/or the number of buildings served designing to keep vehicle speeds at or below 20 mph on residential streets unless there are overriding reasons for accepting higher speeds	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006) Welsh Assembly Government, Communities and Local Government, Department for Transport, Manual for Streets (March 2007)
ii. Cyclists: Direct, safe and attractive routes		
46.	Safe Cycle paths need to be integrated into the road system. Segregated cycling routes should be accommodated within distributor roads Provide joint pedestrian and cycle facilities only in circumstances where separate facilities for cyclists within the carriageway are not feasible, although pedestrian safety must not be compromised. Ensure that routes are as continuous as possible, avoiding frequent stops or diversions.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
47.	SD SPG: Link routes within developments to the wider cycle network.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
48.	Ecohomes Rating Tra2: Cycle Storage Provision of cycle storage for: 50% of dwellings OR 95% of dwellings	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2 The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development

	SD SPG: Provision of prominent, secure cycle parking which should be close to building entrances or inside buildings and should avoid the need to carry cycles over steps.	(2006)
iii. Public Transport		
49.	Ecohomes Rating Tra1: Public Transport 80% of the development within 500m of a 15 min peak and a half hourly off peak service SD SPG: Convenient access for pedestrians should be provided with bus stops located no more than 400m from residential properties. Ease of access to rail facilities should be ensured.	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2 The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
50.	Adequate access for bus services and service vehicles should be provided. This should not, however, be at the expense of the safety and free movement of pedestrians and cyclists.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
51.	Passenger facilities, such as bus shelters and timetable information should be provided, in consultation with the Council. Other public transport enhancements may be required as part of the Council's Bus Strategy.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
iv. Private Motor Vehicles		
52.	New roads serving development should be designed for an average speed of 20mph or less, particularly at junctions and pedestrian/ cycle crossings. It should also be ensured that the transport user hierarchy is not sacrificed e.g. by limiting the use of roundabouts as these create difficult crossing points for pedestrians and cyclists.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
53.	Barry SPG: Large and extensive car parking areas should be avoided or suitably landscaped and smaller car parking areas should be encouraged. SD SPG:	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006); The Vale of Glamorgan Adopted Unitary

	Reduced standard parking requirements in developments that are well served by public transport or accessible to a range of services and facilities (e.g. town centres)	Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
54.	Residential parking should ideally be situated at the rear of properties to allow for pedestrian friendly site layout.	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006)
Affordability of housing/ mix of type and tenure- community needs (social mix)		
55.	Requirement of 30% affordable housing	The Vale of Glamorgan Local Development Plan Draft Preferred Strategy December 2007
Public Open Space/ Green space Access		
56.	The extensive waterside edge should act as a focal point for an attractive open space network.	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
57.	Provide network of greenspace/ wildlife corridors across Barry, to link Barry Island, the waterfront and the main town. Could act as pedestrian routes also.	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001 Supplementary Planning Guidance, Barry Development Guidelines (2006)
58.	<p>Policy REC 3 seeks open space of 2.43ha per 1000 projected population. Of which 0.7ha per 1000 is for children's playing space and 1.7ha per 1000 for outdoor sport. The Council has calculated the requirement at Barry Waterfront to be:</p> <p style="text-align: center;">3.5ha children's play space 8.5ha outdoor sport.</p> <p>1.25ha of the children's play space should specifically be for outdoor play equipment. The remaining 2.3ha of children's play space is for designated land that provides the opportunity for casual and informal children's recreation within housing areas</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001
Inclusive Design		
59.	Design solutions should provide access to the widest range of people possible.	Welsh Assembly Government, Planning

	Particular care should be taken to ensure that the design of infrastructure avoids severance and fragmentation of communities	Policy Wales: Technical Advice Note 12: Design (2002)
Design for Change		
60.	Design for change by promoting adaptable development that can respond to social, technological, economic and environmental conditions over time Block layouts maximise future adaptability	Welsh Assembly Government, Planning Policy Wales: Technical Advice Note 12: Design (2002)
Design out Crime		
61.	SD SPG: Site layout should be designed with safety in mind, and also provide full accessibility for all pedestrians as easy movements through the site can provide natural surveillance to discourage crime. Pedestrian and cycle access should be overlooked. Ecohomes rating Man4: Security Commitment to work with an Architectural Liaison Officer and achieve Secured by Design Award Security Standards for external doors or windows to achieve a minimum of either: LPS1175SR1 (all doors and windows) OR PAS24-1 (all external pedestrian door-sets falling within the scope of PAS24-1) ANDBS7950 (all windows falling into the scope of BS7950)	The Vale of Glamorgan Adopted Unitary Development Plan 1996 – 2011 Supplementary Planning Guidance: Sustainable Development (2006) BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
Health and well being		
62.	Ecohomes rating Hea1: Daylighting Provision of adequate daylighting, according to BS8026:pt2 in: The kitchen Living rooms, dining rooms and studies View of sky in all above rooms	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
63.	Ecohomes rating Hea2: Sound Insulation Up to 4 credits where pre-completion testing is carried out to comply or improve on performance standards in Approved Document E (2003 Edition, Building Regulations England and Wales)	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
64.	Ecohomes rating Hea3: Private Space Provision of private or semi private space	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2

Community facilities		
65.	<p>Ecohomes Rating Tra3: Local Amenities</p> <p>Proximity to Local Amenities:</p> <p>Within 500m of a food shop and post box</p> <p>Within 1000m of 5 of the following: food shop, postal facility, bank/cash machine, pharmacy, primary school, medical centre, leisure centre, community centre, public house, children's play area, place of worship, outdoor open access public area</p> <p>Safe pedestrian routes to the local amenities</p>	BREEAM: Ecohomes Pre Assessment Estimator – 2006 / 1.2
66.	<p>Barry SPG:</p> <p>Establish The Waterfront as a social and leisure focal point for the town</p> <p>LDP Preferred Options (16.3):</p> <p>Development will include the continued regeneration of Barry Waterfront into a high quality waterside development incorporating housing, leisure and recreational uses linked to further regeneration and maximising tourism opportunities at Barry Island.</p>	<p>The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001</p> <p>Supplementary Planning Guidance, Barry Development Guidelines (2006)</p> <p>The Vale of Glamorgan Local Development Plan Draft Preferred Strategy December 2007</p>
67.	<p>Policy COMM3</p> <p>Land is reserved for the development of schools at Barry Waterfront (1HA)</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001
Retail		
68.	<p>7.4.10</p> <p>It is the intention of the council to accommodate the majority of future retail needs of the Vale within Barry Town Centre, or in those parts of Barry Waterfront close to the Town Centre (see policy SHOP4)</p>	The Vale of Glamorgan Adopted Unitary Development Plan 1992-2001

A.2 Sustainability Baseline

Introduction

- A.2.1 The sustainability baseline provides a basis for the assessment of the sustainability of the masterplan, and the formulation of the overall sustainability strategy. As outlined previously, the information presented in this section draws out key sustainability issues and opportunities in the area, helping to derive the locally specific requirements that need to be addressed in the development. The audit of key social and community facilities, as demonstrated on Figure A.2, Table A.28 and Table A.29, provide a key element of this exercise.

General

- A.2.2 Barry is the largest town in the Vale of Glamorgan, with a population of 48,000, and is the Vale of Glamorgan's administrative centre, seaside resort and port.
- A.2.3 The majority of the Barry Waterfront site lies within Baruc Ward, although the East Quay portion is within Castleland Ward. Within these, the majority of the area is within Super Output Area Baruc 3, with a small area of West Pond falling within Baruc 1 and East Quay lying within Castleland 1 SOA. A map of the Super Output Areas is in Appendix A. Wards within walking distance have also been included in the profile of the area, as they are likely to be affected by the proposals. These are: Buttrills; Illtyd; and Dyfan, the latter being only just within an acceptable walking distance radius of site (c. 1300m).

Social

Population, age profile and health

- A.2.4 Table A.2 demonstrates that the area surrounding the proposed development currently has a high population density, compared to the Vale of Glamorgan. This suggests that a high density development will be suitable for the masterplan. The health of the population in the area, and the areas surrounding the site, is generally comparable to the Vale of Glamorgan population. However, the East Quay area shows a higher proportion of people with health described as 'not good', which may indicate the need for the provision of facilities to promote healthier lifestyles. This will be examined further in the review of existing facilities and services.

Table A.2 - Census 2001 Population Profile (%)

Ward/ SOA/ LA	1991 Resident population: All people	Population Density (persons/ha)	General health***: People whose health was: Good (%)	General health***: People whose health was: Not good (%)
Baruc 1 SOA	1438	-	66.7	10.1
Baruc 3 SOA	1525	-	65.9	11.8
Baruc Ward	2001: 5,750	17.3	68.2	9.8
Castleland 1 SOA	1401	-	56.2	17.9
Castleland Ward	2001: 3,679	-	61.0	14.3
Buttrills Ward	2001: 6,034	-	63.4	13.2
Illtyd Ward	2001: 8,366	-	69.6	9.3
Dyfan Ward	2001: 5,053	-	62.1	13.9
Vale of Glamorgan	2001: 119,292 (mid-'06 estimate: 123,300)	3.6	68.3	10.4

The 2001 Census showed that the majority of the population within the three SOAs covered by the development area were aged between 0-19, or over 60. The data was as follows:

Baruc 1 SOA

- 0-19: 22.8%
- 60+: 29.8%

Baruc 3 SOA

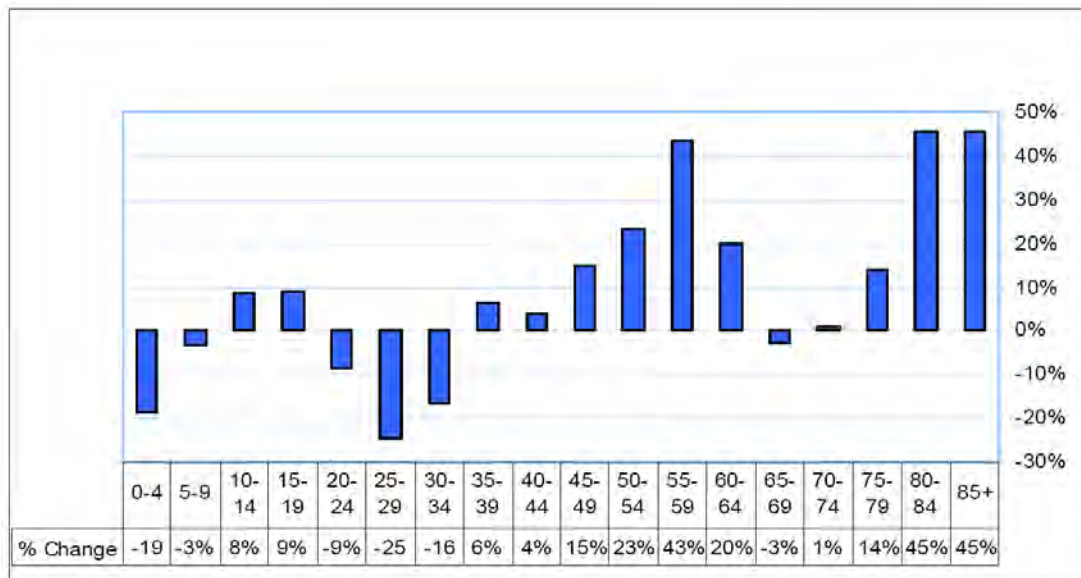
- 0-19: 26.3%
- 60+: 21.7%

Castleland 1 SOA

- 0-19: 27.5%
- 60+: 20.2%

The demographic profile of Vale of Glamorgan's population is that of a steadily ageing population as shown in Figure A.1.

Figure A.0.1 - Vale of Glamorgan population change 1991-2006



Source: MYE figures from 1991 to 2006

This may have implications for the provision of services and facilities to cater to these specific age groups, in order to enhance the community. The provision of services and facilities is further discussed below.

Careful consideration will also need to be given to the way in which the target market for Barry Waterfront may alter this profile and how best this can be managed in the design of the development.

1.3.1 Road Safety

The number of people seriously injured or killed through road accidents in The Vale of Glamorgan in 2003 was 61. This compares to 1,655 across Wales in the same year. Data for this indicator was not available at a more local level.

1.3.2 Crime and Fear of Crime

There is a shortage of specific statistics for crime levels at local level for the plan area. Data for the Vale of Glamorgan is shown in Table 3.2.

Table A.3 - Recorded crimes, 2006 – 2007: Vale of Glamorgan

	Total
Violence against the person	1740
Robbery	43
Burglary in a dwelling	352
Theft of a motor vehicle	329
Theft from a vehicle	921

Please note that recorded crime figures only include incidents that come to the attention of the police.

Consultation with the Architectural Liaison and Crime Reduction Officer for the Vale of Glamorgan, Dick Collins, revealed that Barry has one of the lowest crime rates in Wales. Methods to design out crime suggested by the officer included a collaborative approach, lighting, natural surveillance, and escape routes. The officer stated that the main issue to be resolved in the area was the fear of crime. 20 years ago Barry was labelled as having one of the highest crime rates in Europe. Although this has now vastly decreased, there is still a perception of high levels of crime.

1.3.3 Access to facilities

The December 2007 Sustainable Settlements Study for the Vale of Glamorgan LDP sought to identify which settlements might be appropriate for the purpose of accommodating new development. The method statement used is reproduced to follow:

'Each one was assessed against a number of sustainability criteria...the individual criteria were based on key services that contribute towards meeting the daily needs of the population and reduce reliance to travel to access facilities and services. Each of the settlements were assessed against the criteria and then ranked depending on their performance. They were then added together to calculate a settlement's position for each criterion.'

Table A.4 below shows each of the Study Group Settlements and their scores ranked according to the services and facilities available in that settlement.

Table A.4 - Vale of Glamorgan 2007 Sustainable Settlements Study

Area Settlement	Total	Area Settlement	Total	Area Settlement	Total	Area Settlement	Total	Area Settlement	Total
Barry	37	St Nicholas	14	Llysworney	9	Maendy	5	Llandough (Cowbridge)	2
Penarth	37	Llanmaes	13	Llangan	9	Moulton	5	Llanpha	1
Llantwit Major	35	Leckwith	13	Aberthin	9	Llantrithyd	4	Lavernock	1
Rhoose	35	Southern down	13	Llancarfan	8	Porthkerry	4	St Lythans	1
Cowbridge	33	Tredogan	13	Fferm Goch	8	Flemington	4	Llansannor	1
Dinas Powys	33	Peterston-super-Ely	13	Signingstone	8	St Georges	4	Drope	1
Sully	28	Colwinston	12	St Mary Church	8	St Mary Hill	3	Dyffryn	1

Llandough (Penarth)	28	Marcross	12	Penllyn	7	Swanbridge	3	Castle-upon-Alun	1
St Athan	27	Llandow	11	Hensol	7	St Andrews Major	3	Penn Onn	0
Wenvoe	26	Pendoylan	11	St Brides-super-Ely	7	Llanbethery	3	Norton	0
St Brides Major	25	Treoes	11	St Hilary	7	Michaelston le Pit	3	St y Nyll	0
Wick	22	Ystradowen	11	The Herberts	7	Pancross	3	Walterston	0
Bonvilston	21	Monknaish	11	Graig Penllyn	7	Tair Onen	3	Llanmihangel	0
Ewenny	20	The Downs	11	Gwem y Steeple	5	Twyn yr Odyn	3	West Aberthaw	0
Aberthaw (East)	19	St Donats	11	Llancadle	5	Trerhyngyll	2		
Ogmore by the Sea	19	Ogmore Village	10	Welsh St Donats	5	Tre-Dodridge	2		
Comtown	17	Penmark	10	City	5	Ruthin	2		
Pentre Meyrick	14	Broughton	10	Fonman	5	Gileston	2		

This shows that Barry ranks as one of the top two settlements in the administrative area and the report concluded that it benefited from a range of services and facilities more suited to meeting the day to day needs of the local community and can therefore sustain additional growth' without necessarily needing to ensure additional provision of such facilities.

Figure 3.2 demonstrates how the SOAs within, or in close proximity to, the Masterplan area have good access to services, compared to the rest of the Vale of Glamorgan as determined by the Welsh Index of Deprivation. The scale is explained as the higher the number (and lighter the colour), the lower the ranking, which indicates lesser deprivation.

In addition to this already existing data, a separate assessment has been undertaken specifically, as part of this report, in relation to the existing community facilities and services within approximately 1500m walking routes of all of the proposed site access points. Details of the assessment can be found in Appendix B.

This assessment has enabled initial recommendations to be made with regard to the potential need both for on-site provision and improvements to various facilities within the town that would be instigated by a development of this type, encompassing the following types of facility:

- Schools – Primary and Secondary;
- Health Centres;
- Local Shops;
- Community Centres;
- Local Centres;
- District Centres/Superstores;

- Leisure Provision.

Summary of Baseline Position

The following section sets out a brief summary of the baseline position in respect of the key services and facilities of interest based on a process of cross-referencing the data presented in the Figure 4.2 and supporting schedules against the standards set out in Appendix B.

- **Nursery / Primary School** – there is one school, Barry Island Primary, within the accessibility standards identified by Barton and a further five within the BREEAM catchment distance. These are: High Street Primary; Ysgol Sant Baruc; Ysgol Sant Curig; Gladstone; and Romilly Infants/Juniors.

A further three schools are within 1300m of the site, towards the north. With the exception of Gladstone, all the schools within the BREEAM catchment distance have current surplus capacity. Based on the SEP statistics (see Appendix C), this surplus is projected to total 204 across all of the schools for the 2011 forecast.

- **Secondary School / Large Secondary School** – the Barton accessibility standards suggest that all secondary school pupils should be located within 700-1000m of a secondary school, although the illustrative catchment is identified as 8000 persons. As such, the Barry Comprehensive and Bryn Hafren Comprehensive constitute 'local' provision, even though they are beyond the recommended accessibility standards in relation to Barry Waterfront. The SEP identifies forecast capacity (see Appendix C) at these schools of 530 in 2011.
- **Health Centres** – there are three health centres within 400m of the site, which is a good level of provision against the Barton accessibility and BREEAM standards and a further surgery within 1000m. Together these provide in excess of 16 doctors, which should be sufficient to accommodate a catchment in excess of 30,000 based on the Barton catchments.
- **Local Shops** – the site is served by two convenience stores within the 400m pedshed as well as a Morrisons and Costcutter Supermarket.
- **Post Office** – there are a number of post offices within the threshold walking distance of the site (within the 400m, 600m and 1000m pedsheds). Taken together, it is suggested in the Barton accessibility standards that this is sufficient to serve a catchment population of 15000 persons.
- **Community Centre** – there is one community centre within 600m of the Barry Waterfront site, located on Barry Island. To the north of the site there is the Buttrills Community Association building, just beyond the 1300m pedshed. Taken together these offer a reasonable range of activities through regular clubs and groups (see Appendix C) and community services are supplemented by a range of breakfast and after school activities at Barry Island Primary; High Street Primary; and Romilly Juniors and Infants.
- **Local Centres** – proximity to Barry Town Centre and other shop facilities means that there is adequate provision in terms of what would be classified as a local centre within walking distance (600m at the highest density scenario) of the Barry Waterfront site.
- **District Centre/Superstore** – The proximity of Morrison's superstore and other stores within Barry Town centre means there is an adequate provision of superstore facilities both in terms of distance and catchment population thresholds. The capacity of the local population to accommodate further retail provision is being addressed through the preparation of a Retail Impact Assessment, the findings of which will be considered in the sustainability assessment work as appropriate;
- **Leisure Centre** – Barry Leisure Centre provides a wide range of facilities and is within the walking distance threshold being located within approximately 1000m of part of the Barry Waterfront site. The leisure centre's location within the town centre means it is readily accessible by public transport from areas adjoining the development site.

Housing

A.2.5 Baruc 3 SOA had 839 dwellings in March 2004, and The Vale of Glamorgan had 53,624. At SOA and ward level, there is a shortage of data on housing. Tables A.5- A.8 demonstrate the affordability of housing within the Vale of Glamorgan, which indicates that further housing supply in Barry is required, particularly evident in Table A.8.

Table A.5 - Land Registry Average Prices and Sales (4th Quarter 2006)

Dwelling Type	The Vale of Glamorgan		Wales	
	Average Price	% of sales	Average price	% of sales
Detached	£287,400	28.4	£233,830	27.6
Semi-detached	£181,039	28.2	£144,211	29.7
Terraced	£139,752	36.1	£114,095	36.5
Flat/Maisonette	£153,989	7.3	£129,037	6.2
All dwellings	£194,303	100.0	£157,010	100.0

(Source: Vale of Glamorgan Housing Strategy 2007-2012)

Table A.6 - Minimum entry levels to the housing market

	Barry	Cowbridge	Llantwit Major	Penarth
Bedrooms	To buy			
1 bed	£106,000*	£135,000*	n/a	£120,000
2 bed	£105,000	£169,500*	£145,000*	£162,950
3 bed	£124,950	£240,000	£174,950	£179,950
4 bed	£169,950	£389,000	£219,500	£250,000

(Source: Vale of Glamorgan Housing Strategy 2007-2012)

Note: Data collected through internet search. The lower quartile property was taken as an entry level.

*indicates a sample of fewer than 10

n/a- no data available

Table A.7 - Vale of Glamorgan housing affordability by tenure

Tenure	Unable to afford market housing	Number of households in tenure	% of households unable to afford
Owner-occupied (no mortgage)	482	17,029	2.8%
Owner-occupied (with mortgage)	2,746	23,816	11.5%
Council	3,776	3,873	97.5%
RSL	1,821	2,037	89.4%
Private rented	3,311	4,996	66.3%
TOTAL	12,136	51,750	23.5%

(source: Vale of Glamorgan Housing Strategy 2007-2012)

Table A.8 - Geographical Distribution of Affordable Housing Requirements in Vale of Glamorgan

Sub-area	Need	Supply	Shortfall	% of net shortfall	Supply as % of need
Barry	769	504	265	13.8%	65.6%
Penarth	273	118	155	8.1%	43.2%
Rural	35	6	29	1.5%	17.2%
East Vale	16	0	16	0.8%	0.0%
Coastal	242	55	187	9.8%	22.7%
TOTAL	1,335	683	652	34.1%	51.2%

(source: Vale of Glamorgan Housing Strategy 2007-2012)

A.2.6 In 2006 the Council adopted Supplementary Planning Guidance (SPG) that sets out the Council's requirements for the provision of affordable housing. At present both the UDP and SPG require the provision of at least 20% affordable housing on sites that can accommodate more than 50 dwellings. Since the adoption of the SPG the Council has secured affordable housing at:

- Anchor Way, Penarth Haven
- Site of the St Athan Methodist Church, St Athan
- Jackson Quay, The Barry Waterfront

Table A.9 - Delivery of Affordable Housing

Area	Number of Units: delivered 2004/7	Number of Units: RSL pipeline schemes 2007/10
Barry Waterfront	61	20
Barry	91	189
Rhose	7	-
St Athan	2	16
Llantwit Major	2	-
Penarth	66	-
Vale of Glamorgan Homebuy	-	15
TOTAL	229	240

Some of the pipeline units are still awaiting Social Housing Grant approval from Welsh Assembly Government from the bidding round for 2008/10 for which the Council submitted bids of over £10 million.

The new development will help to contribute to the affordable housing needs of the local community. Similarly, the wider housing needs, as outlined in Tables 3.9, 3.10 and 3.11 and Figure 3.3 will also be addressed through the provision of the development.

Table A.10 - Dwelling Requirements in the Vale of Glamorgan

	Extra Dwellings						Dwelling Requirements	
	2001	2006	2011	2016	2021	2026	2001-2026	2011-2026
Assumed Migration 1985 to 2004	2352	3119	2004	1897	1479	779	9278	4155
Continuation of UDP allocation (no change)	2165	3119	2165	2165	2166	2163	11778	6494
Average Build Rate from 91/2 to 05/6 (487 p.a)	2352	3119	2435	2435	2435	2435	12859	7305
Assumed Migration 1995 to 2004	2352	3119	2899	2913	2581	1946	13458	7440
Regional Requirement (500 units p.a)	2352	3119	2501	2499	2499	2498	13116	7496
Average Build Rate from 96/7 to 05/6 (519 p.a)	2352	3119	2594	2595	2594	2594	13496	7783
Assumed migration 2000 to 2004	2352	3119	3048	3081	2763	2142	14153	7986
Average Build Rate from 00/1 to 05/06 (568 p.a)	2352	3119	2840	2840	2840	2841	14480	8521

(source: population housing projections Dec 2007)

Joint Housing Land Availability Study:

The Joint Housing Land Availability Study was undertaken by the Welsh Assembly Government in April 2006. The majority of the Vale of Glamorgan land supply is contained within four/five large sites areas, with capacities of 400 dwellings or over. The sites below in Table 3.10 account for 68% of the 5 year land supply in the Vale of Glamorgan (large sites), these sites also make up the main source of the potential supply beyond five years in the Vale (89 % of 3(i) sites). Table 3.11 demonstrates the housing tenure mix within the local community. This shows that the majority of the housing in the area surrounding the site is owner occupied, which may be indicative of the housing market in the area, and therefore what the development should be trying to achieve.

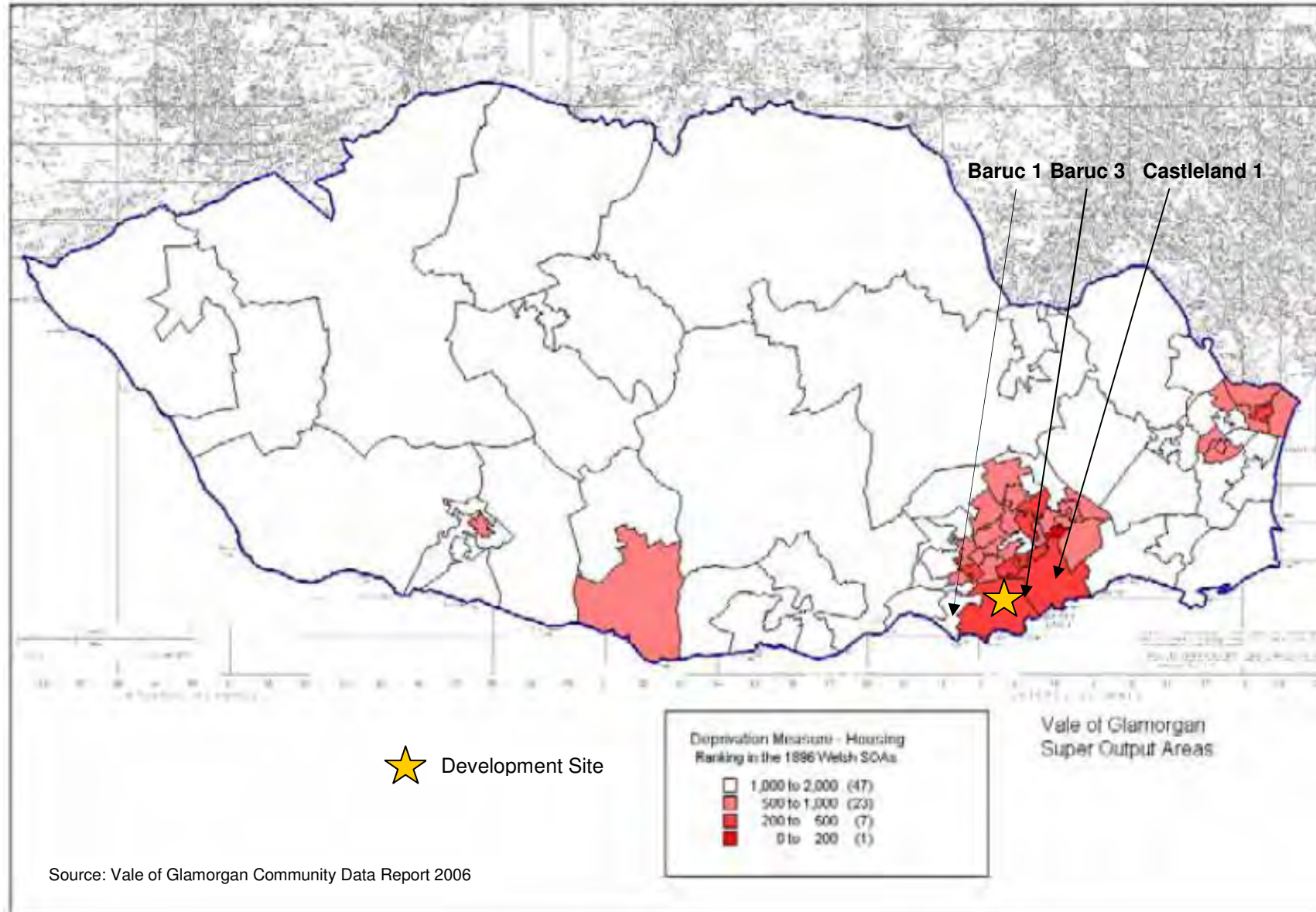
Table A.11 - Land Supply in the Vale of Glamorgan

Site	Total Units	Remaining	5 Year Supply	5 Years Plus
Barry Waterfront	1329	1193	403	790
Pencoedtre	834	60	0	60
Cogan Hall Farm	400	150	150	0
Rhose Point/ Rhose	729	600	240	360
Sully Hospital	234	234	234	0

Table A.12 - Housing Tenure Mix

Ward/ SOA/ LA	Households: Owner occupied: Owns outright (Households) (%)	Owner occupied: Owns with a mortgage or loan (Households) (%)	Owner occupied: Shared ownership (Households) (%)	Rented from: Council (local authority) (Households) (%)	Rented from: Housing Association / Registered Social Landlord (Households) (%)	Rented from: Private landlord or letting agency (Households) (%)	Rented from: Other (Households) (%)
Baruc Ward	37.3	45.4	0.21	3.52	3.02	7.76	2.77
Castleland Ward	20.7	40.20	0.37	7.64	14.67	13.32	3.08
Buttrills Ward	26.02	44.47	0.32	12.87	6.27	7.52	2.53
Illtyd Ward	29.52	52.02	0.11	7.19	2.21	6.76	2.18
Dyfan Ward	29.23	45.06	0.38	17.69	3.05	2.62	1.96
Vale of Glamorgan	32.53	44.93	0.34	8.86	4.08	6.43	2.83

Figure A.3 - Welsh Index of Deprivation: Housing



A.3 Environmental

Transport

- A.3.1 Cardiff International Airport is located at Rhooose, 3 miles west of Barry.
- A.3.2 Figure 3.4 demonstrates the location of the existing cycle route, and where it terminates next to the development site. This provides a key opportunity for the development to extend this network, to improve the connections between the town and Barry Island through the development. The safety of these routes should be ensured, as there are clusters of cycling accidents in the urban areas with significant numbers identified in particular in Barry and at Cogan Roundabout (source: SA Scoping Report of LDP).
- A.3.3 Figure 3.4 also demonstrates important rail facilities close to the development area. Ease of access to these stations should be ensured.
- A.3.4 Figure 3.5 demonstrates that there is sufficient bus service provision in the surrounding area, which could be amended to service the new development.
- A.3.5 There are relatively high levels of car ownership in the wards within and surrounding the development (Table A.13), with the exception of Castleland and Buttrills wards, which contain a high proportion of households with no cars or vans. This indicates that the new development will need to create provision for some accommodation of cars, although more sustainable transport modes should be prioritised. However, there are existing parking standards that should be adhered to, which will be balanced against the need to encourage the use of more sustainable modes of travel for all sections of the community. Both of these measures will help to ensure a greater integration of the new development with the existing population.

Table A.13 - Car Ownership, 2001

	Baruc Ward	Castleland Ward	Buttrills Ward	Illyd Ward	Dyfan Ward	Vale of Glamorgan
Households with no cars or vans (Households) (%)	22.28	42.97	34.39	22.38	25.08	21.51
Households with one car or van (Households) (%)	46.50	43.40	46.50	47.75	47.88	45.33
Households with two cars or vans (Households) (%)	25.51	12.45	16.25	24.96	22.37	27.03
Households with three cars or vans (Households) (%)	4.28	0.86	2.33	3.78	3.77	4.81
Households with four or more cars or vans (Households) (%)	1.43	0.31	0.52	1.12	0.91	1.32
All cars or vans in the area (Vehicles)	2,778	1,178	2,195	3,972	2,262	58,330

Figure A.1 - National Cycle Network and Rail Facilities



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Key












	National Cycle Network on-road route
	Other signed on-road cycle route
	National Cycle Network traffic-free route (including some forest tracks and paths alongside busy roads)
	Other traffic-free cycle route
	Proposed future National Cycle Network route
	Access points
Other features (as shown at smaller scales)	
	Motorway
	A-Road
	B-Road
	Waterway
	National Rail Network

Figure A.5 - Bus service provision



Air Quality

A.3.6 Data gap

Climatic Factors

A.3.7 Table 3.13 demonstrates a per capita CO₂ emission rate that is on a par with the Welsh average. Domestic emissions are the second largest contributor to CO₂ emissions, and it is in this sector that the new development can seek to minimise its impact through striving to achieve the Ecohomes 2007 'excellent' rating.

Table A.14 - Local and Regional Estimates Carbon Emissions by End User (tonnes), Summary 2005

	Industry and Commercial	Domestic	Road Transport	LULUCF	Total	Population Thousands (2001)	Per capita Total CO ₂ (tonnes)	Domestic per capita CO ₂ (tonnes)
Vale of Glamorgan	828	309	250	26	1412	119	11.8	2.6
Total Wales	20494	7451	7218	-370	34793	2903	12.0	2.6

Source: www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm

Water Quality

A.3.8 Defra (19 March 2007) Water quality classification predictions for identified bathing waters in the nearby area are outlined in Table A.15. These classifications, under the revised Bathing Water Directive (rBWD), are outlined in Table A.14. National comparators are shown in Table 3.16.

A.3.9 There are four new standards ('excellent', 'good', 'sufficient' and 'poor') which differ for inland and coastal bathing waters because evidence shows that faecal indicator organisms (FIOs) (Escherichia coli and intestinal enterococci in the case of the rBWD), which are measured to determine bathing quality die off faster in seawater than freshwater. The new standards are set out in Table 3.14. The new standards (in terms of coastal waters) compare to the existing bathing water standards as follows:

- Excellent – approximately twice as stringent as the current guideline standard;
- Good – similar to the current guideline standard;
- Sufficient – tighter than the current mandatory standard;
- Poor – normally non-compliant water.

A.3.10 The rBWD requires that all bathing waters meet the 'sufficient' classification by the end of the 2015 bathing season.

Table A.15 - Classification for coastal and transitional bathing waters under the rBWD-

Parameter	Excellent Quality	Good Quality	Sufficient Quality	Poor Quality
Intestinal enterococci (cfu/100ml)	100 (*)	200 (*)	185 (**)	>185 (**)
Escherichia coli (cfu/100ml)	250 (*)	500 (*)	500 (**)	>500 (**)

(*) Based upon a 95-percentile evaluation

(**) Based upon a 90-percentile evaluation

The new development should seek to maintain this high quality of water through minimising potential polluting land uses and practices in the masterplan.

Table A.16 - Bathing Water Quality

Area	Rating
Jacksons Bay Barry	Sufficient
Whitmore Bay Barry	Good
Cold Knapp Barry	Excellent

Source: DEFRA

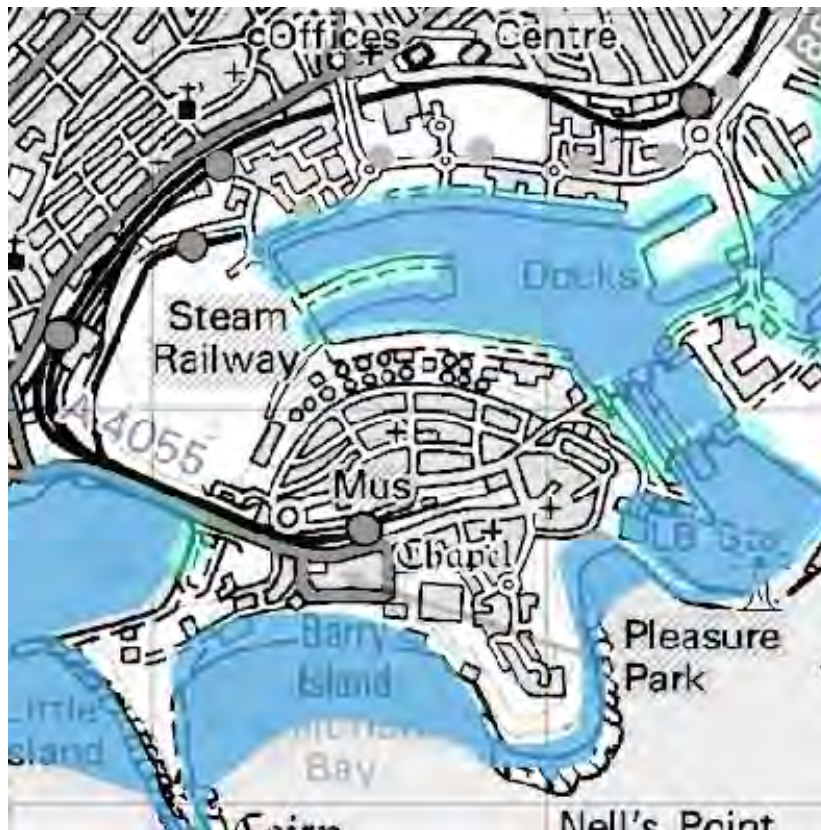
Table A.17 - Number of bathing waters in each class (using 2003-2006 data and no discounting)

Class	England	Wales	England and Wales	% Bathing Waters
Excellent	213	58	271	56
Good	110	11	121	25
Sufficient	52	8	60	12
Poor	33	1	34	7
Total	408	78	486	100




Flooding and Drainage

A.3.11 Flood risk is shown in Figure A.6.

Figure A.2 - Flood Risk



Flooding from rivers or sea without defences

-  Extent of extreme flood
-  Flood defences
-  Areas benefiting from flood defences

Waste

- A.3.12 At Barry Waterfront there exists a licensed landfill site associated with the land reclamation scheme-taking place there. The site is designed with fully lined disposal cells to contain the contaminated soil present on site.
- A.3.13 Tables A.18-A.20 show municipal waste arisings, and recycling rates and targets from the Vale of Glamorgan. The new development must seek to contribute to the targets for the more sustainable management of waste through the design and provision of facilities. This should also include sustainable waste management through the construction phases. The Vale of Glamorgan waste management strategy outlines the following ways in which developments can increase recycling, the decision on which method to employ will be influenced by the final waste management solution selected.
- Collecting the whole unsorted waste and delivering it to a so-called 'dirty' Materials Recycling Facility (MRF). However, increasing pressure from reprocessors, and more demanding quality standards for waste derived products such as compost are further factors which are unlikely to see the 'dirty' MRF as a realistic option in the future.
 - Collecting source-segregated materials from each household and delivering it to a 'clean' MRF or simple bulking facility (either as individual materials or in a co-mingled form) where the materials can be further separated as necessary and then bulked up prior to onward delivery for reuse and/or reprocessing; and
 - Encouraging the public to segregate dry recyclable materials (and compostable materials) at source and to then utilise an existing and/or improved network of community based 'bring' recycling sites and Household Waste Recycling Centres (HWRCs – Civic Amenity sites).

Each of these methods has their own advantages and disadvantages, however it is the 'at source' segregation approach that appears to be favoured by the Welsh Assembly Government, and which has been shown from experience in the UK and elsewhere in Europe to result in high recycling rates. The use of such systems in combination with a network of 'bring' sites and HWRCs is generally seen as the preferred overall approach to maximising the segregation of materials for recycling and composting. It is this combination of 'at source' segregation and use of 'bring' sites and civic amenity sites that will form the core of the Vale of Glamorgan Council's approach to meeting targets in the short to medium term.

(Vale of Glamorgan Council 2004, Municipal Waste Management Strategy)

Table A.18 - Municipal Waste Arisings (1998/99 to 2003/4) in Tonnes

	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04
Total Household Waste (MSW less trade)	48,594	51,551	51,080	54,561	56,439	58,872
Total MSW Waste	55,853	59,011	58,568	62,169	63,830	66,299

Source: Vale of Glamorgan Council 2004, Municipal Waste Management Strategy

Table A.19 - Recycled and Composted Waste Summary

	2001/02	2002/03	2003/04
HH Kerbside Collected	1,005	1,723	2,540
Bring Sites	2,699	2,572	2,191

CA (Dry Recyclate)	687	1,072	1,488
CA (Green Waste)	1,396	2,202	3,429
Total Recycled & Composted Waste	5,778	7,569	9,648

Note: Bring 2002/03 includes tonnage of office paper recycling Source: Vale of Glamorgan Council 2004, Municipal Waste Management Strategy

Table A.20 - Recycling and Composting Requirements for Target Years

Year	Target	Total Tonnage (recycling and composting)	Minimum tonnage of:	
			Recycling	Composting
2006/07	To achieve at least 25% recycling/composting of MSW with a minimum of 10% composting (with only compost derived from source segregated materials counting) and 10% recycling.	17,670	7,068	7,068
2009/10	To achieve at least 40% recycling/composting of MSW with a minimum of 15% composting (with only compost derived from source segregated materials counting) and 15% recycling.	29,147	10,930	10,930

Source: Vale of Glamorgan Council 2004, Municipal Waste Management Strategy

Figure A.21 - Landfill Site Location



■ Active Landfill Site Boundary

Biodiversity

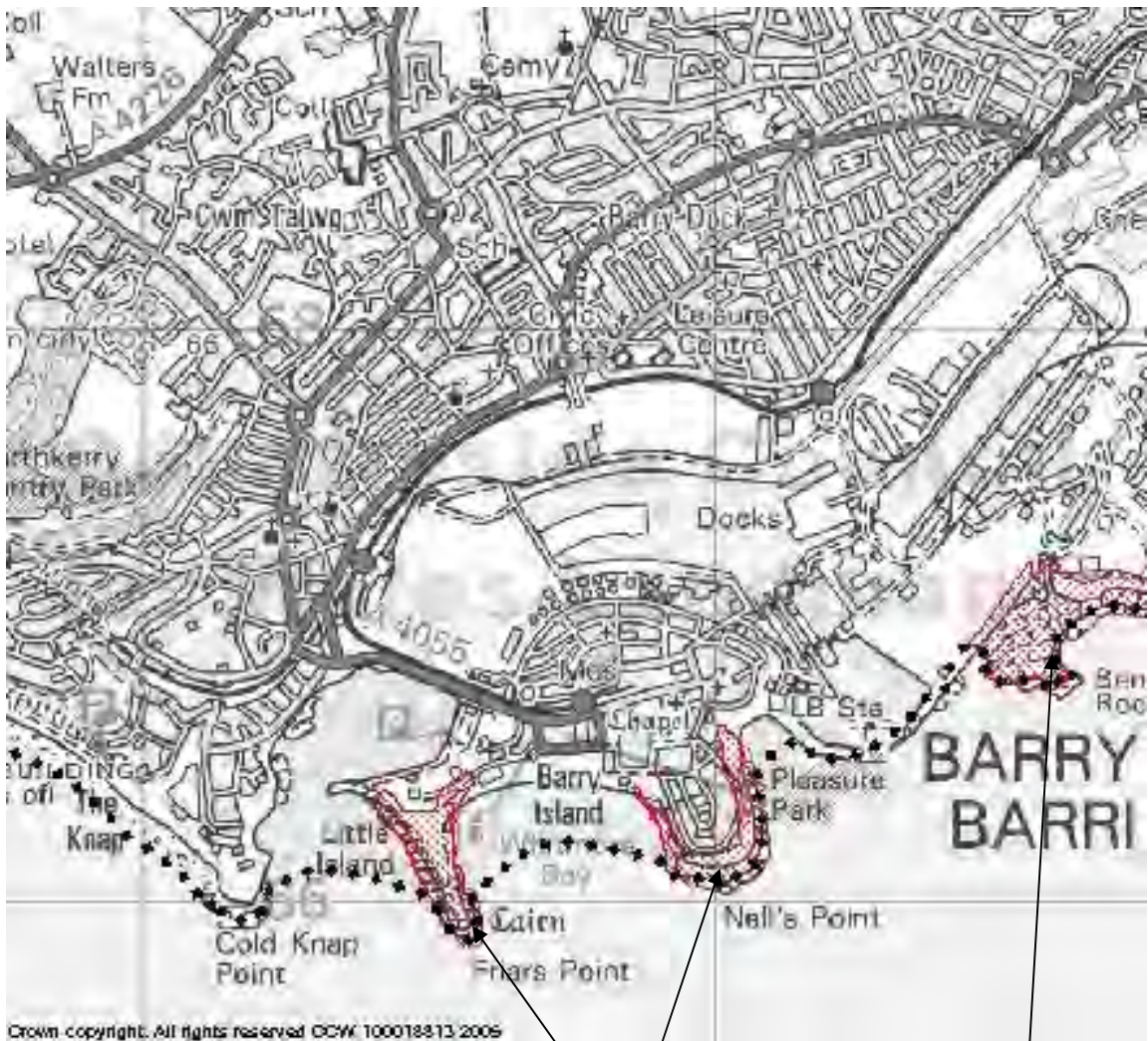
Phase I Habitat Survey

- A.3.14 Soltys Brewster Ecology Limited undertook a Phase I Habitat Survey of the Barry Waterfront Site which was reported in March 2008. The combination of desk and field surveys undertaken have identified that the three main land parcels proposed for development currently support a limited range of habitat types including bare ground with extensive areas of semi-improved neutral grassland, early successional vegetation typically associated with Brownfield sites and intermittent areas of dense and scattered scrub.
- A.3.15 No sites with statutory nature conservation designations, such as Sites of Special Scientific Interest were noted within the site or the ecologically relevant adjoining areas. The desk study identified the presence of protected or otherwise notable flora and fauna at the site including amphibians, reptiles, birds, invertebrates and a rare plant species.

Geology and Soils

- A.3.16 Geological classification is shown in Figure A.23. Two geological SSSIs were located within 400m of the boundary, as demonstrated in Figure A.22.

Figure A.22 - SSSIs

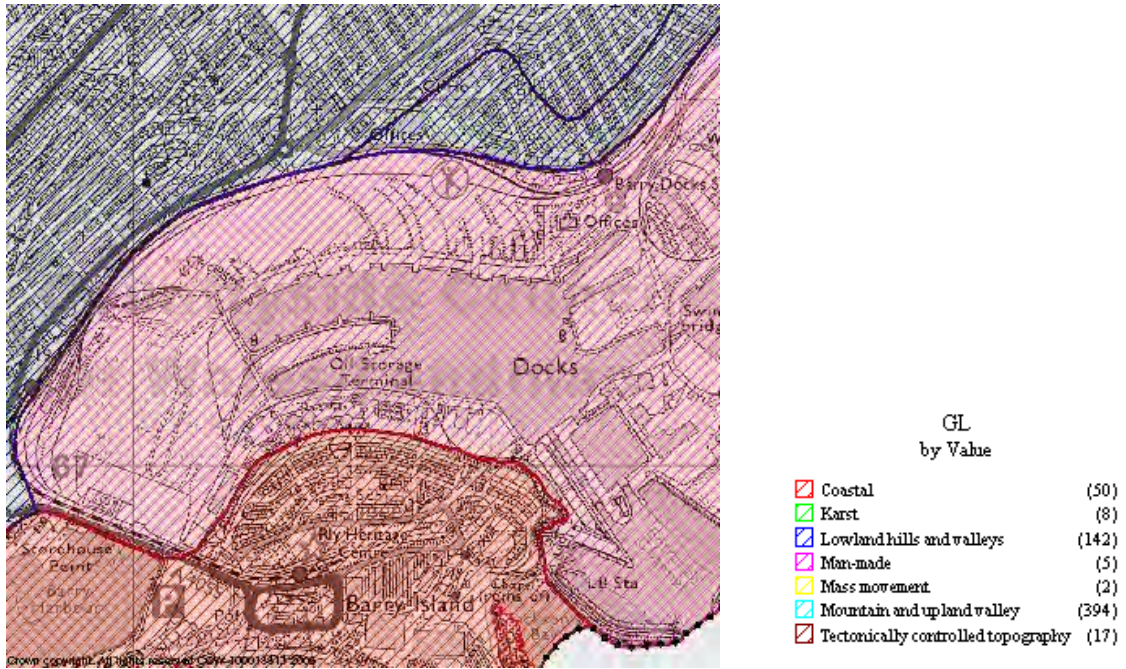


Source: <http://landmap.ccw.gov.uk>

Barry Island SSSI

Hayes Point to Bendrick Rock SSSI

Figure A.23 - Geological Classification



Source: <http://landmap.ccw.gov.uk>

A.3.17 The development area is characterised geologically as a former estuary that has been reclaimed to form Barry Docks and its associated industrial facilities. Topographically as well as geologically, the higher part of the estuary is a broad alluvial plain, with indications of former saltmarsh channel systems, with subsequent river-flood plain systems. (Source: Landmap)

Landscape and Local Character

A.3.18 A Landmap analysis of Barry has been published by the Countryside Council for Wales (CCW). This indicated that Barry’s oldest area is the docks, and new development has largely taken place on the periphery of this area.

A.3.19 The older areas of Barry are characterised by a range of residential terraces, distinctly Victorian and Edwardian in style. Barry’s most impressive Victorian building is the Docks Office, which is in close proximity to the development site, and currently isolated from the town by the railway line that carries both commercial and passenger traffic.

Figure A.24 - Visual and Sensory Level 2 Classification



Source: <http://landmap.ccw.gov.uk>

- A.3.20 The physical perception of the development area of the docks has been assessed by Landmap. The area is described as:
- 'A saltwater water body surrounded by hard dock edges, and moorings and connected to Bristol Channel by dock gates. The docks are still functional except for those to the north east where new development is taking place. The western docks form a natural focus for views from Barry town centre reflecting the sky and emphasising the coastal location of the town. They are a positive asset indicating the original function of the settlement as a coal port.'*
- A.3.21 Landmap drew the following conclusions about the character of Barry:
- Unattractive
 - Noisy
 - Settled. The aspect area offers generally unattractive views to a Victorian industrial town. The overall feeling is of small Victorian terraces on steep hills overlooking an industrial dockland in decline. The area is noisy with heavy traffic and occasional low flying planes to Cardiff Airport. The area is densely settled.
 - Moderate sense of place/ local character. There are aspects to Barry which give a sense of local distinctiveness. The small terrace houses set on a hill overlooking the docks gives a set of topographical and built form elements which are quite strong. However the character of the town changes from area to area and hence there is no distinctive or overall sense of place.
- A.3.22 Within this context, the Barry Waterfront development provides a key opportunity to enhance the image of Barry, rejuvenating this key location within the town that is assessed as having a detrimental impact on its reputation and environmental quality.
- A.3.23 In addition, the Index of Multiple Deprivation assessed the 'Physical Environment Deprivation' within Barry. Compared nationally, Castleland 1 ranks 34th and Baruc 3 ranks 78th (with 1 being the most deprived) in the top 190 (10%) most deprived SOAs in Wales in terms of their physical environment. Baruc 1 does not fall within the worst 10% in Wales. The indicators used to measure this performance were: air quality; air emissions; living within 1 km of a waste disposal site; proportion of people living within 1 km of an Environment Agency regulated industrial source; proportion of people living in an area with a significant risk of flooding (Source: Welsh Index of Multiple Deprivation 2005). Castleland 1 also features within the worst 10% of SOAs in Wales overall, for all indicators.
- A.3.24 The new development, again, provides a key opportunity for the improvement of the physical environment of the town.

Economic

Economy

- A.3.25 The 2007 Employment Land Review recommends:
- Although there is a limited office market in the Vale, this is changing and the public sector need to anticipate this. Potential office sites at Barry Waterfront and Cardiff International Airport need to be reserved, taking a longer term view. There may be limited demand for them now, but there will be in 5-10 years time.*
- The Waterfront includes the Innovation Quarter, a 7.6 ha site, which already contains a Business Support Centre and Skills Centre. There are proposals to develop the remaining derelict buildings and undeveloped land for leisure, community and office uses. This includes a 0.8 ha site earmarked for offices. The area may also be extended to include a further 1.6 ha for a Lifelong Learning Centre. However, the WAG is keen to develop the rest of the Waterfront before proceeding with the Innovation Quarter proposal.*
- A.3.26 The adopted UDP (EMP 1 LAND FOR EMPLOYMENT USES) identifies 3.4 (*2) ha of land at The Waterfront, Barry for employment uses (B1 & B8), which is characterised as 'partially developed'. 16.6ha of land at Barry Docks for employment development (B1, B2 & B8), characterised as 'vacant' (source: SA Scoping of LDP).

- A.3.27 The port of Barry provides employment to benefit the local economy. It enables goods to be imported and exported to and from the region, especially supporting the growing chemicals industry in Barry (source: SA Scoping of LDP).
- A.3.28 Table A.21 demonstrates that the wards surrounding and within the development area contains a proportion of people of working age that is comparable to national as well as regional averages.
- A.3.29 However, the SA Scoping Report of the LDP identifies a continued fall in the vitality and viability of Barry Town Centre, which will be an issue identified through this new development.

Table A.21 - Working Age Population

	Baru c (%)	Castlelan d (%)	Buttrills (%)	Illtyd (%)	Dyfan (%)	The Vale of Glamorga n (%)	Great Britain (%)
All people - working age	55.6	60.5	57.2	60.0	57.5	59.1	61.5
Males - working age	60.6	63.0	61.9	64.3	62.6	62.4	65.1
Females - working age	51.1	58.1	53.1	56.0	53.0	56.0	58.0

Source: Census of Population (Table CAS002 - Sex and Age by Economic Activity)

Note: Percentages are based on total population

Employment

- A.3.30 Additionally, Table A.22 demonstrates high levels of unemployment in all the wards near the proposed development site. Table A.23 shows a high proportion of managers and professionals, which may be indicative of the projected population for the development site. Figure 3.11 demonstrates that there is a high number of working age claimants in the community surrounding the development site, which may be addressed through the provision of employment opportunities through the mix of uses in the new development.

Table A.22 - Economically active (2001)

	Baru c (%)	Castlela nd (%)	Buttrills (%)	Illtyd (%)	Dyfan (%)	The Vale of Glamorgan (%)	Great Britain (%)
All people							
Economically active	75.8	70.2	74.5	79.3	73.8	75.9	76.0
In employment	71.0	63.0	68.6	75.0	68.4	71.7	71.6
Employees	62.0	57.5	63.0	67.7	61.5	62.9	62.6
Self employed	9.0	5.5	5.7	7.3	6.9	8.8	9.0
Unemployed	6.4	10.2	7.9	5.3	7.2	5.5	5.8
Males							
Economically active	80.6	77.6	79.2	83.1	77.8	80.7	81.4
In employment	73.9	68.0	72.4	77.9	71.1	75.6	76.0
Employees	61.8	60.5	63.7	67.6	60.7	63.1	63.1
Self employed	12.1	7.5	8.7	10.3	10.4	12.4	12.9
Unemployed	8.4	12.4	8.6	6.3	8.6	6.4	6.5
Females							

Economically active	70.7	62.7	69.8	75.2	69.6	70.8	70.3
Employment	67.9	58.0	64.8	72.0	65.7	67.7	66.9
Employees	62.2	54.6	62.2	67.9	62.3	62.6	62.1
Self employed	5.7	3.4	2.6	4.1	3.4	5.1	4.8
Unemployed	3.9	7.5	7.2	4.2	5.6	4.4	4.8

Source: Census of Population (Table CAS028 - Sex and Age by Economic Activity)

Note: Percentages are based on working age population, except unemployed which is based on economically active.

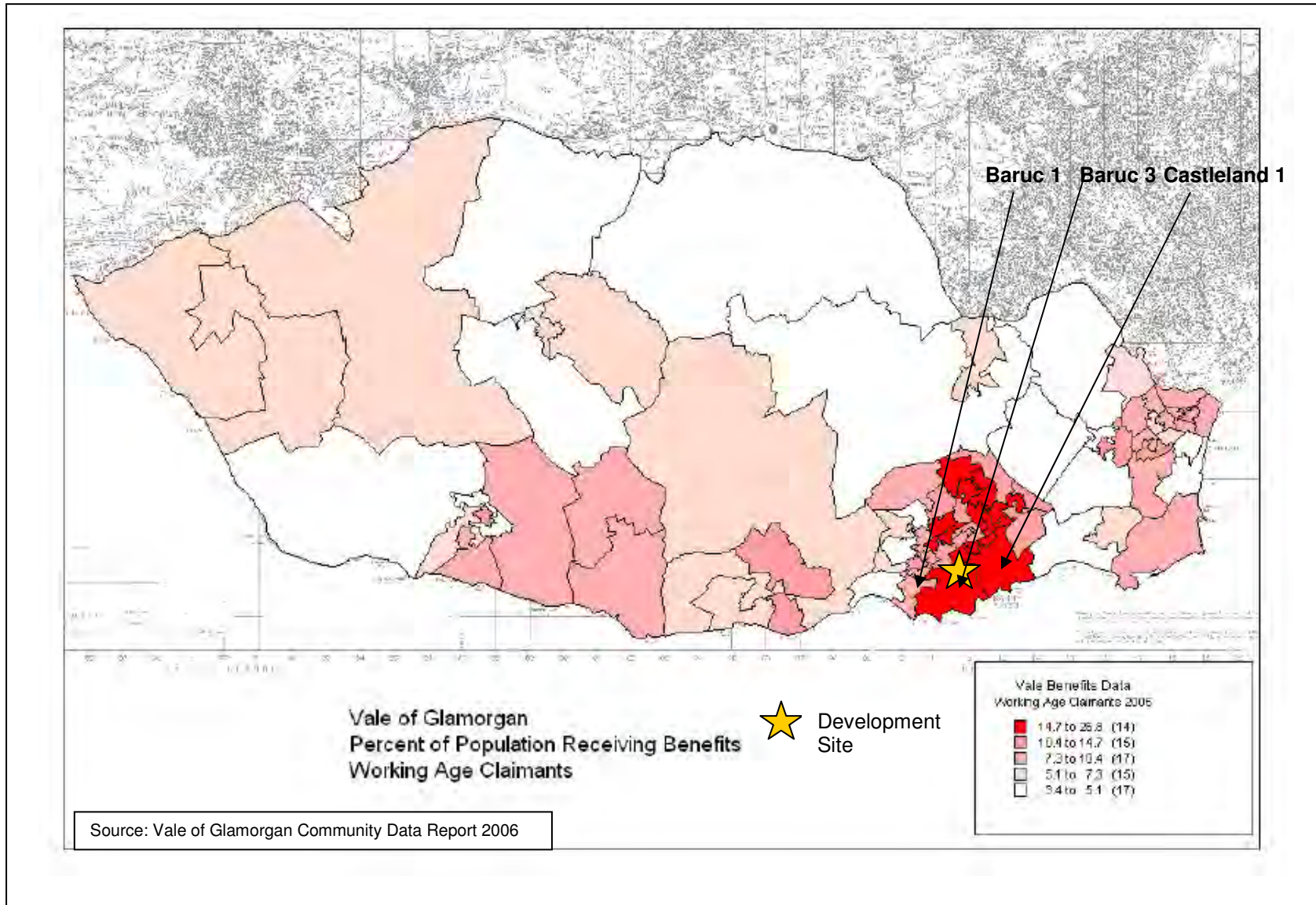
Table A.23 - Employment by occupation (2001)

	Baru c (%)	Castlelan d (%)	Buttrill s (%)	Illy d (%)	Dyfa n (%)	The Vale of Glamorgan (%)	Great Britain (%)
1 Managers and senior officials	16.0	10.1	8.8	14.6	11.1	15.1	14.9
2 Professional	14.0	4.4	6.6	9.3	7.6	12.5	11.2
3 Associate professional & technical	16.3	11.8	13.2	16.0	13.8	16.1	13.9
4 Administrative & secretarial	13.4	13.3	13.3	16.4	16.3	13.9	13.2
5 Skilled trades	11.1	14.9	13.8	11.7	13.5	11.1	11.8
6 Personal services	7.2	10.2	9.8	7.8	7.7	7.1	6.9
7 Sales and customer services	7.1	8.9	10.1	8.7	8.5	7.5	7.7
8 Process plant and machine operatives	6.4	11.3	10.1	5.8	7.9	6.4	8.7
9 Elementary occupations	8.5	15.2	14.3	9.7	13.6	10.3	11.8

Source: Census of Population (Table CAS033 - Sex and Occupation by Age)

Note: Figures are for working age by Soc 2000 major groups. Percentages are based on all persons in employment

Figure A.25 - Working Age Claimants



Education and skills

- A.3.31 Table A.24 demonstrates relatively low qualification levels within the surrounding community, particularly in Castleland and Buttrills wards, compared to county and national averages. Secondary, Tertiary and Higher educational facilities within reach of the development site are demonstrated in Table A.25. The good accessibility to these facilities suggests that there is potential for the local skills levels to increase, and that the new development can take advantage of such facilities.

Table A.24 - Qualifications (2001)

	Baruc (%)	Castleland (%)	Buttrills (%)	Illtyd (%)	Dyfan (%)	The Vale of Glamorgan (%)	Great Britain (%)
All people							
No qualifications or level unknown	33.3	46.2	41.5	32.9	43.4	34.0	35.8
Lower level qualifications	44.0	45.9	47.2	50.7	43.4	44.9	43.9
Higher level qualifications	22.7	7.9	11.3	16.3	13.2	21.1	20.4
In employment							
No qualifications or level unknown	23.0	32.6	29.4	23.5	32.0	23.8	25.6
Lower level qualifications	49.1	56.9	56.0	56.9	50.9	50.0	48.9
Higher level qualifications	27.8	10.5	14.6	19.6	17.1	26.2	25.5
Unemployed							
No qualifications or level unknown	32.2	46.8	39.9	35.2	48.6	38.6	38.4
Lower level qualifications	52.6	49.4	55.4	52.6	45.0	48.6	47.2
Higher level qualifications	15.1	3.9	4.7	12.2	6.4	12.8	14.5

Source: Census of Population (Table CAS032 - Sex and Age and Level of Qualifications by EA)

Note: All figures are for persons aged 16 to 74

Table A.25 - Secondary, Tertiary, Further, and Higher Education Facilities

Service/Facility	Distance from site	Detail of Provision
Secondary Schools	2 over 1300m	Barry Comprehensive School CF62 8ZJ Bryn Hafren Comprehensive School CF62 9YQ
College	1 within 1000m	Barry College, Hood Road
University	10.1 miles/ 28 minutes drive	Cardiff University

Retail

- A.3.32 The provision of retail facilities in the surrounding area is described in Figure A.2 and the detailed assessment of access to services and facilities below. The Retail Impact Assessment will further inform this analysis.

Tourism

- A.3.33 The SA Scoping Report of the LDP identifies that the predominance of residential development at Barry Waterfront, Penarth Marina and promenade, which is deemed as not enough mixed use development to encourage tourism. The new development will encourage a mix of uses, thus encouraging visitor activity. The development also presents an opportunity to enhance the setting of Barry Island as a tourist destination.

Evening economy

- A.3.34 The SA Scoping Report of the LDP identifies lack of evening economy in Barry, especially Barry Island. The new development may present an opportunity to address this deficiency.

A.4 Access to Services and Facilities: Detailed Assessment

Assumptions

- A.4.1 Guidance on the sustainable provision of services and facilities set out in documents including BREEAM (Ecohomes 2006) and the Barton et al. (2003) publication 'Shaping Neighbourhoods', utilises a range of figures relating to population densities, catchment size, walking distances and projected population densities.
- A.4.2 Information provided in the development brief has been used to estimate the likely population densities and consequent population change resulting from development of the Barry Waterfront Site. Two methods of calculation have been used to generate working assumptions regarding population increase and density:
- It is understood that the Consortium wishes for 2000 units to be developed. Using the 2011 projected house hold size figure of 2.26 people per house hold, this gives a population increase of 4,520;
 - The site area is approximately 45ha. If developed to achieve the 5000 population referenced in the development brief, population density would be 100 persons per hectare (ppha). Alternatively, if the current density of 23 dwellings per acre identified by HMA is achieved, then the population density would be nearer 111 dph.
- A.4.3 In considering the site in the wider context, published population statistics for neighbouring wards suggest that the overall catchment population for the parts of Barry falling within 1500m of the key site access points would be in the region of 12-14,000 following construction, at an average density that is estimated as likely to vary between 70 and 80 ppha.

Assessment Standards

- A.4.4 Table A.26 reproduces the BREEAM (Ecohomes 2006) accessibility standards to the above services and facilities identified as requirements in moving towards sustainable development. It is against these standards that the provision of new facilities will be judged for the BREEAM assessment of the overall masterplan proposals.
- A.4.5 In addition, Barton et al. (2003) publication *Shaping Neighbourhoods*, has translated a combination of government publications and academic research into a useful summary table of desirable accessibility standards, reflecting the aims of achieving sustainable extensions to existing settlements. The relevant parts of the summary accessibility standards outlined in this publication are reproduced in Table A.27 and provide a more detailed and higher standard of provision than outlined in the Ecohomes standards.

Table A.26 - Ecohomes Rating Tra3: Local Amenities

Proximity to Local Amenities
Within 500m of a food shop and post box
Within 1000m of 5 of the following: food shop, postal facility, bank/cash machine, pharmacy, primary school, medical centre, leisure centre, community centre, public house, children's play area, place of worship, outdoor open access public area
Safe pedestrian routes to the local amenities

BREEAM: Ecohomes 2006

Table A.27 - Accessibility Standards

local facility	illustrative catchment populations	Minimum reasonable accessibility standards at different gross densities (assuming bendy routes)			
		40ppha	60ppha	80ppha	100ppha
Nursery/ first school	2,000	600m	500m	400m	400m

Primary/ middle school	4,000	800m	700m	600m	500m
Secondary School	8,000	1,200m	1,000m	700m	700m
Secondary School (large)	16,000	1,500m	1,200m	1,000m	1,000m
Health Centre (4 doctors)	10,000	1,200m	1,000m	900m	800m
Local Shop	1,500	500m	400m	400m	300m
Pub	6,000	1,000m	800m	700m	600m
Post Office	5,000	800m	700m	600m	600m
Community Centre	4,000	800m	600m	600m	500m
Local Centre	6,000	1,000m	800m	700m	600m
District Centre/ Superstore	24,000	1,900m	1,500m	1,300m	1,200m
Leisure Centre	24,000	1,900m	1,500m	1,300m	1,200m

Barton et al. (2003)

- A.4.6 An audit of existing facilities, comprising shops, health centres and community facilities is provided in the figure A.2 'Baseline Review of Existing Facilities and Services'. In order to gain an appreciation of the level of service provision that falls within the advisory geographical catchment of the development site, the accompanying map includes a series of 'pedsheds'. These have been derived from measurement of actual walking routes and cover a selection of the threshold distances in Tables A.26 and A.27, thus enabling cross-reference to the level of community facilities and service provision that currently exists in the site environs. The findings of this cross-referencing exercise are set out in Table A.28.
- A.4.7 As set out previously, whilst it is assumed that the density of development at Barry Waterfront will be between approximately 100 and 110 persons per hectare (ppha), there is a need to account for the much lower densities of the surrounding area. Consequently calculations have been carried out at average densities of 60ppha, 80ppha and 100ppha to give a range of scenarios for overall existing provision and future need.
- A.4.8 Table B.3 provides a schedule of the services and facilities that are associated with the local schools, which has also taken into account considerations relating to the existing quantum of community services available within the environs of the Barry Waterfront site.
- A.4.9 Tables A30 and A31 are generated from relevant statistics published in the Vale of Glamorgan Council's 'Single Education Plan: Working together for Children, Young People and Communities across the Vale 2006-2008'. This provides an indication of existing and projected student numbers across the schools that fall within the catchment of prospective residents of Barry Waterfront development.

Figure A.26 - Welsh Index of Deprivation: Access to Services

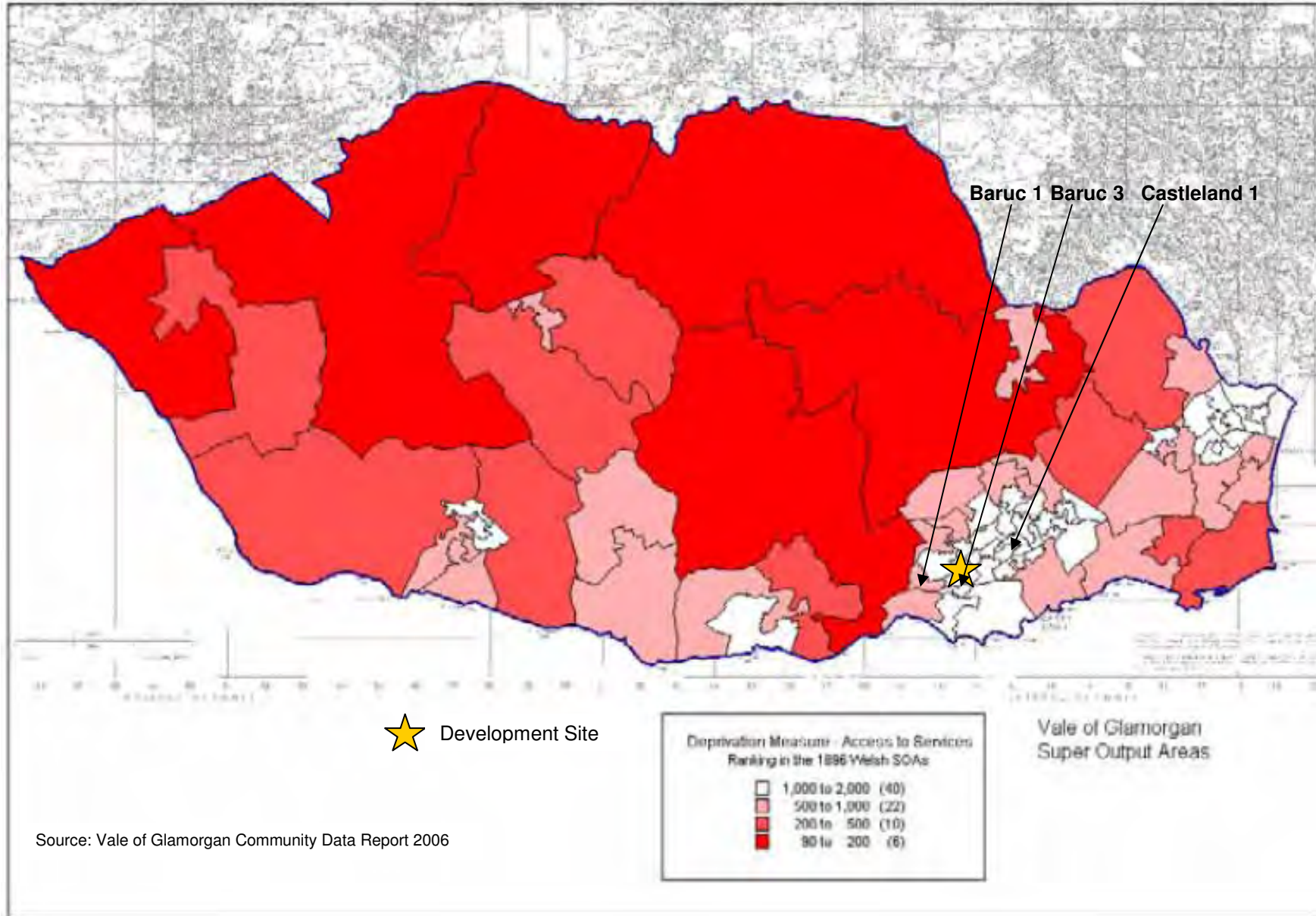


Table A.28 - Schedule of Available Services and Facilities Surrounding the Masterplan Area

Service/ Facility	Distance from site	Detail of Provision
Health Centres	3 within 400m	1. Waterfront Medical Centre: 6 doctors; 1 retainer doctor; 5 practice nurses; 8 additional health care staff 2. High Street Family Practice: 8 doctors; 4 practice nurses; 1 nurse practitioner; 1 health care assistant 3. Broad Street Clinic: NHS clinic
	1 within 400- 1000m	1. Porthceri Surgery: 2 doctors; 3 nursing staff
	2 within 1000-1300m	1. Salisbury Road Surgery (connected to Willows Surgery): 4 doctors 2. Ravenscourt Surgery: 4 doctors
	2 over 1300m	1. Court Road Surgery: 5 doctors 2. Willows Surgery (see Salisbury Road Surgery)
Library	1 within 1300m	Barry Library: Largest selection of books in Vale and an extensive collection of music and DVDs; dedicated children's and youth areas; The children's area includes books, computers and games consoles craft workshops and storytimes. The library includes a community room, and will be a focal point for lifelong learning in the community: adult education classes; other learning events The first floor includes an IT suite and is a 'wireless hotspot'. Regular preschool storytimes; Clap, tap and rhyme sessions; Rhyme and sign sessions; Sign language storytime for hearing babies. Most buses travelling through or round Barry stop outside the main entrance on Ty Newydd Rd.
Local Shops/ Local Centre	At least 2 within 400m	Convenience stores
	Local centre covers an area ranging from within 400m of site to over 1300m from site	Comprises a range of high street shops
Banks	1 at 400m	Barclays Bank PLC Broad Street Parade CF62 7XN
	3 within 400-1000m	Barclays Bank PLC Holton Road Royal Bank of Scotland PLC Holton Road Lloyds TSB Bank PLC Holton Road

Open Space	3 within 400m	<ol style="list-style-type: none"> 1. children's play 2. football pitch 3. children's play
	3 within 400-1000m	<ol style="list-style-type: none"> 1. basketball courts 2. associated with school 3. associated with school
	2 within 1000-1300m	<ol style="list-style-type: none"> 1. children's play 2. multi use (large)
Post Offices	1 within 400m	Barry Island Post Office
	1 within 400-600m	Vale Street Post Office
	1 within 600-1000m	Colcot Road
Community Centres	1 within 600m	Barry Island Community Centre: Main Hall with stage; Kitchen; Disabled toilet; Lesser Hall with kitchen; Training room; Premises licence for 275 people. Current Activities: Yoga, Karate, Age Concern Travel Club, Darby and Joan, Kids Club, Belly Dancing, Computer Classes, Painting and Drawing, Parent and Toddler, Theatre for Kids, Whist, Youth Club, Sequence Dancing Rabbit Club
	1 over 1300m	Buttrills Community Association: Main Hall (Holds approx 100 people); Kitchen; Disabled toilet facilities. Current Activities: Dog Training, Smashers Group (disabled), Sure Start, Bingo Club, Karate, Football Tournaments
District Centre/ Superstore	1 within 400m	Morrisons Supermarket
	1 approx 400m	Costcutter Supermarkets
	1 within 400-1300m	Iceland Foods PLC (not on map)
Leisure Centre	1 within 1000m	Barry Leisure Centre: 5-a-side Football; Arts & Crafts; Badminton; Basketball; Boccia; Bouncy Castle; Children's Parties; Clubs for sports; Fitness Classes; Half term programme; Gym; Health suite Library; Martial Arts; Netball; Squash; Sunbed; Swimming
	1 approx 2.9km (7 minutes drive)	Colcot Leisure Centre: 8 Football pitches and 8 mini football pitches; 1 Rugby pitch; 1 Floodlit all weather pitch; 1 Badminton Hall; 1 Multi Functional Sports Hall (There are Sport England Guidelines suggesting a ten minute drive time in rural areas to Astroturf pitches)
Nursery/ first school	See table A.29	See table A.29

Primary/ middle school	See table A.29	See table A.29
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Table A.29 - Schedule of Services and Facilities Associated with Local Schools

School	Distance to Site	Detail of Provision
Barry Island Primary	Within 400m	Breakfast club and after school club (school open 8-6pm) - range of clubs for the children. Shared community garden. 'it's very much a community school' (head teacher)
High Street Primary	Within 1000m	After school club and breakfast club. No Public Open Space – large concrete yard. Two halls are used for community uses- the Harriers use them for athletics training
Ysgol Sant Baruc	Within 1000m	Information unavailable at time of research
Ysgol Sant Curig	Within 1000m	Information unavailable at time of research
Gladstone	Within 1000m	Information unavailable at time of research
Romilly Infants	Within 1000m	Currently going through amalgamation with neighbouring (Romilly) Junior school. No suitable facilities at present.
Romilly Junior	Within 1000m	Used by the wider community every night of the week- large Dutch barn with a 'sports floor' and electric lighting. Used for boxing and football amongst other activities.
Holton Primary	Approx 1300m	None- have a school hall but would need to employ caretaker to open it so don't.
St Helen's RC Infants	Approx 1300m	Information unavailable at time of research
St Helen's RC Junior	Approx 1300m	Sports field Hall- used by a gym club on a Saturday

Table A.30 - Primary School Capacity Status Projections

School	Distance to Site	Age Range	Standard Admission Number	School Capacity	Current Surplus %	Number on Roll (NOR) January 2006	Number of Places Forecast 2009	Number of Places Forecast 2010	Number of Places Forecast 2011	Number of Nursery Places (part time)	NOR Nursery Classes (Jan 2006)
Barry Island Primary	Within 400m	4-11	36	173	-14%	148	161	163	161	52	30
High Street Primary	Within 1000m	4-11	30	213	0%	212	199	193	198	52	25
Ysgol Sant Baruc	Within 1000m	4-11	30	201	-1%	199	199	199	197	52	32
Ysgol Sant Curig	Within 1000m	4-11	60	423	-22%	331	352	346	355	52	51
Gladstone	Within 1000m	4-11	47	320	0% (over-capacity: 13%)	361	329	323	331	52	52
Romilly Infants	Within 1000m	4-7	70	262	-14%	226	222	218	222	52	47
Romilly Junior	Within 1000m	7-11	85	369	-9%	336	313	315	291	n/a	0
Holton Primary	Approx 1300m	4-11	90	589	-30%	415	403	381	383	52	48
St Helen's RC Infants	Approx 1300m	4-11	60	148	-5%	140	154	154	158	52	47
St Helen's RC Junior	Approx 1300m	7-11	60	187	0% (over-capacity: 16%)	217	202	191	197	n/a	0

Table A.31 - Secondary School Capacity Status Projections

School	Distance to Site	School Capacity	Number on Roll (NOR) January 2006	Forecast NOR January 2008	Forecast 2009	Forecast 2010	Forecast 2011	Surplus %
Barry Comprehensive School	Over 1300m	1489	1362	1372	1367	1344	1319	-11.4%
Bryn Hafren Comprehensive School	Over 1300m	1524	1242	1232	1215	1185	1164	-22.2%

Appendix B Final Sustainability Appraisal Framework

Table B.1 – Sustainability Appraisal Framework: Final Localised Sustainability Requirements

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?	Relevant elements of SPG Sustainability Checklist
National Targets/Ecohomes/ BREEAM				
<p>Requirement for site to support the Wales 2011 carbon zero target. (NAFW speech ref)</p> <p>The Council is one of 45 new local authorities participating in the fifth phase of the Carbon Trust's Local Authority Carbon Management. (LACM)</p>	<p>Barry Waterfront 2 is required under Ecohomes 2006 to achieve Ecohomes Excellent as was the case in Barry Waterfront 1.</p> <p><i>S106 from Barry Waterfront 1:</i></p> <p><i>Schedule 3 states that all Residential "Units meet the "Eco-Homes – excellent" rating current at the date hereof (or such other equivalent standard from time to time in force) and for all commercial leisure and retail buildings to meet BREEAM "excellent" standard (or such other equivalent standard from time to time in force) with an aspiration for both Units and commercial leisure and retail buildings to achieve carbon neutral status by 2011".</i></p> <p><i>Rationale for Adjustment:</i></p> <p><i>Site required under Ecohomes 2006 and achievement of excellent is within the contract of sale. This requirement</i></p>		<p>The overall scoring for Ecohomes is a matter for the Ecohomes Assessor employed by the developer. This assessment seeks to ensure that the elements of the Ecohomes assessment have been considered alongside other sustainability principles.</p>	<p>Undertake an Ecohomes, BREEAM, or NHER standards assessment to determine the overall environmental performance of the proposal;</p> <p>An Ecohomes assessment is required for affordable housing funded through Social Housing Grant;</p> <p>BREEAM assessment is required for WAG procured buildings</p>

¹ The Code for Sustainable Homes: Technical Guide (April 2008) published by Communities and Local Government (CLG) was used as a comparator alongside the Ecohomes criteria. Although not formally used as part of the assessment, the Code allowed more detailed recommendations to be made at the design stage assessment where it was felt improvements could be made to the overall sustainability of the Masterplan. This is only applicable to the first iteration of the assessment, where detailed recommendations were made for the further development of the masterplan.

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
	<i>demonstrates a flexible approach to the sustainable development of the site. Consequently, not all of the assessment criteria need to be addressed, as long as the 'score' overall is sufficient to achieve a rating of 'excellent'.</i>				
Management					
Ecohomes rating Man1: Home User Guide Provision of a guide for each home to cover 'non-technical' guidance on environmental performance of home and in relation to site and surroundings.	No adjustment to be made (maximum credits sought)	CSH Man 1 Home User Guide A Home User Guide, compiled using Checklist Man 1 Part 1 together with information that the guide is available in alternative accessible formats (2 credits) Where the guide also covers information relating to the site and its surroundings, compiled using Checklist Man 1 Part 2 (1 credit)	1	Include provision for a home user guide?	Undertake an Ecohomes, BREEAM, or NHER standards assessment to determine the overall environmental performance of the proposal
Ecohomes rating Man2: Considerate Constructors Commitment to comply/exceed best practice site management principles.	The development seeks to achieve the maximum number of credits (2)	CSH Man 2 Considerate Constructors Scheme Where there is a commitment to meet Best Practice under a nationally or locally recognised certification scheme such as the Considerate Constructors	2	Seek that the Considerate Constructors Scheme is signed up to?	Undertake an Ecohomes, BREEAM, or NHER standards assessment to determine the overall environmental performance of the proposal

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<p>Scheme (1 credit)</p> <p>Where there is a commitment to go significantly beyond Best Practice under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme (2 credits)</p>			
Low/Zero Carbon Energy Sources and Systems					
<p>Ecohomes rating PoI4: Renewable and Low Emission Energy Source</p> <p>Where evidence provided demonstrates that a feasibility study considering renewable and low emission energy has been carried out and the results implemented</p> <p>AND</p> <p>Where evidence provided demonstrates that the first credit has been achieved and 10-15% of total energy demand for the development is supplied from local renewable, or low emission, sources (in</p>	<p>This will likely be achieved through solar water heating, and micro-CHP to generate 10% of demand.</p> <p><i>Rationale for adjustment:</i></p> <p><i>Feasibility Study to assess (in line with VoGC Sustainability Checklist):</i></p> <p><i>PVs (Photovoltaics);</i></p> <p><i>solar water heating;</i></p> <p><i>small/medium scale wind;</i></p> <p><i>micro/macro CHP;</i></p> <p><i>geothermal (potential with underfloor heating); and</i></p> <p><i>any other potential technologies that may arise through investigation of site conditions.</i></p> <p><i>Additional generative capacity may be possible which will become apparent</i></p>	<p>CSH Ene 7 Low or Zero Carbon (LZC) Technologies</p> <p>Credits are awarded based on the percentage reduction in total carbon emissions that result from using Low or Zero Carbon (LZC) Energy Technologies for each dwelling using the calculation method detailed in Calculation Procedures, with credits awarded as detailed below:</p> <p>Where energy is supplied from local renewable or low carbon energy sources funded under the Low Carbon Building Programme (or similar), or is designed and installed in a manner endorsed by a feasibility study</p>	<p>3</p>	<p>Integrate all feasible methods of renewable and low emission energy sources?</p>	<p>Solar Photovoltaics (PVs);</p> <p>Solar water heating;</p> <p>Small scale wind;</p> <p>Biomass;</p> <p>Combined Heat and Power (CHP);</p> <p>Geo thermal.</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
line with the recommendations of the feasibility study)	<i>through the results further stages of the feasibility study, including wind power. The current requirement will be targeted in the interim.</i>	prepared by an independent energy specialist AND There is a 10 per cent reduction in carbon emissions as a result of this method of supply. (1 credit) OR There is a 15 per cent reduction in carbon emissions as a result of this method of supply. (2 credits)			
Site Layout and Density, Energy Conservation and Efficiency/ Street Lighting to Minimise Pollution					
<p><u>Layout and Density</u> Barry SPG/ SD SPG (Site Layout and Density): The orientation and topography of buildings and their scale need to address local environmental conditions. The following should be integrated and maximised into buildings: Passive Solar Design Natural Daylighting and ventilation</p>	No adjustment to be made.		4	<p>Layout and orientation maximise passive solar gain and natural daylighting and ventilation?</p>	<p>Topography and site orientation; Orientation of buildings utilises and benefits from solar gain; Passive solar design; Natural daylighting; Natural ventilation</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?	Relevant elements of SPG Sustainability Checklist																		
<p>SD SPG (Energy Conservation and Efficiency) Developers are encouraged to improve the energy efficiency within a building: Providing energy efficient boilers – condensing boilers are the most efficient “conventional” system</p> <p>Ecohomes rating Pol2: NOx emissions (heating and hot water systems) 95% of dwellings throughout the development must be served by heating and hot water systems with an average NOX emission rate of less than or equal to the levels listed below. Less than or equal to 100 NOx mg/kWh Less than or equal to 70 NOx mg/kWh Less than or equal to 40 NOX mg/kWh</p> <p>Ecohomes rating Ene4:</p>	<p>No adjustment to be made (maximum credits targeted)</p>	<p>CSH Pol2 NOx emissions Credits are awarded on the basis of NOX emissions arising from the operation of space heating and hot water systems for each dwelling, in accordance with the table below:</p> <table border="1" data-bbox="1032 756 1391 1431"> <thead> <tr> <th colspan="3">Criteria</th> </tr> <tr> <th>Dry NOX level (mg/kWh)</th> <th>Boiler class (BS EN 297: 1994)</th> <th>Credits</th> </tr> </thead> <tbody> <tr> <td><100</td> <td>4</td> <td>1</td> </tr> <tr> <td><70</td> <td>5</td> <td>2</td> </tr> <tr> <td><40</td> <td>–</td> <td>3</td> </tr> <tr> <td colspan="2">Default Cases Where all space heating and hot water energy requirements are fully met by systems which do not produce NOX emissions.</td> <td>3</td> </tr> </tbody> </table>	Criteria			Dry NOX level (mg/kWh)	Boiler class (BS EN 297: 1994)	Credits	<100	4	1	<70	5	2	<40	–	3	Default Cases Where all space heating and hot water energy requirements are fully met by systems which do not produce NOX emissions.		3	<p>5 Seek to provide energy efficient boilers and white goods?</p>	<p>Reduce energy consumption e.g. installation of A rated appliances, condensing boilers, etc.</p>
Criteria																						
Dry NOX level (mg/kWh)	Boiler class (BS EN 297: 1994)	Credits																				
<100	4	1																				
<70	5	2																				
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Default Cases Where all space heating and hot water energy requirements are fully met by systems which do not produce NOX emissions.		3																				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>Eco Labelled white goods</p> <p>Provision of eco labelled white goods with the following energy ratings:</p> <p>All fridges, freezers, fridge-freezers with an A* rating</p> <p>All washing machines, and dishwashers where supplied, with an A rating and washer dryers and tumble dryers with a rating of B or higher</p> <p>OR</p> <p>No white goods provided but info on eco labelling</p>		<p>CSH Ene5: Energy Labelled White Goods</p> <p>Credits are awarded where information is provided relating to the provision of energy efficient white goods, or where energy efficient white goods are supplied in accordance with the criteria in the table below for each dwelling:</p> <p>Where the following appliances are provided and have an A+ rating under the EU Energy Efficiency Labelling Scheme:</p> <p>Fridges and freezers or fridge-freezers (1 credit)</p> <p>Where the following appliances are provided and have an A rating under the EU Energy Efficiency Labelling Scheme:</p> <p>Washing machines and dishwashers</p> <p>AND EITHER</p> <p>Washer-dryers or tumble dryers have a B rating</p>			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<p>OR</p> <p>Where washer-dryers or tumble dryers are not provided, information on the EU Energy Labelling Scheme is provided to each dwelling where this is the case</p> <p>Note: Where washer dryers are provided it is not necessary to provide a washing machine to obtain this credit (1 credit)</p> <p>If no (or not all) white goods are provided but information on the EU Energy Efficiency Labelling Scheme of efficient white goods is provided to each dwelling where this is the case (1 credit)</p>			
<p>Lighting</p> <p>Ecohomes rating Ene5: Internal lighting (low energy lights)</p> <p>Where 75% dedicated low energy lights have been specified</p> <p>Ecohomes rating Ene6: External lighting (CFLs)</p> <p>Space Lighting</p>	<p>No adjustment to be made (maximum credits targeted)</p> <p>The development will seek to achieve maximum credits through this rating. This will not include the provision of security lighting, although sufficient space lighting will be accommodated.</p>	<p>CSH Ene3: Internal Lighting</p> <p>Credits are awarded for the provision of fixed dedicated energy efficient internal light fittings as follows:</p> <p>Where >40% of fixed internal fittings are dedicated and energy efficient. (1 credit)</p> <p>Where >75% of fixed internal fittings are dedicated and</p>	<p>6</p>	<p>Require that all lighting is energy efficient and minimises pollution?</p>	<p>Street lighting designed to reduce light pollution and other environmental impacts;</p> <p>Low energy street and other external lighting.</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>All space lighting is specifically designed to accommodate only compact fluorescent lamps (CFL)</p> <p>Security Lighting</p> <p>All intruder lighting to be 150 watts and be fitted with PIR and day light sensor and</p> <p>All other type of security lighting to accommodate CFLs or fluorescent strips only and be fitted with dawn to dusk sensors or timers.</p> <p>The use of LEDs for illuminated road furniture is specified. High accuracy photoelectric cells could also be used to switch lights on and off. (SD SPG)</p> <p>Directing light more accurately on designated areas, without any up lighting, will reduce glare (light pollution) and also energy consumption as making fewer lights more</p>		<p>energy efficient. (2 credits)</p> <p>CSH Ene6: External Lighting</p> <p>Where all external lighting within the development is provided by dedicated energy efficient fittings, as follows:</p> <p>Space Lighting (1 credit)</p> <p>Where all external space lighting, including lighting in the common areas, is provided by dedicated energy efficient fittings.</p> <p>Note: Statutory safety lighting is not covered by this requirement</p> <p>Security Lighting (1 credit)</p> <p>Where all security light fittings are designed for energy efficiency and are adequately controlled such that:</p> <p>All burglar security lights have:</p> <ul style="list-style-type: none"> • A maximum wattage of 150 W AND • Movement detecting control devices (PIR) AND • Daylight cut-off sensors <p>All other security lighting:</p> <ul style="list-style-type: none"> • Has dedicated energy efficient 			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
focused will remove the need for more streetlights. (SD SPG) drainage		fittings AND• Is fitted with daylight cut-off sensors OR timers Default Cases If no security lighting is installed, then the security lighting credit can be awarded by default, provided all the conditions of the first issue covering space lighting have been met. (1 credit) Dual lamp luminaires with both space and security lamps can be awarded both credits provided they meet the above criteria for energy efficiency (2 credits)			
Ecohomes rating Ene3: Drying space Provision of drying space	No adjustment to be made (maximum credits targeted)	CSH Ene4: Drying Space Where space with posts and footings or fixings capable of holding 4m+ of drying line for 1–2 bed dwellings, and 6m+ of drying line for 3+ bed dwellings, is provided for drying clothes. The space (internal or external) should be secure. (1 credit)	7	Allow for the provision of internal or external drying space?	Provision of internal drying space or external communal drying area

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?	Relevant elements of SPG Sustainability Checklist
Low embodied energy material and resource efficiency				
<p>It is recommended that the decision on which materials are to be used is considered early in the design process and that choice should be made in terms of quality, durability, and appropriateness to the context and also the amount of embodied energy within that material.</p> <p>Ecohomes rating Mat1: Environmental impact of materials</p> <p>The following elements obtaining an A rating from the Green Guide for Housing:</p> <ul style="list-style-type: none"> Roof External walls Internal walls- party walls and internal partitions Floors Windows External surfacing 	<p>The development is seeking to achieve credits through the materials for external walls, internal walls (party), floors, external surfacing and boundary protection.</p> <p><i>Rationale for adjustment: Other elements will not be considered due to financial and design constraints.</i></p>	<p>CSH Mat 1 Environmental Impact of Materials</p> <p>There is a mandatory requirement with no available credits to achieve a Green Guide rating of between A+ and D for at least three of the following five elements of the building envelope:</p> <ul style="list-style-type: none"> • Roof • External Walls • Internal Walls (including separating walls) • Upper and Ground Floors (including separating floors) • Windows <p>Between 1 and 15 credits are available depending on the Green Guide ratings and relative distributions of different materials across the five main elements of the building envelope.</p>	<p>8</p> <p>Include the implementation of decisions relating to the use and sourcing of low embodied materials and resources?</p>	<p>Use reclaimed or recycled materials;</p> <p>Materials sourced from sustainable sources e.g. FSC certified timber;</p> <p>Use natural energy efficient materials e.g. timber, stone etc</p> <p>Sustainable construction techniques e.g. straw bale, green roofing etc.</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
Boundary protection					
<p>Ecohomes rating Mat2: Responsible sourcing of materials: basic building elements</p> <p>Where the majority of the materials in the following basic building elements are responsibly sourced:</p> <ul style="list-style-type: none"> Frame Ground Floor Upper Floors (including any loft boarding) Roof (structure and cladding) External Walls (including external cladding) Internal Walls (including internal partitions) Foundations/ substructure Staircase (including the tread, rises and stringers) 	<p>Achieving a balance between environmentally responsible suppliers that may be national and sourcing materials locally from organisations that may not have formal accreditation, may lead to difficulties in achieving credits under this rating.</p>	<p>CSH: Responsible Sourcing of Materials – Basic Building Elements</p> <p>Points are awarded where materials used in key building elements are responsibly sourced according to the following criteria:</p> <p>Where 80% of the assessed materials in the following Building Elements are responsibly sourced:</p> <ul style="list-style-type: none"> a) Frame b) Ground floor c) Upper floors (including separating floors) d) Roof e) External walls f) Internal walls (including separating walls) g) Foundation/substructure (excluding sub-base materials) h) Staircase 			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<p>Additionally, 100% of any timber in these elements must be legally sourced (credits 1-6)</p>			
<p>Ecohomes rating Mat3: Responsible sourcing of materials: finishing elements</p> <p>Where the majority of materials in the following secondary building and finishing elements are responsibly sourced:</p> <p>Stair (including handrails, balustrades, banisters, other guarding/ rails (excluding staircase))</p> <p>Window (including sub-frames, frames, boards, sills)</p> <p>External and internal door (including sub-frames, frames, linings, door)</p> <p>Skirting (including architrave, skirting board and rails)</p> <p>Panelling (including any other trim)</p> <p>Furniture (including fitted;</p>		<p>Mat 3: Responsible Sourcing of Materials – Finishing Elements</p> <p>Where 80% of the assessed materials in the following Finishing Elements are responsibly sourced:</p> <ul style="list-style-type: none"> a) Stair b) Window c) External & internal door d) Skirting e) Panelling f) Furniture g) Fascias h) Any other significant use <p>Additionally, 100% of any timber in these elements must be legally sourced (credits 1-3)</p>			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
kitchen, bedroom, and bathroom) Fascias (soffit boards, bargeboards, gutter boards, others) Any other significant use					
Ecohomes rating Ene1: Dwelling Emission Rate (SAP 2005 CO₂ emissions) Credits are awarded to achieve SAP 2005 CO ₂ emissions as follows: (minimum points): less than or equal to 40kg/m ² /yr (maximum points) 'true zero' carbon solutions: less than or equal to 10kg/m ² /yr	The development will seek to achieve CO ₂ emissions of less than or equal to 22kg/m ² /yr, using a variety of different measures including enhanced building performance. <i>Rationale for adjustment: Using a standard condensing boiler, 3 credits would be possible under this rating. However, the consortium is seeking to ensure that the development is as energy efficient as possible within its constraints.</i>	CSH Ene 1: Dwelling Emission Rate Credits are awarded based on the percentage improvement in the Dwelling Emission Rate (DER), (estimated carbon dioxide emissions in kg per m ² per annum arising from energy use for heating, hot water and lighting for the actual dwelling), over the Target Emission Rate (TER) (the maximum emission rate permitted by Building Regulations), for the dwelling where DER and TER are as defined in AD L1A 2006 Edition of the Building Regulations. To achieve Level 4 of the Code the % improvement of DER over TER of >44%	9	Include the characteristics likely to achieve a reduced CO₂ emissions rating?	
Ecohomes rating Ene2:	No adjustment to be made (maximum	CSH Ene 2 Building Fabric	10	Include characteristic	

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>Building Envelope Performance (thermal performance based on Heat Loss Parameter)</p> <p>Up to 2 credits awarded where thermal performance based on the Heat Loss Parameter (HLP) method meets the following requirements:</p> <p>For new build:</p> <p>Where the HLP is less than or equal to 1.1 W/M2K</p>	credits targeted)	<p>Credits are awarded based on the Heat Loss Parameter (HLP) for each dwelling, in accordance with the table below:</p> <p>Heat Loss Parameter (HLP)</p> <p><1.30 (1 credit)</p> <p><1.10 (2 credits)</p>		that will result in the HLP being less than or equal to 1/1W/M2K?	
<p>Ecohomes rating Pol1: Insulation ODP and GWP</p> <p>Specifying insulating material, that avoid the use of ozone depleting substances and have a global warming potential (GWP) of less than 5 or more (and an ODP of zero), in either manufacture or composition, for the following elements:</p> <p>Roof (incl. roof hatch)</p> <p>Wall- internal and external</p>	No adjustment to be made (maximum credits targeted)	<p>CSH Pol 1 Global Warming Potential (GWP) of Insulants</p> <p>Credits are awarded where all insulating materials in the elements of the dwelling listed below only use substances that have a GWP < 5 (manufacture AND installation):</p> <ul style="list-style-type: none"> • Roofs: including loft access • Walls: internal and external including lintels and all acoustic insulation • Floors: including ground and 	11	Include insulation with a GWP of less than 5?	

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
(incl. all doors, lintels and all acoustic insulation) Floor (incl. foundations) Hot water cylinder (incl. pipe insulation and other thermal store)		upper floors <ul style="list-style-type: none"> • Hot water cylinder: pipe insulation and other thermal stores • Cold water storage tanks: where provided • External doors (1 credit) 			
Reuse of brownfield land and remediation-reuse of contaminated land at high density development (see other themes) UDP: 4.4.2 South Quay: remedial works will be necessary UDP: (5.4.8) It is recommended that further development of this site is subject to consultation with the Environment Agency given that part of the site lies within 250 metres of a former landfill site.	<i>Arup is addressing potential contaminated land issues- which currently suggest constraints on over half of East Quay and whole of South Quay Density of development is covered under footprint ratio.</i>		12	Re-use contaminated land?	
Waste Management					
Ecohomes rating Mat4:	External storage facilities not targeted	CSH Was 1 Storage of non-	13	Propose a waste	Internal

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?	Relevant elements of SPG Sustainability Checklist
<p>Recycling facilities Recycling of household waste (max points) Provision of internal AND external storage (or LA collection) SD SPG: Take account of the Council's recycling targets UDP Policy 13: Development proposals which encourage sustainable principles for waste disposal based on a hierarchical approach of: Waste minimisation/avoidance; Re-use of waste; Waste recycling or recovery (including waste conversion to energy); and Waste disposal land fill with minimal environmental impact; Will be favoured. Municipal Waste Management Strategy (VoGC 2004):</p>	<p>due to the design and density of development on site. Internal storage targeted.</p>	<p>recyclable waste and recyclable household waste The first issue of non-recyclable waste storage sets a mandatory performance requirement with no available credits. This requirement must be met if a Code rating is to be achieved. Adequate internal space and adequate external space are defined in the definitions section. Credits are awarded for the provision of storage space for household and recycling waste, in accordance with the criteria below. Care should be taken to make sure that facilities are accessible to disabled people. Mandatory for all levels: Storage of non-recyclable waste The space allocated for waste storage should be able to hold containers with a volume of containers provided for waste storage should be at least the minimum recommended by British Standard BS 5906</p>	<p>management strategy, to encourage the movement of waste up the hierarchy?</p>	<p>recycling/separation facilities; Communal external recycling/separation facilities; Re-use/recycle existing building materials;</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>Enhancement of the network of 'Bring Sites', to include the provision of a number of strategically located community-based recycling centres.</p>		<p>(British Standards, 2005) i.e. 100 litres volume for a single bedroom dwelling, with a further 70 litres volume for each additional bedroom.</p> <p>A Local Authority recycling scheme offering containers equal to or greater than this volume would meet the requirement, providing adequate external space is allocated to accommodate them. If the Local Authority provides containers with a smaller volume, or if no Local Authority scheme exists, the developer will need to ensure and demonstrate that the minimum recommended volume is met.</p> <p>All containers must be accessible to disabled people (Checklist Was 1), particularly wheelchair users, and sited on a hard, level surface. To allow easy access, the containers must not be stacked.</p> <p>2 Credits:</p> <p>Storage of recyclable</p>			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<p>household waste</p> <p>Dedicated internal storage for recyclable household waste can be credited where there is no external storage for recyclable material, no Local Authority Collection Scheme and where the following criteria are met:</p> <p>At least, three internal storage bins:</p> <ul style="list-style-type: none"> • all located in an adequate internal space • no individual bin smaller than 15 litres • minimum total capacity 60 litres <p>4 Credits</p> <p>A combination of internal storage capacity, provided in an adequate internal space, with:</p> <ul style="list-style-type: none"> • either a Local Authority Collection Scheme; or • adequate external storage. <p>A Local Authority Collection Scheme must meet at least one of the following</p>			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<p>requirements:</p> <p>where recyclable household waste is sorted after collection and at least a single 30 litre bin is provided in an adequate internal space (and with a collection of at least fortnightly)</p> <p>where materials are sorted before collection and at least three separate bins are provided with 30 litres total capacity. Every bin provided must have at least 7 litres capacity and be located in an adequate internal space (and with a collection of at least fortnightly)</p> <p>an automated waste collection system which collects at least 3 different types of recyclable waste</p> <p>External storage space, but no Local Authority collection scheme</p> <p>There must be at least three identifiably different internal storage bins for recyclable waste, located in an adequate internal space:</p>			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<ul style="list-style-type: none"> • with a minimum total capacity of 30 litres • where every bin has at least 7 litres capacity <p style="text-align: center;">AND</p> <p>For houses, an adequate external space must be provided for storing, at least, three external bins for recyclable waste:</p> <ul style="list-style-type: none"> • with a minimum total capacity of 180 litres • with no individual bin smaller than 40 litres • all bins should be located within 30 m* of an external door. <p>For blocks of flats, a private recycling scheme operator must be appointed to maintain bins and collect recyclable waste regularly. Recycling containers must:</p> <ul style="list-style-type: none"> • be located in an adequate external space • be sized according to the frequency of collection, based on guidance from the recycling scheme operator 			

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		<ul style="list-style-type: none"> • store at least 3 types of recyclable waste in identifiably different bins • be located within 30 m* of an external door.* Where strategic reasons outside the control of the developer make it impossible to meet this requirement, the maximum allowable distance is 50 m, and a written justification must be provided to the Code Service Provider. <p style="text-align: center;">Was 3 Composting 1 credit:</p> <ul style="list-style-type: none"> • Individual home composting facilities. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • A local communal or community composting service, which the Local Authority runs or where there is a management plan in place. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • A Local Authority green/kitchen waste collection scheme, including an 			

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		automated waste collection system. All facilities must also: <ul style="list-style-type: none"> • be in a dedicated position • be accessible to disabled people (Checklist 1) • have an information leaflet that is delivered to each dwelling 			
<p>Reuse recycle existing building materials Implementation of on site waste management during construction Developers should at a very early stage, consider opportunities for reusing and recycling waste both on and off site</p> <p>Ecohomes rating Man3: Construction Site Impacts Evidence that demonstrates a commitment and a strategy to monitor, sort and recycle construction waste on site</p>	<p>No adjustment to be made. Phasing will improve the impact of earthworks. The masterplan will accommodate this.</p>		14	<p>Demonstrate a commitment and a strategy to monitor, sort and recycle construction waste on site including the reuse of building materials?</p>	<p>Implementation of an on site waste management scheme during construction</p>

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Water conservation and sustainable drainage				
<p>Ecohomes rating Wat1: Internal potable water use (max points) less than or equal to 32m³ per bedspace per year (8.33)</p> <p>Installation of water efficient fixtures such as low/dual flushing toilet systems, or waterless urinals and toilets (SD SPG)</p> <p>Incorporate dual water supplies wherever possible, for example grey water for toilet flushing; landscaping, on-site water storage for fire fighting (SD SPG)</p> <p>Installation of low water use appliances such as low water use washing machines and dishwashers (A rated white goods) (SD SPG)</p>	<p>The development will seek to achieve an internal potable water use of less than or equal to 42m³ per bedspace, to achieve 3 credits out of a possible 5.</p> <p><i>Rationale for adjustment: A previous study estimated that internal potable water use would be 47m³ per bedspace per year: an improvement is being sought.</i></p>	<p>CSH Wat 1: Indoor water use</p> <p>Up to 5 credits are available for performance which reduces the amount of potable water used in the dwelling. There are minimum mandatory performance requirements for achieving all levels of the Code. The minimum mandatory requirements begin at level 1 increasing at level 3 and again at level 5. Credits are available for all the indoor potable water performance levels required in the Code. They are awarded according to the predicted average water consumption calculated using the Code Water Calculator (see Calculation Procedures). The table below gives the details.</p> <p>For Levels 3/4 the minimum Water consumption (litres/person/day) is: <105 l/p/day (3 credits)</p>	<p>15</p> <p>Incorporate the use of features which will encourage the conservation of water resources alongside safeguarding water quality?</p>	<p>Installation of dual water supplies e.g. rainwater run-off for toilets and/or grey water reuse;</p> <p>Installation of low/dual flush toilets;</p> <p>Installation of rainwater collectors for landscape maintenance and/or domestic garden use;</p> <p>Installation of water efficient A rated white goods;</p> <p>Use natural techniques, such as reed bed filtration system to treat waste water</p>

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<p>Ecohomes rating Wat2: External potable water use</p> <p>Rainwater collection system for watering gardens and landscaped areas (1.67) (& SD SPG)</p>	<p>No adjustment to be made (maximum credits targeted)</p>	<p>CSH Wat2: External Water Use</p> <p>One credit is awarded for providing a system to collect rainwater for use in irrigation as follows:</p> <p>Where a correctly specified and sufficient sized system to collect rainwater for external/internal irrigation use has been provided to a dwelling with a garden, patio or communal garden space (examples of such systems include rainwater butts and central rainwater collection systems)</p> <p>(1 credit)</p> <p><i>Default Cases</i></p> <p>If no individual or communal garden spaces are specified or if only balconies are provided, the credit can be awarded by default</p> <p>(1 credit)</p>			
<p>Indigenous planting schemes that include drought tolerant species to reduce the need for</p>	<p>No adjustment to be made.</p>				

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watering (SD SPG)					
Use of local groundwater sources for purposes such as cooling in air-conditioning plants (SD SPG)	<p>Not possible due to site conditions. To be removed from the requirements.</p> <p><i>Rationale for adjustment: Due to the nature of the site, it is not possible to use groundwater from the development area.</i></p>				
Need to improve water quality (SD SPG)	<p>Safeguard existing good water quality.</p> <p><i>Rationale for adjustment: Improvement is not considered necessary due to existing high quality - Bathing Water Quality on Barry Island: sufficient/good/excellent. The approach should be on maintenance of quality only - potential contamination should be mitigated, such as through the use of petrol interceptors.</i></p>				
<p>SD SPG:</p> <p>Developers are encouraged to work with the Council and the Environment Agency to incorporate SUDS in all new development to reduce the risk of flooding, the pollution to watercourse and to minimise negative impacts on biodiversity. This</p>	<p>Achieve a finished floor level of 8.8m AOD</p> <p><i>Rationale for adjustment: EA consultation</i></p> <p>Provide alternative rear access to frontage properties</p> <p><i>Rationale for adjustment: EA consultation</i></p> <p>No adjustment to be made (maximum credits targeted) Any potential SUDS</p>	<p>CSH Sur 1 Management of Surface Water Run-off from developments</p> <p>Mandatory Elements must be achieved. Up to 2 credits are available for further improving management of rainfall runoff.</p> <p>The following are mandatory:</p> <p>Ensure that the peak rate of runoff into watercourses is no greater for the developed site</p>	16	<p>Incorporate the appropriate use of SUDS?</p>	<p>Installation of Sustainable Urban Drainage;</p> <p>Soakaways;</p> <p>Permeable surfacing;</p> <p>Swales and basins;</p> <p>Infiltration trenches and filter drains;</p> <p>Ponds and wetlands;</p> <p>Onsite stormwater</p>

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<p>should be considered at the earliest stages of master planning or layout design. Early consultation with the Council is advised. The Council will make use of planning conditions or legal agreements to secure implementation of SUDS where appropriate. Examples of techniques include:</p> <ul style="list-style-type: none"> Soakaways Permeable Surfacing Swales and Basins Infiltration Trenches and Filter Drains Ponds and Wetlands On site Stormwater Detention (OSD) Reed Bed Filtration Green Roofs <p>Ecohomes rating Pol3: Reduction in surface runoff</p> <p>Where rainwater holding facilities and/or sustainable drainage</p>	<p>must be contained above ground level.</p> <p><i>Rationale for adjustment: The nature of the site means that certain SUDS techniques are not appropriate.</i></p> <p><i>The presence of gulls in this coastal location means that green roofs are not appropriate, as the gulls would dominate the habitats created (green roofs may have been possible for a cumulative benefit for SUDS and ecological mitigation)</i></p> <p><i>The Environment Agency has advised that it is not possible to include SUDS that allow water to permeate into the ground. Therefore, the vast majority of SUDS systems are not appropriate.</i></p> <p><i>The appropriateness of SUDS schemes is being investigated by ARUP.</i></p> <p>2.</p> <p>3.</p>	<p>than it was for the pre-development site (see definition). This should comply with the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004), or for at least the 1 year and 100 year return period events.</p> <p>For sites of less than 200ha, the calculation of Greenfield runoff rates should be in accordance with Flood estimation for small catchments (Marshall and Bayliss, 1994) and any subsequent updates.</p> <p>For sites of 200ha and more, the calculation of Greenfield runoff rates should be in accordance with the Flood estimation handbook (Centre for ecology and hydrology, 1999) and any subsequent updates.</p> <p>An allowance for climate change should be made in accordance with current best practice (PPS25, 2006).</p> <p>Ensure that the additional predicted volume of rainwater</p>		<p>detention;</p> <p>Green roofs.</p>	

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<p>techniques are used to provide attenuation of water run-off to either natural watercourse and/or municipal drainage systems, by 50% in areas of low probability of flooding, 75% in areas of medium flood risk, and 100% in areas of high flood risk, at peak times from:</p> <p>Hard surface runoff Roof runoff</p> <p>(where a statutory body requires a greater attenuation then the higher requirement should be met in order to achieve these credits)</p>		<p>discharge caused by the new development, for a 1 in 100 year event of 6 hour duration including an allowance for climate change (PPS25, 2006), should be reduced using infiltration and/or made available for use in the dwelling as a replacement for potable water use in non-potable applications such as WC flushing or washing machine operation.</p> <p>Where this additional rainwater volume cannot be prevented from being discharged for any reason, for all events up to the 100-year return period, the peak discharge rate from the site should be reduced to:</p> <p>the pre-development site's estimated mean annual flood flow rate (Qbar); or • 2l/s/ha; or a minimum flow rate (litres per second), based on good practice guidelines to prevent easy blockage, by ensuring the outlet throttle is not too small.</p> <p>If rainwater is discharged to a</p>			

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		<p>public sewer or adopted surface water sewer, flow rate requirements will be defined by the Sewerage undertaker.</p> <p>2 credits are available for using SUDS to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters by:</p> <ol style="list-style-type: none"> 1. Ensuring no discharge to the watercourse for rainfall depths up to 5mm (follow guidance in the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004). or 2. Establish agreements for the ownership, long term operation and maintenance of all sustainable drainage elements used <p>Default Cases:</p> <p>Credits can be awarded by default if the site discharges rainwater directly to a tidal estuary or the sea, because compliance with discharge</p>			

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		flow rate requirements will not be required.			
<p>Ecohomes rating Po15: Flood Risk Mitigation</p> <p>Where evidence provided demonstrate that the assessed development is located in a zone defined as having a low annual probability of flooding</p> <p>OR</p> <p>Where evidence provided demonstrate that the assessed development is located in a zone defined as having medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the site's location.</p>	<p>The development seeks to achieve 1 credit from a maximum of 2.</p> <p><i>Rationale for adjustment: The development is sited within an area of medium probability of flooding and as such the development will be raised above this level. (as a result of raising the building plateau, there may be potential for the EA to consider reclassifying the land to a lower probability, which could result in the ability to achieve 2 credits)</i></p>	<p>CSH: Sur 2 Flood Risk</p> <p>EITHER</p> <p>2 credits are available for developments situated in Zone 1 – low annual probability of flooding (as defined in PPS25 – ‘Planning and Flood Risk’) and where the site specific Flood Risk Assessment (FRA) indicates that there is low risk of flooding from all sources.</p> <p>OR</p> <p>1 credit is available for developments situated in Zones 2 and 3 – medium and high annual probability of flooding where the finished ground floor level of all habitable parts of dwellings and access routes to the ground level and the site, are placed at least 600mm above the design flood level of the flood zone.</p> <p>The Flood Risk Assessment (FRA) accompanying the planning application must</p>	17	<p>Demonstrate flood risk mitigation techniques?</p>	<p>Topography and site orientation</p>

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		demonstrate to the satisfaction of the local planning authority and statutory body that the development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed.			
Landscape, Trees and Ecology					
<p>SD SPG: Supply of survey data and other ecological information to accompany planning applications where appropriate: EIA of other ecological assessments and surveys Minimise effect on ecology during construction Securing post-development management, monitoring and review for biodiversity on development sites Use of locally sourced plants, which are</p>	<p>The development will ensure that the requirements of the SPG are met. However, Ecohomes ratings Eco1-4 will not be targeted. <i>Rationale for adjustment: An Extended Phase I Habitat Survey, undertaken in February and March 2008 revealed a limited mosaic of habitats, principally comprised of semi-improved neutral grassland, ruderal 'Brownfield' vegetation established over spoil heaps, bare ground and concrete, and scattered and dense scrub. These habitats and other features present were considered capable of supporting protected or otherwise notable flora and fauna including Badgers, amphibians, reptiles, nesting birds, bats and invertebrates.</i></p>	<p>CSH Eco 1 Ecological Value of the Site 1 credit Where the development site is confirmed as land of inherently low ecological value EITHER By meeting the criteria for low ecological value (using Checklist Eco 1 – Land of Low Ecological Value under Checklists and Tables below) OR By being confirmed by a Suitably Qualified Ecologist</p>	18	<p>Seek to protect and enhance ecology wherever possible?</p>	<p>Landscape/amenity impacts including trees and green spaces; Ecological impacts assessed; EIA of other ecological assessment/surveys conducted; Retention of existing trees as part of the site layout/landscaping scheme; Incorporation of ecological mitigation or compensation measures; Creation of new wildlife</p>

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<p>appropriate to the local ecology of the site, when creating/ restoring habitat features or designing landscaping schemes.</p> <p>Ecohomes rating Eco1: Ecological value of site Building on land which is inherently of low ecological value</p> <p>Ecohomes rating Eco2: Ecological enhancement Enhancing the ecological value of the site through consultation with an accredited expert</p> <p>Ecohomes rating Eco3: Protection of ecological features Ensuring the protection of any existing ecological features on the site Incorporating appropriate measures for mitigation and compensation into development</p> <p>Ecohomes rating Eco4: Change of ecological value of site</p>	<p><i>In consideration of the likely development impacts, further ecological investigation, is being undertaken to advise on appropriate measures to avoid, limit and mitigate any impacts on these habitats and species. These include badgers, bats, reptiles, birds, amphibians, NVC of grassland/ruderal vegetation and invertebrate surveys, in addition to liaison and regular consultation with appropriate bodies such as CCW and the ecologists at Vale of Glamorgan County Borough Council.</i></p> <p><i>There are no sites with statutory nature conservation designations, such as Sites of Special Scientific Interest were noted within the site or the ecologically relevant adjoining areas, although two geological SSSIs were located within 400m of the boundary.</i></p> <p><i>Due to the intrinsic nature of the development, it will not be possible to improve the ecological value of the development site itself.</i></p>	<p>OR</p> <p>Where an independent ecological report of the site, prepared by a Suitably Qualified Ecologist, confirms that the construction zone is of low or insignificant ecological value</p> <p>AND</p> <p>Any land of ecological value outside the construction zone but within the development site will remain undisturbed by the construction works.</p> <p>CSH Eco 2 Ecological Enhancement</p> <p>1 credit</p> <p>Where a Suitably Qualified Ecologist has been appointed to recommend appropriate ecological features that will positively enhance the ecology of the site.</p> <p>AND</p> <p>Where the developer adopts all key recommendations and 30% of additional recommendations.</p> <p>CSH Eco 3 Protection of</p>		<p>habitats;</p> <p>Inclusion of post-development management, monitoring and review;</p> <p>Plant locally sourced indigenous trees and plants</p>

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(maximum points) A change of greater than +9 species		<p>Ecological Features</p> <p>Where all existing features of ecological value on the development site potentially affected by the works, are maintained and adequately protected during site clearance, preparation and construction works.</p> <p>(1 credit)</p> <p>Default Cases</p> <p>The credit can be awarded by default where the site has been classified as having low ecological value in accordance with Eco 1 – Ecological Value of the Site AND no features of ecological value have been identified.</p> <p>If a Suitably Qualified Ecologist has confirmed a feature can be removed due to insignificant ecological value or where an arboriculturalist has confirmed a feature can be removed due to poor health/condition (e.g. diseased trees which require felling, either for health and safety and/or conservation</p>			

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		<p>reasons), the credit can be achieved provided all other features are adequately protected in accordance with the ecologist's recommendations.</p> <p>CSH Eco 4 Change in Ecological Value of Site</p> <p>The ecological value before and after development is measured, and the overall change in species per hectare is:</p> <ul style="list-style-type: none"> • Minor negative change: between -9 and -3 (1 credit) • Neutral: between -3 and +3 (2 credits) • Minor enhancement: between +3 and +9 (3 credits) • Major enhancement: greater than +9 (4 credits) 			
<p>Ecohomes rating Eco5: Building Footprint</p> <p>Where the combined Floor area: Footprint ratio for all houses on the site is greater than 2:5:1</p> <p>AND</p>	<p><i>Maximum points can not be achieved due to the low density nature of the house types to be built, which are reflective of local character, thus fulfilling alternative sustainability objectives.</i></p>	<p>CSH Eco 5: Building Footprint</p> <p>1 credit</p> <p>For houses, where the Net Internal Floor Area: Net Internal Ground Floor Area ratio is greater than or equal</p>	19	<p>Achieve an adequate footprint ratio?</p>	

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<p>Where the total combined Floor area: Footprint ratio for all flats on the site is greater than 3:5:1</p> <p>OR</p> <p>Where the total combined Floor area: Footprint ratio for all dwellings on the site is greater than 3:5:1</p>		<p>to 2.5:1</p> <p>OR</p> <p>For blocks of flats, where the Net Internal Floor Area: Net Internal Ground Floor Area is greater than or equal to 3:1</p> <p>OR</p> <p>For a combination of houses and flats, a ratio of Total Net Internal Floor Area: Total Net Internal Ground Floor Area of all houses and flats (i.e. the Site Wide Footprint to Floor Area ratio) is greater than the area weighted average of the two target ratios above (see calculation procedures)</p> <p>2 credits</p> <p>For houses, where the Net Internal Floor Area: Net Internal Ground Floor Area ratio is greater than or equal to 3:1</p> <p>OR</p> <p>For block of flats, where the Net Internal Floor Area: Net Internal Ground Floor Area is greater than or equal to 4:1</p> <p>OR</p>			

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		For a combination of houses and flats, a ratio of total Net Internal Floor Area: Total Net Internal Ground Floor Area of all houses and flats (i.e. the Site Wide Footprint to Floor Area ratio) is greater than the area weighted average of the two target ratios above (see calculation procedures)			
<p>TAN12: Undertaking strategic landscape assessment : At the outset to define the capacity of the natural environment to absorb development. It is important that the qualities of the urban landscape are appreciated and considered in the design of development including its contribution to views and links to the open countryside (as well as internal important views- Barry SPG)</p>	<p>Retain physical a visual relationship with Waterfront and town. Creation of 'events' along the waterfront. <i>Rationale for adjustment: As previously developed land, it is determined that there is sufficient capacity within the natural environment of the docks area to absorb the development.</i></p>		20	Retain a visual relationship with the waterfront and the town?	<p>Boundary features such as hedges, stone walls and tree lines; Local building characteristics and important views.</p>
Barry SPG: Trees and structure	No adjustment to be made.		21	Propose a sustainable landscaping strategy?	Landscape/amenity impacts including trees

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<p>planting should be used to frame vistas and enhance open spaces and the scale of buildings. (also consider seasonal variation and local suitability of species)</p> <p>Thompson Street and Gladstone Link road: best opportunities to display a coordinated approach to tree planting.</p> <p>SD SPG: Where landscape schemes are appropriate, the developer must show that the planting proposals are sustainable and can be easily maintained.</p> <p>Where applicable a landscaping scheme must illustrate what existing landscaping is to be retained (including protection measures) together with full details of new planting.</p>					<p>and green spaces;</p> <p>Retention of existing trees as part of the site layout/landscaping scheme;</p> <p>Retention/enhancement of existing landscape features.</p>
<p>Barry SPG: The extensive waterside edge should act as a focal point for an attractive open</p>	<p>To be informed by S106 negotiations. The requirements for children's play space will be met in full.</p>		22	<p>Include an attractive open space network including space for children's play?</p>	<p>Landscape/amenity impacts including trees and green spaces;</p> <p>Allow for easy and safe</p>


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<p>space network.</p> <p>Policy REC 3 of the adopted UDP seeks open space of 2.43ha per 1000 projected population. Of which 0.7ha per 1000 is for children's playing space and 1.7ha per 1000 for outdoor sport. The Council has calculated the requirement at Barry Waterfront to be:</p> <p>3.5ha children's play space</p> <p>8.5ha outdoor sport.</p> <p>1.25ha of the children's play space should specifically be for outdoor play equipment. The remaining 2.3ha of children's play space is for designated land that provides the opportunity for casual and informal children's recreation within housing areas</p>	<p>The sport element may require a local adjustment to include a contribution to the provision of facilities off site.</p> <p>Section 106 Obligations from the previous Application include:</p> <p>Provide, lay out and equip a play area within each of the housing zones and transfer the play areas to the Council</p> <p>Maintain the areas of public open space and play areas for a period of 5 years and pay the Council an agreed commuted sum for the maintenance of the land for an additional period of 15 years</p> <p><i>Rationale for adjustment:</i></p> <p><i>The provision of facilities for sport may consist of offsite contributions, as there is already an adequate local supply of such facilities that could accommodate the new residents of the development.</i></p> <p><i>See Community Facilities below.</i></p>				<p>access to public open areas</p>
<p>Barry SPG:</p> <p>Provide network of greenspace/ wildlife corridors across Barry, to</p>	<p>No adjustment required.</p>		23	<p>Include a network of multipurpose wildlife corridors and pedestrian routes?</p>	<p>Landscape/amenity impacts including trees and green spaces;</p> <p>Maintains or improves</p>

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link Barry Island, the waterfront and the main town. Could act as pedestrian routes also.					the existing pedestrian and cycle network; Allow for easy and safe access to public open areas; Safe movement for children, pedestrians and disabled persons
Geology					
Landmap: Small areas with traces of former saltmarsh channels locally survive and conservation of such areas, including their sediment record of Quaternary climate change, could ensure that total loss of this record does not occur. Ensure that no surviving and potentially conservable features of geological or geomorphological significance are lost/damaged due to development or reclamation, etc, by	Site layout and proposed construction techniques will be developed to reflect the findings of site investigation work. Protection of any geological or geomorphological significance.		24	Contribute to the protection of any geological or geomorphological sites of significance?	

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implementing a RIGS survey to identify key sites, and adopt a strategy of temporary exposure recording to ensure that significant geological features exposed in temporary excavations are recorded					
Local Character and Urban Design					
<p>Barry SPG: New development should develop an individual identity that contributes to existing Barry character and there should be links between built heritage (traditional built form, character and detailing) and a visionary future. Environmental Quality should be high.</p>	<p>Vision for the site to achieve physical and design integration within existing town. Desire to reflect maritime and modern character in Barry Waterfront. <i>Rationale for adjustment:</i> <i>The site has the physical barrier of the railway line to the north, which has 2 road connections and one additional bridge connection. To the south connections to Barry Island are physically limited by a steep grass banked cliff (see meeting notes 22.02.08).</i> <i>The development brief will address the design ideals against the physical constraints.</i></p>		25	<p>Lead to the enhancement of local character and heritage through design?</p>	<p>Archaeological or historic interests; Boundary features such as hedges, stone walls and tree lines; Local building characteristics and important views</p>
<p>TAN12: Innovative design of public buildings as a powerful</p>					

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>regenerative tool</p> <p>Similarly high aspirations should apply to local buildings which have a more direct impact on peoples' lives.</p>					
<p>Barry SPG:</p> <p>Many structures and artefacts representing dockside heritage could be retained within new development.</p>	<p>Retain the dock wall.</p> <p>Safeguard access to the Mole through development.</p> <p>The development of the East Quay should enhance the setting of the Docks Offices.</p> <p><i>Rationale for adjustment:</i></p> <p><i>Barry's most impressive Victorian building, the Docks Office is somewhat isolated from the town by the railway line that carries both commercial and passenger traffic.</i></p>				
<p>TAN12:</p> <p>Noise abatement and privacy need to be addressed through design and construction techniques.</p> <p>Mixed uses should relate well to one another physically and offer opportunities for visual</p>	<p>Achieve 2000 units through development of high density and terraced format.</p> <p><i>Rationale for adjustment:</i></p> <p><i>Economic viability to deliver sustainability credentials.</i></p>				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
interest and originality. High density development should be innovative and high quality to create the perception of lower density.					
Transport and Movement					
Mixed uses within a development can make the most of opportunities for higher densities and intensive activity at locations with good access to public transport as well as reducing the need to travel. Ecohomes Rating Tra4: Home Office (provision of space) Provision of space, and services, for a home office	No adjustment to be made (maximum credits targeted) To be developed in relation to s106 obligations.	CSH Ene 9 Home Office Where sufficient space and services (as defined below) have been provided which allow the occupants to set up a home office in a suitable quiet room. (1 credit)	26	Seek to reduce the need to travel through the provision of home offices and mixed use development?	Mix of uses
Manual For Streets User Hierarchy:	No adjustment to be made.		See below		

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
 <p>WAG 2009 PPW Transport Hierarchy: Prioritise accessibility in the following order: Walking and cycling; Public transport; then Private motor vehicles.</p>					
1. Pedestrians Convenient routes, which are easy, safe and attractive to use through					
<p>Strong Links to the Town Centre/ Integration with existing settlement (SD SPG)</p> <p>The links between the Waterfront and Barry Town and Barry Island must be direct, broad, and should accommodate generous pedestrian and cycle access.</p> <p>Pedestrian and Cycle routes should connect to existing routes beyond the immediate development</p>	<p>Achieve integration of Barry Waterfront with Barry Town and Barry Island.</p> <p>Routes to be established between the development and Barry Island and Barry Town.</p>		27	<p>Reflect the manual for streets, and provide safe, convenient, easy and attractive routes for pedestrians?</p>	<p>Accessibility to neighbouring developments, local services and facilities;</p> <p>Connections to existing pedestrian, cycle, rights of way and public transport;</p> <p>Infrastructure layout accords to the transport user hierarchy;</p> <p>Maintains or improves existing pedestrian and</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
(SD SPG)					cycle network;
<p>Manual for Streets: Reflecting and supporting pedestrian desire lines in networks and detailed designs</p> <p>Creating networks of streets that provide permeability and connectivity to main destinations and a choice of routes (These should be defined through a legible built form and open space system that enables ease of orientation and identification. (Barry SPG))</p> <p>SD SPG: There should be routes to local facilities, public transport nodes; open spaces; long distance footpaths</p> <p>Disabled access routes</p> <p>Provide conveniently located pedestrian crossing points on busy sections of road</p> <p>Clear signposting and</p>	<p>No adjustment to be made.</p> <p>Additional considerations include: Create 'event' spaces along the Waterfront.</p> <p>Create Waterfront walk/ recreational route</p> <p><i>Rationale for adjustment:</i> <i>The most important direct link (Island Road between town and site) across the steam railway line will be made more welcoming.</i></p> <p>Section 106 Obligations from the previous Application include:</p> <ul style="list-style-type: none"> • Provision of pedestrian improvements at the junction of Western Square, Vere Street and Holton Road or the payment of a sum of £30,000 to the Council • Provision of pedestrian crossing facilities at the junction of Tynewydd Road and Gladstone Road 				<p>Safe movement for children, pedestrians and disabled persons;</p> <p>Maintain the transport user hierarchy</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
lighting Avoid gradients of over 1:20 Provide wayside seating at appropriate locations					
Barry SPG: Traffic calming measures would help add security for pedestrians (Barry SPG) Traffic calming techniques must be designed into a development from the initial layout or master planning stage	To be informed by discussions with the Vale of Glamorgan Council as to the status of existing routes and the results of Arup survey work. Section 106 Obligations from the previous Application include: <ul style="list-style-type: none"> • Implementation of traffic calming scheme in respect of Dock View Road 				
SD SPG: Home Zones are encouraged in both the planning and transport policies for new developments and existing streets. They are distinguished from other streets by having signed entry and exit points, which indicate the special nature of the street. Manual for Streets advocates:	Apply 'manual for streets' to route hierarchy: Streets have five principal functions; <ul style="list-style-type: none"> • place; • movement; • access; • parking; and • drainage, utilities and street lighting. (Manual for Streets) 				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>moving away from hierarchies of standard road types based on traffic flows and/or the number of buildings served</p> <p>designing to keep vehicle speeds at or below 20 mph on residential streets unless there are overriding reasons for accepting higher speeds</p>					
2. Cyclists: Direct, safe and attractive routes					
<p>SD SPG:</p> <p>Safe Cycle paths need to be integrated into the road system. Segregated cycling routes should be accommodated within distributor roads</p> <p>Provide joint pedestrian and cycle facilities only in circumstances where separate facilities for cyclists within the carriageway are not feasible, although pedestrian safety must not be compromised.</p> <p>Ensure that routes are as</p>	<p>No adjustment to be made</p>	<p>CSH Ene 8 Cycle Storage</p> <p>Credits are awarded where adequately sized, safe, secure, convenient and weather-proof cycle storage is provided for each dwelling in accordance with the following criteria:</p> <p>Where either individual or communal cycle storage is provided that is adequate, safe, secure, convenient and weather-proof (as defined in Relevant Definitions below) for the following number of cycles:</p> <p>1 credit</p>	<p>28</p>	<p>Reflect the manual for streets, and provide safe, direct and attractive routes for cyclists?</p>	<p>Connections to existing pedestrian, cycle, rights of way and public transport;</p> <p>Infrastructure layout accords to the transport user hierarchy;</p> <p>Maintains or improves existing pedestrian and cycle network;</p> <p>Safe movement for children, pedestrians and disabled persons;</p> <p>Provisions made for cyclists e.g. secure</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
continuous as possible, avoiding frequent stops or diversions.		<p>Studios or 1 bedroom dwellings – storage for 1 cycle for every two dwellings</p> <p>2 and 3 bedroom dwellings – storage for 1 cycle per dwelling</p> <p>4 bedrooms and above – storage for 2 cycles per dwelling</p> <p>OR</p> <p>2 credits</p> <p>Studios or 1 bedroom dwellings – storage for 1 cycle per dwelling</p> <p>2 and 3 bedroom dwellings – storage for 2 cycles per dwelling</p> <p>4 bedrooms and above – storage for 4 cycles per dwelling</p>			cycle storage; Maintain the transport user hierarchy
SD SPG: Link routes within developments to the wider cycle network.	<p>No adjustment to be made.</p> <p><i>Detail: The existing cycle route terminates next to the development site. This provides a key opportunity for the development to extend this network, to improve the connections between the town and Barry Island through the development.</i></p>				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>Ecohomes Rating Tra2: Cycle Storage Provision of cycle storage for: 50% of dwellings OR 95% of dwellings SD SPG: Provision of prominent, secure cycle parking which should be close to building entrances or inside buildings and should avoid the need to carry cycles over steps.</p>	<p>Maximum credits targeted.</p>				
<p>3. Public Transport</p>					

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>Ecohomes Rating Tra1: Public Transport</p> <p>80% of the development within 500m of a 15 min peak and a half hourly off peak service</p> <p>SD SPG: Convenient access for pedestrians should be provided with bus stops located no more than 400m from residential properties.</p> <p>Ease of access to rail facilities should be ensured.</p>	<p>Convenient access for 80% of development to be within 1000m of a 30min peak and a half hourly off peak service will be targeted.</p> <p><i>Rationale for adjustment:</i> <i>The rail service adjacent to East Quay is mainly used for chemical transportation traffic, and thus may not be suitable for public use.</i></p> <p><i>Possibility of reserving land for a potential future link across to Barry Town train station</i></p>		29	Create good access to public transport?	<p>Connections to existing pedestrian, cycle, rights of way and public transport;</p> <p>Infrastructure layout accords to the transport user hierarchy;</p> <p>Safe movement for children, pedestrians and disabled persons;</p> <p>Encourages public transport use;</p> <p>Maintain the transport user hierarchy</p>
<p>SD SPG: Adequate access for bus services and service vehicles should be provided. This should not, however, be at the expense of the safety and free movement of pedestrians and cyclists.</p>	<p>No adjustment to be made.</p> <p><i>Detail: Links to Barry Island station are good</i></p>				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>SD SPG: Passenger facilities, such as bus shelters and timetable information should be provided, in consultation with the Council.</p> <p>Other public transport enhancements may be required as part of the Council's Bus Strategy.</p>	<p>No adjustment to be made.</p>				
4. Private Motor Vehicles					
<p>SD SPG: New roads serving development should be designed for an average speed of 20mph or less, particularly at junctions and pedestrian/ cycle crossings.</p> <p>It should also be ensured that the transport user hierarchy is not sacrificed e.g. by limiting the use of roundabouts as these create difficult crossing points for pedestrians and cyclists.</p>	<p>To be informed by discussions with the Vale of Glamorgan Council as to the status of existing routes and the results of Arup survey work.</p> <p>Application of the 'Manual for Streets' to route hierarchy.</p> <p>The use of roundabouts will be avoided.</p> <p><i>Rationale for adjustment: To be informed by Arup survey work.</i></p>		30	Road design reflect the transport user hierarchy?	<p>Infrastructure layout accords to the transport user hierarchy;</p> <p>Maintain the transport user hierarchy.</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>Barry SPG: Large and extensive car parking areas should be avoided or suitably landscaped and smaller car parking areas should be encouraged.</p> <p>SD SPG: Reduced standard parking requirements in developments that are well served by public transport or accessible to a range of services and facilities (e.g. town centres)</p>	<p>To be informed by results of Arup survey work.</p> <p><i>Rationale for potential adjustment: Barry SPG (2006) supersedes the South Wales Parking Guidelines 1995.</i></p> <p><i>Possibility to integrate parking facilities for the retail and evening/ visitor activities in order to take advantage of different uses of the commercial area throughout the day.</i></p>				
<p>SD SPG: Residential parking should ideally be situated at the rear of properties to allow for pedestrian friendly site layout.</p>	<p>Application of on-street parking</p> <p><i>Rationale for adjustment: To reflect the character of terraced streets in Barry</i></p>				
<p>TAN12: Particular care should be taken to ensure that the design of infrastructure avoids severance and fragmentation of communities</p>	<p>No adjustment to be made.</p>				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?	Relevant elements of SPG Sustainability Checklist
Socio-economic considerations				
LDP: Requirement of 30% affordable housing	<p>Council requirement of c43% across the site</p> <p>To be informed by the forthcoming Housing Needs Assessment and S106 negotiations.</p> <p>Development Brief: Existing S106 refers to 20% affordable housing at Barry Waterfront.</p> <p>Potential to increase by 79 dwellings to allow for existing under-provision of Barry Waterfront</p> <p><i>Rationale for adjustment: Distribution yet to be determined. Client negotiating additional 20% across site.</i></p> <p><i>Target Residential apportionment: Residential Apartments 40% 800 units; 60% 1 bed, 40% 2 bed Housing 60% 1200 units; 40% 2 bed, 40% 3 bed, 20% 4 bed Affordable housing 20% as per existing S106, plus shortfall of 79 units from outstanding obligations from other sites.</i></p>		31 Seek to meet the housing needs of the local community?	

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
TAN12: Design solutions should provide access to the widest range of people possible.	No adjustment to be made.				
Design for Change					
TAN12: Design for change by promoting adaptable development that can respond to social, technological, economic and environmental conditions over time Block layouts maximise future adaptability	No adjustment to be made.	Hea 4 Lifetime Homes For a Level 6 assessment achievement of the Lifetimes Homes criteria is a mandatory requirement. (4 credits)	32	Layout reflect the potential need for adaptation over time?	
Design out Crime					
SD SPG: Site layout should be designed with safety in mind, and also provide full accessibility for all pedestrians as easy movements through the site can provide natural surveillance to discourage crime. Pedestrian and	No adjustment to be made (maximum credits targeted) Initial discussions with Architectural Liaison Officer for the Vale of Glamorgan: Dick Collins (01446 731627)	CSH Man 4 Security Credits are achieved by complying with Section 2 – Physical Security from ‘Secured by Design New Homes’, as follows: Where an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force is	33	Seek to design out crime?	Minimise the opportunities for crime

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
<p>cycle access should be overlooked.</p> <p>Ecohomes rating Man4: Security</p> <p>Commitment to work with an Architectural Liaison Officer and achieve Secured by Design Award Security Standards for external doors or windows to achieve a minimum of either: LPS1175SR1 (all doors and windows) OR PAS24-1 (all external pedestrian door-sets falling within the scope of PAS24-1) ANDBS7950 (all windows falling into the scope of BS7950)</p>		<p>consulted at the design stage and their recommendations are incorporated into the design of the dwelling (an actual Secured by Design Certificate is not required). (2 credits)</p>			
Health and well being					
<p>Ecohomes rating Hea1: Daylighting</p> <p>Provision of adequate daylighting, according to BS8026:pt2 in:</p> <p>The kitchen</p> <p>Living rooms, dining rooms and studies</p>	<p>The development will seek to achieve 2 out of a maximum of 3 credits for this rating, achieving adequate daylighting in the kitchen, living rooms, dining rooms and studies.</p> <p><i>Rationale for adjustment: It may not be possible to have a view of sky in all rooms due to the high density nature of</i></p>	<p>CSH Hea 1 Daylighting</p> <p>Credits are awarded for the dwelling meeting the criteria below:</p> <p>Kitchens must achieve a minimum average daylight factor of at least 2% (1 credit)</p> <p>All living rooms, dining rooms</p>	34	<p>Include the provision of adequate daylighting?</p>	<p>See site layout</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
View of sky in all above rooms	<i>the development.</i>	<p>and studies (including any room designated as a home office under Ene 9 – Home Office) must achieve a minimum average daylight factor of at least 1.5% (1 credit)</p> <p>80% of the working plane in each kitchen, living room, dining room and study (including any room designated as a home office under Ene 9 – Home Office) must receive direct light from the sky (1 credit)</p>			
<p>Ecohomes rating Hea2: Sound Insulation</p> <p>Up to 4 credits where pre-completion testing is carried out to comply or improve on performance standards in Approved Document E (2003 Edition, Building Regulations England and Wales)</p>	<p>Maximum credits will be targeted by the development.</p> <p><i>Rationale for adjustment: The achievement of the target may be dependent on the foundations of individual buildings.</i></p>	<p>CSH Hea 2 Sound Insulation</p> <p>Credits are awarded for achieving higher standards of sound insulation than those given in Approved Document E of the Building Regulations and demonstrating it by either using pre-completion testing or Robust Details as follows:</p> <p>1 credit</p> <p>Where:</p> <ul style="list-style-type: none"> • airborne sound insulation values are at least 3dB higher 	35	Incorporate adequate sound insulation?	

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<ul style="list-style-type: none"> • impact sound insulation values are at least 3dB lower <li style="text-align: center;">OR • airborne sound insulation values are at least 5dB higher • impact sound insulation values are at least 5dB lower <li style="text-align: center;">3 credits <li style="text-align: center;">OR • airborne sound insulation values are at least 8dB higher • impact sound insulation values are at least 8dB lower <li style="text-align: center;">4 credits <p style="text-align: center;">than the performance standards set out in the Building Regulations for England and Wales, Approved Document E (2003 Edition, with amendments 2004).</p> <p style="text-align: center;">This can be demonstrated through EITHER</p> <p style="text-align: center;">a programme of pre-completion testing based on the Normal programme of testing described in Approved Document E for every group</p>			

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		<p>or sub-group of houses or flats that demonstrates that the performance standard or standards above are achieved.</p> <p>OR</p> <p>use of constructions for all relevant building elements that have been assessed and approved by Robust Details Limited (RDL), and found to achieve the performance standards stated above and to register all relevant dwellings with RDL.</p> <p>Default cases</p> <p>Detached dwellings (4 credits)</p> <p>Attached dwellings where separating walls or floors only occur between non habitable rooms (3 credits)</p>			
<p>Ecohomes rating Hea3: Private Space</p> <p>Provision of private or semi private space</p>	<p>No adjustment to be made (maximum credits targeted)</p>	<p>CSH Hea 3 Private Space</p> <p>Where outdoor space (private or semi-private) has been provided that is:</p> <ul style="list-style-type: none"> • of a minimum size that allows all occupants to sit outside • allows easy access to all 	<p>36</p>	<p>Provide private or semi private space?</p>	

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
		occupants, including wheelchair users • accessible only to occupants of designated dwellings (1 credit)			
Community facilities					
Ecohomes Rating Tra3: Local Amenities Proximity to Local Amenities: Within 500m of a food shop and post box Within 1000m of 5 of the following: food shop, postal facility, bank/cash machine, pharmacy, primary school, medical centre, leisure centre, community centre, public house, children's play area, place of worship, outdoor open access public area Safe pedestrian routes to the local amenities	The development will seek to achieve the maximum credits available, as well as exceeding these requirements. Post Office, Health Centres: It is considered unlikely that further contributions or provision would be justified by the Barry Waterfront site proposals. <i>Rationale for adjustment:</i> <i>Local provision suggests that the existing post office facilities could comfortably serve the needs of the projected population increase arising from the development of the Barry Waterfront site.</i> <i>The site and its environs offer access to a good level of existing health provision.</i> Local Shops: it is recommended that a modest number of units suitable for local convenience retail are incorporated into the overall masterplan, preferably distributed evenly across the site. <i>Rationale for adjustment: Current levels</i>		37	Include the provision of additional facilities for community use?	Accessibility to neighbouring developments, local services and facilities

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
	<p><i>of local shop provision do not identify any significant deficits.</i></p> <p>Community Centre: the development will generate additional demand for existing facilities and prospective residents should look to benefit from and provide additional catchment population to support existing community centres and civic functions within the town (e.g. the theatre, library, leisure centre), which will underpin community integration</p> <p><i>Rationale for adjustment:</i></p> <p><i>It is not considered that the projected population increase associated with the Barry Waterfront site justifies a new community centre in the light of the existing provision to the north and south of the site.</i></p> <p>Leisure Centre: the development will generate additional demand for existing facilities and prospective residents should look to benefit from and provide additional catchment population to support existing provision, thus promoting integration between communities.</p> <p><i>Rationale for adjustment:</i></p> <p><i>The Barry Waterfront Site alone is not considered to merit the inclusion of a standalone leisure centre facility.</i></p>				

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
	<p><i>However, the development will generate additional demand for existing facilities.</i></p> <p><i>General rationale for adjustments: The December 2007 Sustainable Settlements Study for the Vale of Glamorgan LDP identified that that Barry benefits 'from a range of services and facilities more suited to meeting the day to day needs of the local community and can therefore sustain additional growth' without necessarily needing to ensure additional provision of such facilities. The sharing of existing facilities in the local community will enable an increased integration of the new and existing community. The improvement of links to Barry Town will improve access from the site to town centre services and facilities</i></p> <p><i>Primary Schools: see below</i></p> <p><i>Retail facilities: see retail</i></p>				
<p>Barry SPG: Establish The Waterfront as a social and leisure focal point for the town LDP Preferred Options (16.3): Development will include the continued regeneration</p>	<p>Barry Waterfront to become a complement to potential future development of the Mole for a marina and Barry Island on a rejuvenated 'destination'.</p> <p>The provision of facilities such as open space for informal recreation and retail opportunities will help to enable this</p>		38	<p>Lead to the establishment of the waterfront as a social and leisure focus for the town?</p>	<p>Mixed use development proposed</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
of Barry Waterfront into a high quality waterside development incorporating housing, leisure and recreational uses linked to further regeneration and maximising tourism opportunities at Barry Island.	objective to create a social and leisure focus for the town.				
UDP: Policy COMM3 Land is reserved for the development of schools at Barry Waterfront (1HA)	<p>To be informed by S106 negotiations.</p> <p>Section 106 Obligations from the previous Application include:</p> <p>Transfer to the Council at no cost of 1ha of land to be used for the provision by the Council of an educational facility</p> <p>Nursery / Primary Schools: Dependent on more detailed analysis of projected demographics of the target buyers for the Barry Waterfront site, there are two main options:</p> <ul style="list-style-type: none"> investment to increase capacity in existing schools off-site dedicated new-build provision on-site to deliver consolidation of existing school provision across the wider catchment <p><i>Rationale for adjustment:</i></p> <p><i>The target market for the Barry Waterfront development is considered likely to include young families, which will</i></p>		39	Lead to the provision of educational facilities for the town?	Mixed use development proposed

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
	<p><i>generate additional need for school spaces. Existing sites should accommodate c. 200 new pupils; however, it is recommended that solutions to additional longer term provision are considered.</i></p> <p>Secondary Schools: It is considered that there would be merit in exploring options for the provision of additional school bus services and the inclusion of safe walking routes through the site for designation as part of a wider 'Safe Routes to School' network.</p> <p><i>Rationale for adjustment:</i></p> <p><i>Projected pupil spaces suggest that existing provision should be capable of accommodating any increase in demand arising from the Barry Waterfront site. Both existing schools are beyond the 1300m pedshed</i></p>				
Retail					
<p>UDP: 7.4.10</p> <p>It is the intention of the council to accommodate the majority of future retail needs of the Vale within Barry Town Centre, or in those parts of Barry Waterfront close to the</p>	<p>S106 EXISTING:</p> <p>Target Commercial content:</p> <ul style="list-style-type: none"> • Food store 70,000sq ft • Hotel 30,000sq ft • Offices 50,000sq ft • retail A1-A5 +Health, 		40	<p>Incorporate the appropriate level of retail provision?</p>	<p>Mixed use development proposed</p>

General Requirement	Locally Adjusted Requirement	Code for Sustainable Homes Requirement (first iteration assessment) ¹	Summary Assessment Questions In accordance with the locally adjusted requirement, does the masterplan...?		Relevant elements of SPG Sustainability Checklist
Town Centre (see policy SHOP4)	<p>Nursery, Crèche 60,000sq ft</p> <p>Provision of following elements to be reviewed:</p> <ul style="list-style-type: none"> • Leisure 90,000sq ft • Employment 20,000sq ft <p>Local Centres: It is recommended that any additional provision within the Barry Waterfront site should be limited to modest local shops to serve the local population (it should be noted that the consideration of any facilities targeted at visitor needs is excluded from this assessment)</p> <p><i>Rationale for adjustment:</i> In order to meet the needs of the resident population, it is considered that existing provision in Barry Town Centre will be sufficient.</p> <p>District Centre / Superstore: the Retail Impact Assessment will provide further guidance as to necessary provision.</p> <p><i>Rationale for adjustment:</i> The analysis of existing provision suggests that further provision to meet community needs is not required.</p>				

Appendix C Assessment of Masterplan: First Iteration

C.1 Assessment of Masterplan: First Iteration

Table C.1 demonstrates the first stage in the sustainability assessment of the Masterplan document as originally proposed, namely map iteration SK102 shown in Appendix D. The assessment findings are summarised below, and provide recommendations to be incorporated into the following iteration of the Masterplan. The recommendations take into account the requirements of the Code for Sustainable Homes where these are more stringent than Ecohomes 2006.

It should be noted that in many cases the Masterplan design was not sufficiently advanced to allow an assessment to be undertaken at this stage. Where this was the case, the assessment highlighted the areas for which additional information was required.

Figure C.1 - Masterplan SK102

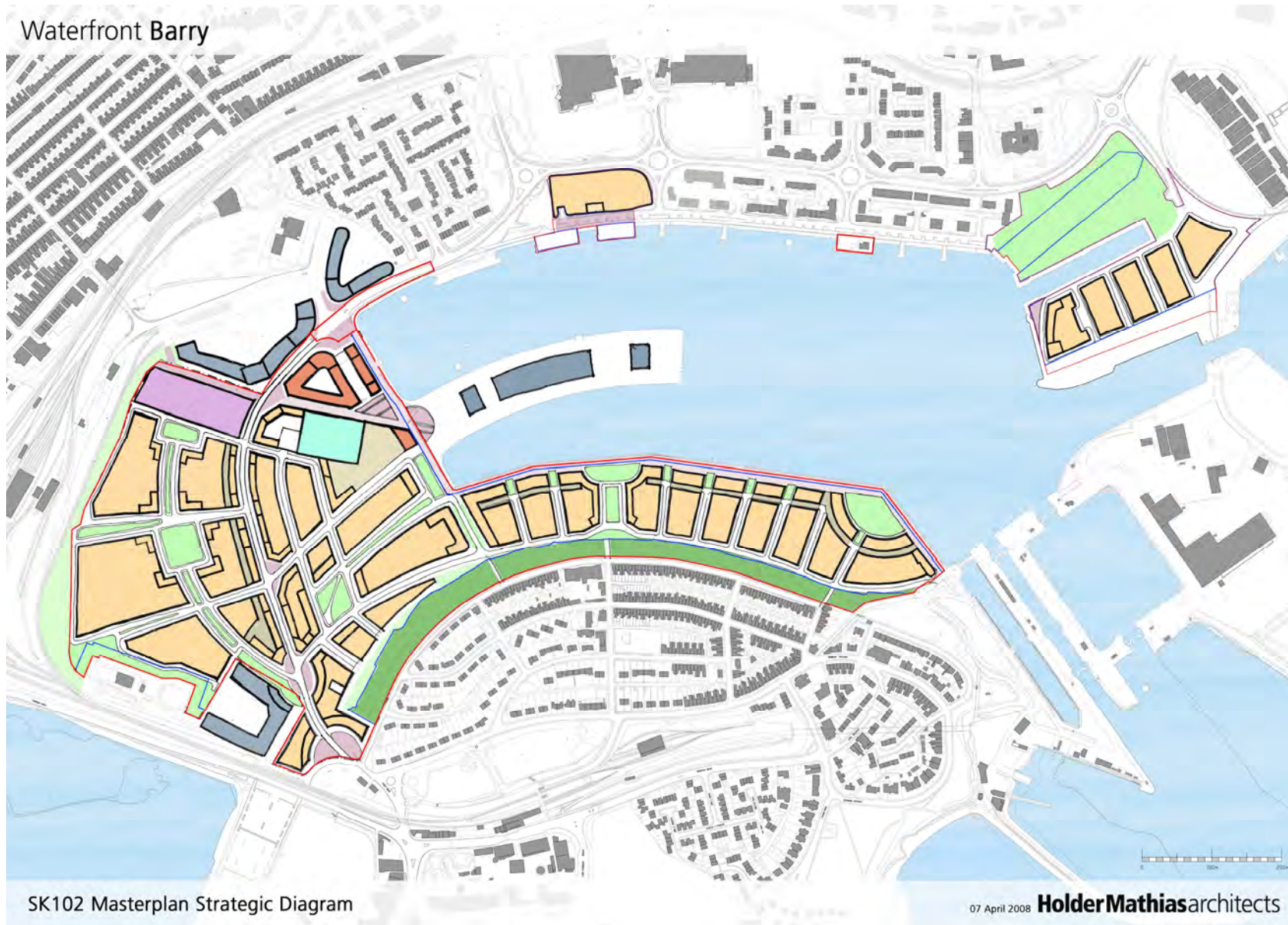


Table C.1 - First Iteration of Assessment of Masterplan: SK102

Issue not addressed at all where required
Issue insufficiently addressed and unlikely to be achieved if not addressed at early stage
Effect unknown/ Level of detail yet to be determined
Requirements met partially and further detail required
Requirements met in full
Requirements exceeded

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
Management			
1	Include provision for a home user guide?	Design not at sufficiently advanced stage to assess achievement of targets. However, it is understood to be housebuilder policy to prepare a Home User Guide for all new home owners, which should satisfy the requirement.	
2	Seek that the Considerate Constructors Scheme is signed up to?	Design not at sufficiently advanced stage to assess achievement of targets. However, it is understood to be housebuilder policy to operate their sites in accordance with best practice site management principles.	It is recommended that the development seek to go beyond best practice under the considerate constructor's scheme, in order to achieve Ecohomes 'excellent'.
Low/Zero Carbon Energy Sources and Systems			
3	Integrate all feasible methods of renewable and	Design not at sufficiently advanced stage to assess achievement of targets.	Additional generative capacity may be possible which will become apparent through the results further stages

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
	low emission energy sources?		of the feasibility study, including wind power. To achieve Ecohomes Excellent the contribution of low or zero emission energy sources will account for at least 15% of the dwellings energy consumption.
Site Layout and Density, Energy Conservation and Efficiency/ Street Lighting to Minimise Pollution			
4	Layout and orientation maximise passive solar gain and natural daylighting and ventilation?	The Masterplan demonstrates that the design is reflective of local conditions, including topography. Blocks are oriented to maximise solar gain, thermal efficiency and natural daylighting. This will also have implications for the potential for benefits from the solar heating for hot water (see renewables). Land uses that do not require these benefits, such as parking, are sited where local conditions, such as the cliff, restrict solar potential.	
5	Seek to provide energy efficient boilers and white goods?	Design not at sufficiently advanced stage to assess achievement of targets. The boilers fitted under the standard unit specification for all three Consortium members are understood to fall short of this requirement. This will have implications for the financial viability of the scheme. It is understood that the current standard white goods fitted by the three Consortium members fall short of this requirement. This will have implications for the financial calculations for the scheme.	The strategy for heating and hot water systems will need to be discussed and agreed between the Consortium members and guiding principles established. The strategy for white goods will need to be discussed and agreed between the Consortium members and guiding principles established.
6	Require that all lighting is energy efficient and minimises pollution?	Design not at sufficiently advanced stage to assess achievement of targets.	Recommend consideration of inclusion in development brief.
7	Allow for the provision of internal or external drying space?	Design not at sufficiently advanced stage to assess achievement of targets.	The Code for Sustainable Homes provides further detail on drying space, which should be considered as part of designs.

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
Low embodied energy material and resource efficiency			
8	Include the implementation of decisions relating to the use and sourcing of low embodied materials and resources?	Design not at sufficiently advanced stage to assess achievement of targets. It should be noted that the ratings are based on the Green Guide to Housing, which is due to be re-issued towards the end of May 2008 – the performance of standard housing units against the revised Guide will need to be reviewed. This could potentially have significant implications in relation to construction techniques and material selection/sourcing.	Further research should be undertaken to try to improve the number of materials used that have an ‘A’ rating. This will require a review of the forthcoming revision to the Green Guide for Housing. Achieving a balance between environmentally responsible suppliers, that may be national, and sourcing materials locally from organisations that may not have formal accreditation, may lead to difficulties in achieving maximum credits under this rating. This issue should be resolved.
9	Include the characteristics likely to achieve a reduced CO₂ emissions rating?	Design not at sufficiently advanced stage to assess achievement of targets. There are several interlinked factors that will have significant implications for the performance of the proposals against this criterion. These include: heating and hot water systems; thermal efficiency; lighting; potential for community energy supplies; renewables; layout etc.	Increased measures to improve the efficiency of the buildings may help to improve this emissions rate. Consideration needs to be given to utilising low to zero emission fuel sources. Agreement will need to be reached between the Consortium members regarding the specification of heating, hot water, insulation and other influential elements of unit design to ensure consistency in performance across the site. The Code for Sustainable Homes sets mandatory requirements under Ene 1: To achieve Level 4 of the Code the % improvement of DER over TER of >44%, which should be aimed for as part of the development.
10	Include characteristic that will result in the HLP being less than or equal to 1/1W/M2K?	Design not at sufficiently advanced stage to assess achievement of targets.	
11	Include insulation with a GWP of less than 5?	Design not at sufficiently advanced stage to assess achievement of targets.	There is a need for the Consortium to agree guiding principles for the specification of insulation to ensure

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
		However, building regulations will ensure that some credits will be achieved as standard.	consistency in performance across the site.
12	Re-use contaminated land?	The Masterplan will combine high density development on brownfield land, achieving this requirement in full. This will necessarily involve the remediation of any contaminated land, to bring it back into use.	Recommend consideration of inclusion in development brief.
Waste Management			
13	Propose a waste management strategy, to encourage the movement of waste up the hierarchy?	The Masterplan has not yet considered the locations of potential recycling/sustainable waste management facilities as part of the overall scheme.	<p>Suggest potential inclusion of facilities for sustainable waste management to be considered as part of designs, in accessible locations. This may be within the residential units themselves.</p> <p>Recommend consideration of inclusion in development brief and masterplan diagram</p> <p>It is recommended that composting facilities are also provided, in accordance with the Code for Sustainable Homes (Was 3 Composting).</p>
14	Demonstrate a commitment and a strategy to monitor, sort and recycle construction waste on site including the reuse of building materials?	<p>Design not at sufficiently advanced stage to assess.</p> <p>However, application of best practice in respect of air (dust) pollution and water pollution will be a condition of planning approval and will therefore be adhered to as a minimum.</p>	<p>Recommend consideration of inclusion in development brief. A minimum % of recycled building materials should be specified and agreed.</p> <p>CSH Was 2 contains mandatory elements with regards to the management of waste on site, and it is suggested that these requirements be adhered to. These are: Monitoring and reporting of waste generated on site in defined waste groups, and compliance with legal requirements as set in SWMP regulations 2008 for and with best practice. The plan should include the setting of targets to promote resource efficiency in accordance with guidance from</p>

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
			WRAP, Envirowise, BRE and DEFRA. Specific targets are not required.
Water conservation and sustainable drainage			
15	Incorporate the use of features which will encourage the conservation of water resources alongside safeguarding water quality?	Design not at sufficiently advanced stage to assess achievement of targets. The specification of kitchens and bathrooms will be a significant influencing factor on this criterion. This will have implications for the financial calculations. Although water quality is currently high, the Masterplan does not currently address the requirement to improve water quality locally.	This rating may be improved through a scheme that may include information for occupants on how to reduce water consumption. The use of dual flush toilets (i.e. 6/4 litres); low flow showers; aerated taps etc. is recommended to assist in achieving the requisite performance against this objective – this needs to be discussed and a specification agreed between the Consortium members. Recommend consideration and inclusion in development brief of methods to protect and improve water quality, such as ensuring that vegetation is an integral part of design, to provide necessary cleansing of potential pollutants. Petrol interceptors will also be a necessary feature.
16	Incorporate the appropriate use of SUDS?	Design not at sufficiently advanced stage to assess achievement of targets. However, there is understood to be an agreed commitment by the Consortium to incorporate water attenuation into the scheme and this is being developed by specialists (Arup) at present.	There are mandatory requirements under the Code for Sustainable Homes for surface water run off, which should be adhered to.
17	Demonstrate flood risk mitigation techniques?	Design not at sufficiently advanced stage to assess achievement of targets. However, there is understood to be an agreed commitment by the Consortium to raise the level of the site and this is being developed by specialists (Arup) at present.	

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
Landscape, Trees and Ecology			
18	Seek to protect and enhance ecology wherever possible?	<p>Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p> <p>Although the ecological characteristics of the site are being assessed, schemes for enhancement of biodiversity specifically have not yet been addressed. Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p> <p>The Masterplan has been developed ahead of the culmination of the habitat surveys, and thus has not integrated the results of these into the overall design which may be to the detriment of the current ecology. Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p> <p>Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p>	<p>Recommend consideration of inclusion of measures to enhance the biodiversity of the site to be incorporated wherever possible regardless of whether or not this contributes to the Ecohomes overall rating.</p> <p>Suggest incorporation of a strategy to enhance biodiversity as part of a network of green spaces throughout the development and inclusion within the design brief. This may include specific plants and habitats as identified in the Habitat Surveys. This should be done whether or not it contributes to the Ecohomes scores.</p> <p>Suggest allowance of flexibility in design until the results of the surveys and the need and mechanisms to protect species becomes available. This should be done whether or not it contributes to the Ecohomes scores.</p> <p>Recommend consideration of inclusion of measures to enhance the biodiversity of the site to be incorporated wherever possible regardless of whether or not this contributes to the Ecohomes overall rating.</p>
19	Achieve an adequate footprint ratio?	Design not at sufficiently advanced stage to assess achievement of targets.	
20	Retain a visual relationship with the waterfront and the town?	The Masterplan indicates the enhancing of several key views in and out of the development area. These include a key view through South Quay to Barry Island and from Barry Island to Arno Quay and a continuous frontage along the waterfront.	Suggest the consideration and diagrammatic mapping of key views, providing connectivity with the existing town and enhance the maritime setting. This might include the enhancing of views of the dock offices, and vistas to the water from further within the development. Suggest inclusion within development brief.
21	Propose a sustainable	The link road will be enhanced to make it more inviting and	Although not specified, the used of tree planting may

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
	landscaping strategy?	improve connectivity to the site with the town.	be one mechanism to achieve this objective and further integration of the development with the town. Recommend consideration of inclusion in development brief.
22	Include an attractive open space network including space for children's play?	The Masterplan demonstrates an open space network along the South Quay, as well as public realm space on the waterfront area of West Pond.	
23	Include a network of multipurpose wildlife corridors and pedestrian routes?	The Masterplan demonstrates a network of green spaces, predominantly for pedestrian access.	The network of green space should be further considered in relation to its value for wildlife and adjusted accordingly.
Geology			
24	Contribute to the protection of any geological or geomorphological sites of significance?	Design not at sufficiently advanced stage to assess. Site layout and proposed construction techniques will be developed to reflect the findings of Site Investigation work and securing the protection of any geological or geomorphological significance.	Recommend consideration of inclusion in development brief.
Local Character and Urban Design			

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
25	Lead to the enhancement of local character and heritage through design?	<p>The Masterplan design has specifically borne in mind the need to retain access to The Mole, and ensure flexibility in design to enable any future uses. The access road and the creation of a commercial core near to The Mole exemplify this strategy.</p> <p>The Masterplan sets out a series of land uses that have been considered thoroughly in terms of their relationship to one another.</p>	<p>Further detailed designs should detail how links to the existing town will achieve integration of design with the existing settlements.</p> <p>Recommend consideration of inclusion in development brief</p> <p>Recommend further consideration of the East Quay and its uses in order to seek to enhance the setting of the Docks Offices as an important building in the character of the Docks. Recommend that the dock wall is retained.</p> <p>Detailed designs should ensure that the need for visual interest and originality are prioritised.</p>
Transport and Movement			
26	Seek to reduce the need to travel through the provision of home offices and mixed use development?	<p>The location of the development will intensify development in this urban location, increasing development densities, where there is good access to services and facilities accessible by foot. The location of three rail stations and good bus links means that it is ideally situated to implement that transport hierarchy.</p> <p>Design not at sufficiently advanced stage to assess achievement of targets.</p> <p>However, in all dwellings of two bedrooms or more, there is significant potential for this to be achieved through the specification of power socket and telecommunications points and ventilation at relatively low cost per unit.</p>	<p>Walking and cycling links to the rail station should be promoted in the Masterplan.</p> <p>It is recommended that the Consortium members agree a standard approach that would result in the fulfilment of this criterion in all units of 2 bedrooms or more. The specific requirements are set out in Ecohomes and Code for Sustainable Homes and should be adhered to.</p>
1. Pedestrians Convenient routes, which are easy, safe and attractive to use			

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
27	Reflect the manual for streets, and provide safe, convenient, easy and attractive routes for pedestrians?	<p>The integration with the existing settlement is a key objective of the design of the development. This is evident through the masterplan document in the development of key gateways into the development, as well as the key routes connecting the site with Barry Island and Barry Town, which follow pedestrian desire lines.</p> <p>Although a network of streets exists, in general there are only main routes linking features. Thus, there appears to be a lack of choice of routes in the current scheme.</p> <p>Routes to local facilities and open spaces are fully addressed throughout the Masterplan.</p> <p>The Masterplan demonstrates the introduction of 20mph 'zones' which will help to slow traffic. Additionally, the creation of 'nodes' along the main route will add interest and generate more of a feeling of shared space, which will contribute to slower traffic speeds.</p> <p>The Manual for Streets is being used in the formulation of the Masterplan.</p>	<p>Permeability could be improved in further design stages by ensuring that blocks are broken up to improve connectivity.</p> <p>Access routes to rail facilities, especially the Barry Town station should be further considered, especially with regards to desire lines.</p>
2. Cyclists: Direct, safe and attractive routes			

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
28	Reflect the manual for streets, and provide safe, direct and attractive routes for cyclists?	<p>A cycle route has been established through the scheme, as part of the green space route through West Pond.</p> <p>The Masterplan currently does not address potential links to the wider Sustrans network.</p> <p>Design not at sufficiently advanced stage to assess achievement of targets.</p> <p>The incorporation of formal cycle storage will have implications in terms of land take and overall character and appearance of dwellings, dependent upon where it is accommodated.</p>	<p>Further detailed designs should consider the need for additional designated cycle routes to access all areas of the site as well as the town and Barry Island. These should be safe from road traffic and not hinder the safety of pedestrians. Routes should also be designed to connect into the wider Sustrans network, which passes in close proximity to the site.</p> <p>Linking the cycle network within the site to the wider national Sustrans route will provide a key connective element to improve the sustainable accessibility of the site.</p> <p>The development should seek to target 50% provision. This should comprise at least two cycle spaces for 3-bedroom housing and that the storage provision is safe and weatherproof.</p> <p>There is a need for the Consortium to discuss and agree a standard approach to the provision of cycle storage and ensure that this is reflected in the masterplan.</p>
3. Public Transport			
29	Create good access to public transport?	<p>The location of the development site in relation to local public transport services means that there is the potential for exceeding this requirement. At present, the Masterplan does not demonstrate how these key nodes, especially rail transport, will be accessed. Design not at sufficiently advanced stage to assess achievement of targets.</p>	<p>Access routes to public transport facilities, especially rail, should be considered fully in relation to their ease of access.</p> <p>The location of public transport facilities should be incorporated into the masterplan.</p> <p>Recommend consideration of inclusion in development brief.</p>
4. Private Motor Vehicles			

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
30	Road design reflect the transport user hierarchy?	<p>The Masterplanning process has considered the need for the lowering of speeds through the development.</p> <p>The transport and road strategy has ensured that the Masterplan does not include roundabouts, improving the pedestrian environment.</p> <p>The car parking area demonstrated on the Masterplan will serve multiple uses, including the potential food store, and the commercial/ mixed use core of the development.</p> <p>The accessibility of the area by public transport means that these parking requirements do not need to be extensive.</p> <p>The Masterplan seeks provision for on-street parking which reflects this requirement.</p> <p>The siting of road and educational infrastructure has been designed specifically to provide linkages with the existing community in order to improve integration within the development.</p>	<p>Further detailed design stages should explore the prioritisation of pedestrian and cyclist safety through traffic calming measures.</p> <p>Further consideration of the integration of public transport nodes, and the use of public transport by visitors to the development as well as residents should be considered.</p>
Housing Needs			
31	Seek to meet the housing needs of the local community?	Design not at sufficiently advanced stage to assess.	Recommend consideration of inclusion in development brief.
Design for Change			
32	Layout reflect the potential need for adaptation over time?	The Masterplan demonstrates the use of block layouts.	For a Level 6 assessment achievement of the Code for Sustainable Homes, Lifetime Homes criteria are a mandatory requirement.
Design out Crime			

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
33	Seek to design out crime?	Through designing the development to ensure active frontages along pedestrian routes, natural surveillance should discourage crime. The development is seeking to achieve a Secured by Design Award as well as achieving the minimum windows and doors security standards.	
Health and Wellbeing			
34	Include the provision of adequate daylighting?	Design not at sufficiently advanced stage to assess achievement of targets.	
35	Incorporate adequate sound insulation?	Design not at sufficiently advanced stage to assess achievement of targets. However, the standard unit construction used by the Consortium members is understood to be sufficient to achieve partial satisfaction of this criterion.	To achieve excellent the development must achieve at least 5dB beyond the requirements of Buildings Regulations and at least carry out acoustic tests in a minimum of 50% of dwellings at an early stage.
36	Provide private or semi private space?	Design not at sufficiently advanced stage to assess achievement of targets. However, the current masterplan envisages the provision of private rear gardens for houses and balcony amenity space for flatted units. This should achieve partial satisfaction of this criterion as a minimum.	The masterplan should specify the provision of private space, including an agreed standard for amenity space in flatted development.
Community Facilities			
37	Include the provision of additional facilities for community use?	Unable to assess due to ongoing discussions regarding suitability of the site for provision and the possibility of offsite provisions.	
38	Lead to the establishment of the waterfront as a social and leisure focus	The Masterplan has considered the future development of the Marina, allowing for flexibility in its strategy.	Suggest further consideration of potential land uses in the commercial/ mixed use core that will contribute to

No	Summary Assessment Question In accordance with the locally adjusted requirement, does the masterplan...?	Assessment	Recommendation
	for the town?	The Masterplan demonstrates a mixed use area that will provide retail opportunities. The provision of public squares, and a hotel amongst other social and leisure facilities will lead to the provision of a focus for the area from this perspective.	the attraction of the area for visitors.
39	Lead to the provision of educational facilities for the town?	The Masterplan includes the provision of an educational facility, although the exact nature of this provision is yet to be determined.	To be discussed with VoGC.
Retail			
40	Incorporate the appropriate level of retail provision?	Appraisal of this option is not yet possible. Awaiting the results of the Retail Impact Assessment alongside more detailed design proposals.	

C.2 Conclusions & Recommendations

Assessment of Masterplan SK102

Achievements

- C.2.1 The Masterplan, as presented in SK102, demonstrated that it was on course to meet some of the sustainability requirements as outlined below:
- The orientation and topography of buildings and their scale address local environmental conditions, to profit from passive solar benefits;
 - The Masterplan will combine high density development on brownfield land, achieving a sustainable use of resources. This will necessarily involve the remediation of any contaminated land, which will improve the local environment;
 - The high density development is located where there is good access to services and facilities accessible by foot. The location of three rail stations and good bus links means that it is ideally situated to implement the transport hierarchy;
 - Key gateways into the development, as well as the key routes connecting the site with Barry Island and Barry Town, follow pedestrian desire lines that will improve the integration of the site within the existing settlement;
 - The use of the Manual for Streets through the development of the Masterplan will ensure that a sustainable user hierarchy is employed;
 - The Masterplan development has considered the need for provision for bus and service vehicle access;
 - The transport and road strategy has ensured that the Masterplan does not include roundabouts, improving the pedestrian environment;
 - The Masterplan seeks provision for on-street parking which will reflect local design character;
 - The Masterplan demonstrates an open space network along the South Quay, as well as public realm space on the waterfront area of West Pond. This will create a focal point for an attractive open space network;
 - The siting of road and educational infrastructure has been designed specifically to provide linkages with the existing community in order to improve integration within the development avoiding the severance or fragmentation of communities;
 - The Masterplan demonstrates the use of block layouts, which will maximise future adaptability to social, economic or environmental change;
 - Through designing the development to ensure active frontages along pedestrian routes, natural surveillance will discourage crime;
 - The Masterplan provides a key mixed use element to include a commercial element at the waterfront. This will allow for the potential future development of the Mole into a marina; and
 - The Masterplan demonstrates the introduction of 20mph 'zones' which will help to slow traffic. Additionally, the creation of 'nodes' along the main route will add interest and generate more of a feeling of shared space, which will contribute to slower traffic speeds.

C.2.2 Elements of the Masterplan that could potentially meet the requirements

The following requirements could be met through the Masterplan if included as part of the development brief and integrated into subsequent plan iterations:

- It is recommended that the development seek to go beyond best practice under the considerate constructor's scheme, in order to achieve Ecohomes 'excellent';
- CSH Waste (Was) 2 contains mandatory elements with regards to the management of waste on site, and it is suggested that these requirements be adhered to;
- The Masterplan design has specifically borne in mind the need to retain access to The Mole, and ensure flexibility in design to enable any future uses. The access road and the creation of a commercial core near to the Mole exemplify this strategy. It is recommended that further consideration of the East Quay and its uses is undertaken, in order to seek to enhance the setting of the Docks Offices as an important building in the town's character;
- The Masterplan sets out a series of land uses that have been considered thoroughly in terms of their relationship to one another. Detailed designs should ensure that the need for visual interest and originality are prioritised;
- The Masterplan indicates the enhancing of several key views in and out of the development area. These include a key view through South Quay to Barry Island and from Barry Island to Arno Quay and a continuous frontage along the waterfront. It is suggested that the consideration and diagrammatic mapping of key views to be created, will improve connectivity with the existing town and enhance the maritime setting;
- Although not specified, the used of tree planting along main routes into the site may be one mechanism to achieve this objective and further integration of the development with the town;
- Permeability could be improved in further design stages by ensuring that blocks are broken up to improve connectivity;
- Internal potable water usage may be improved through a scheme that may include information for occupants on how to reduce water consumption, coupled with the specification of water efficient white goods, kitchens and bathrooms;
- Routes to local facilities and open spaces are addressed throughout the Masterplan. Access routes to rail facilities by walking and cycling, especially the Barry Town station should be further considered, especially with regards to desire lines.
- Further consideration of the integration of public transport nodes, and the use of public transport by visitors to the development as well as residents should be considered and identified on the masterplan;
- A cycle route has been established through the scheme, as part of the green space route through West Pond. Further detailed designs should consider the need for additional designated cycle routes to access all areas of the site as well as the town and Barry Island, ideally connecting into the existing Sustrans network. These should be safe from road traffic and not hinder the safety of pedestrians. The development should seek to target 50% provision. This should comprise at least two cycle spaces for a 3-bedroom housing and that the storage provision is safe and weatherproof as part of this sustainable transport regime; and
- The ecological value of the site is currently being assessed. Subsequent plan iterations should therefore include the recommendations arising from these studies, to ensure mitigation and compensatory measures are included where appropriate and the ecological value of the site is enhanced wherever possible. These should be incorporated wherever possible regardless of whether or not this contributes to the Ecohomes overall rating.

C.2.3 Priorities for Consideration at this Stage

In order to ensure that key sustainability requirements were achieved for the Barry Waterfront development it was recommended that the following requirements were considered as a matter of priority at this stage, before the Masterplan became more detailed:

- To achieve Ecohomes Excellent the contribution of low or zero emission energy sources will account for at least 15% of the dwellings energy consumption. Additional generative capacity may be possible which will become apparent through the results of further stages of the feasibility study, including wind power;
- Consideration needs to be given to utilising low to zero emission fuel sources. The Code for Sustainable Homes sets a mandatory requirements under Ene (Energy) 1: To achieve Level 4 of the Code the % improvement of DER over TER must be >44%, which should be aimed for as part of the development;
- To achieve Ecohomes excellent the development must achieve at least 5dB beyond the requirements of Buildings Regulations and at least carry out acoustic tests in a minimum of 50% of dwellings;
- For a Level 6 assessment achievement of the Code for Sustainable Homes, Lifetime Homes criteria are a mandatory requirement;
- There are mandatory requirements under the Code for Sustainable Homes for surface water run off, which should be considered;
- Inclusion of facilities for sustainable waste management should be considered, in accessible locations. It is recommended that composting facilities are also provided, in accordance with the Code for Sustainable Homes (Was (Waste) 3 Composting);
- Methods to protect and improve water quality, such as ensuring that vegetation is an integral part of design, to provide necessary cleansing of potential pollutants;
- Further research should be undertaken to try to improve the number of materials used that have an 'A' rating in order to improve the integrity of the built elements of the development. This will require a review of the forthcoming revision to the Green Guide to Housing (expected at the end of May 2008);
- Achieving a balance between environmentally responsible suppliers, that may be national, and sourcing materials locally from organisations that may not have formal accreditation, may lead to difficulties in achieving Ecohomes credits for the responsible sourcing of materials. This issue should be resolved in order that maximum sustainability benefits are achieved;
- Suggest incorporation of a strategy to enhance biodiversity as part of a network of green spaces throughout the development and inclusion within the design brief. This may include specific plants and habitats as identified in the Habitat Surveys. Suggest allowance of flexibility in design until the results of the surveys and the need and mechanisms to protect species becomes available;
- Linking the cycle network within the site to the wider national Sustrans route will provide a key connective element to improve the sustainable accessibility of the site;
- There are a number of criteria that will be strongly influenced by the specification of individual units within the development, which will have financial implications of varying significance in respect of the viability of the development. As such, the Consortium needs to discuss and agree a common approach to several key issues, the most pressing of which are considered to be the following:
 - heating and hot water systems – increased quality over current standard fit-out
 - eco-labelled white goods (A or A*)
 - insulation – high thermal efficiency and low ozone emission
 - layout of buildings
 - fenestration – for insulation, natural lighting, ventilation and sound insulation

- thermal efficiency
- water efficient kitchens and bathrooms (low flow showers, aerated taps, dual flush toilets etc.)
- the specification of a home office space through installation of requisite power, telecommunications, ventilation etc. in all units of 2 bedrooms or more (in accordance with Ecohomes and Code for Sustainable Homes)
- bicycle storage for residential properties
- the specification of minimum standards for amenity space in flatted development

Appendix D Assessment of Final Masterplan

D.1 Assessment Results Table

Table D.1 - Assessment of Masterplan: SK117G

KEY: First Iteration Assessment	KEY: Final Iteration Assessment
Requirement not addressed at all where required	Requirement not addressed at all where feasible
Requirement insufficiently addressed and unlikely to be achieved if not addressed at early stage	Requirement insufficiently addressed where feasible
Effect unknown/ Level of detail yet to be determined	Effect unknown/level of detail yet to be determined
	Achievement of requirement unfeasible
Requirements met partially and further detail required	Requirements met partially
Requirements met in full	Requirements met in full
Requirements exceeded	Requirements exceeded

No	In accordance with the locally adjusted requirement, does the masterplan...?	Assessment: First Iteration	Recommendation (s) from first assessment iteration	Assessment: Final Masterplan	Notes
Management					
1	Include provision for a home user guide?	Design not at sufficiently advanced stage to assess achievement of targets. However, it is understood to be house builder policy to prepare a Home User Guide for all new home owners, which should satisfy the requirement.		A Home User Guide will be provided to all units. This will cover local transport links, amenities and features of the house.	
2	Seek that the Considerate Constructors Scheme is signed up to?	Design not at sufficiently advanced stage to assess achievement of targets. However, it is understood to be housebuilder policy to operate their sites in	It is recommended that the development seek to go beyond best practice under the considerate constructor's scheme, in order to achieve	All phases will be signed up for Considerate Constructors Scheme with construction site impacts reduced, monitoring and reporting water and energy use and adopting best practice for water and dust pollution. In addition to this, best practice recommendations for the prevention of contamination will be outlined in the detailed	

No	In accordance with the locally adjusted requirement, does the masterplan...?	Assessment: First Iteration	Recommendation (s) from first assessment iteration	Assessment: Final Masterplan	Notes
		accordance with best practice site management principles.	Ecohomes 'excellent'.	Construction Environment Management Plan (CEMP) and Site Waste Management Plan (SWMP) both of which will be developed and discussed with the Local Authority and Environment Agency, prior to commencing construction. The ES states that any negative effects from construction on air quality will be temporary. The operational impacts are predicted to be low, and thus no mitigation for operational effects is required. Other elements included within this sustainability appraisal, such as increasing a shift to more sustainable modes of transport, will help to ensure that this is the case.	
Low/Zero Carbon Energy Sources and Systems					
3	Integrate all feasible methods of renewable and low emission energy sources?	Design not at sufficiently advanced stage to assess achievement of targets.	Additional generative capacity may be possible which will become apparent through the results further stages of the feasibility study, including wind power. To achieve Ecohomes Excellent the contribution of low or zero emission energy sources will account for at least 15% of the dwellings energy consumption.	<p>The following summary gives the present position in respect of the Barry Waterfront development. Over the life of the development the costs of existing technologies will be expected to fall and new technologies come on stream. The effectiveness of these in meeting the carbon targets will be kept under review and appropriate solutions selected as each stage of the development proceeds.</p> <ul style="list-style-type: none"> - Photovoltaics will form an intrinsic part of the future solution for performances of 44% better than 2006 building regulations from properties in the development. - Solar thermal has a useful contribution to make towards achieving the 15% renewable contribution at Barry Waterfront. This is particularly so in the West Pond Area with its essentially south facing roofs, and in Arno Quay with the south facing elevation. In South Quay, the houses lie in an east/west orientation, solar thermal will therefore be less effective in this location. This effect can be compensated for in the size of the collector array in detail design. The escarpment is not expected to significantly impact upon the solar thermal output, as shading occurs at low sun angles which predominate in the winter period when the solar energy is much lower and heat would not normally be recovered. - With the large surface area of the dock nearby, Water 	

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				<p>Source Heat Pumps are a viable option for a proportion of the development. As this technique can be used to pump heat both ways, it provides a particularly useful opportunity for the commercial quarter at the head of the docks. However there is opportunity for some of the housing to also be served.</p> <ul style="list-style-type: none"> - The consortium aspires to the development of a community heating system at Barry Waterfront which would be seen as a positive move in terms of sustainability, but acknowledges that substantial hurdles would need to be overcome. - Should a community or district heating network be installed, a centralised CHP component to the Barry Waterfront development is then a viable option with good potential for carbon savings. 	
Site Layout and Density, Energy Conservation and Efficiency/ Street Lighting to Minimise Pollution					
4	<p>Layout and orientation maximise passive solar gain and natural daylighting and ventilation?</p>	<p>The Masterplan demonstrates that the design is reflective of local conditions, including topography. Blocks are oriented to maximise solar gain, thermal efficiency and natural daylighting. This will also have implications for the potential for benefits from the solar heating for hot water (see renewables).</p> <p>Land uses that do not require these benefits, such as parking, are sited where local conditions, such as the cliff, restrict solar potential.</p>		<p>As part of the Energy Strategy, efficiencies gained through layout and orientation were explored. Consequently, the development will follow the best practice of the energy hierarchy to minimise the energy demand through good design. Key features are:</p> <ul style="list-style-type: none"> • Orientation for passive solar gain • Orientation for solar hot water or Photovoltaic collection • Terraced housing with low Surface to volume ratio • High levels of insulation • Low air leakage • Gas appliances to be A rated condensing type • High penetration of low energy lighting • Any built in white goods to be A rated for energy • Gardens available for drying <p>The high density of housing not only brings a benefit in terms of party walls reducing thermal losses to the environment, but also in providing a compact load for the potential use of community or district heating. The linear streets provide shorter pipe runs and the denser housing gives a compact load with potentially lower mains losses per dwelling. Reduced mains losses will</p>	

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				reduce demand on any central plant that may be installed.	
5	Seek to provide energy efficient boilers and white goods?	Design not at sufficiently advanced stage to assess achievement of targets. The boilers fitted under the standard unit specification for all three Consortium members are understood to fall short of this requirement. This will have implications for the financial viability of the scheme. It is understood that the current standard white goods fitted by the three Consortium members fall short of this requirement. This will have implications for the financial calculations for the scheme.	The strategy for heating and hot water systems will need to be discussed and agreed between the Consortium members and guiding principles established. The strategy for white goods will need to be discussed and agreed between the Consortium members and guiding principles established.	Any supplied white goods will be A grade, and boilers will be energy efficient.	
6	Require that all lighting is energy efficient and minimises pollution?	Design not at sufficiently advanced stage to assess achievement of targets.	Recommend consideration of inclusion in development brief	A minimum of 75% dedicated low energy light fittings (internal and external) will be included. Energy efficiency of lantern types and appropriate control will keep the carbon footprint of the street lighting to a minimum.	
7	Allow for the provision of internal or external drying space?	Design not at sufficiently advanced stage to assess achievement of targets.	The Code for Sustainable Homes provides further detail on drying space, which should be considered as part of designs.	All houses are to be provided with rotary dryers and all flats with tidy-drys. This allows clothes to be dried naturally.	
Low embodied energy material and resource efficiency					
8	Include the implementation of	Design not at sufficiently advanced stage to assess	Further research should be undertaken to try to	The majority of the main building elements are to achieve a grade A from the Green Guide to Housing Specification (uPVC	

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	decisions relating to the use and sourcing of low embodied materials and resources?	achievement of targets. It should be noted that the ratings are based on the Green Guide to Housing, which is due to be re-issued towards the end of May 2008 – the performance of standard housing units against the revised Guide will need to be reviewed. This could potentially have significant implications in relation to construction techniques and material selection/sourcing.	improve the number of materials used that have an 'A' rating. This will require a review of the forthcoming revision to the Green Guide for Housing. Achieving a balance between environmentally responsible suppliers, that may be national, and sourcing materials locally from organisations that may not have formal accreditation, may lead to difficulties in achieving maximum credits under this rating. This issue should be resolved.	windows achieve this).	
9	Include the characteristics likely to achieve a reduced CO₂ emissions rating?	Design not at sufficiently advanced stage to assess achievement of targets. There are several interlinked factors that will have significant implications for the performance of the proposals against this criterion. These include: heating and hot water systems; thermal efficiency; lighting; potential for community energy supplies; renewables; layout	Increased measures to improve the efficiency of the buildings may help to improve this emissions rate. Consideration needs to be given to utilising low to zero emission fuel sources. Agreement will need to be reached between the Consortium members regarding the	To attain the Ecohomes excellent score, the typical dwelling will be targeting a carbon emission of less than 22 kg/m ² /yr. This is significantly less than that minimum emission rating for scoring under Ecohomes, of 40kg/m ² /year. In order to achieve this, improved U values over Building regulations levels will be targeted. Doors and windows will achieve 1.5 and roofs 0.14. Air tightness in buildings looks to <5 air changes per hour when tested to a pressure of 50 Pascals, current building regulations suggest a target of 10 air changes per hour.	

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		etc.	<p>specification of heating, hot water, insulation and other influential elements of unit design to ensure consistency in performance across the site.</p> <p>The Code for Sustainable Homes sets mandatory requirements under Ene 1: To achieve Level 4 of the Code the % improvement of DER over TER of >44%, which should be aimed for as part of the development.</p>		
10	Include characteristics that will result in the HLP being less than or equal to 1/1W/M2K?	Design not at sufficiently advanced stage to assess achievement of targets.		The Excellent pre-assessment of the site is based on average HLP of 1.1 W/m2K or less	
11	Include insulation with a GWP of less than 5?	<p>Design not at sufficiently advanced stage to assess achievement of targets.</p> <p>However, building regulations will ensure that some credits will be achieved as standard.</p>	There is a need for the Consortium to agree guiding principles for the specification of insulation to ensure consistency in performance across the site.	All insulation used will have a Global Warning Potential of less than 5.	
12	Re-use contaminated land?	The Masterplan will combine high density development on brownfield land, achieving	Recommend consideration of inclusion in		The sites have been subject to

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		this requirement in full. This will necessarily involve the remediation of any contaminated land, to bring it back into use.	development brief		previous dockside development including land filling, railway sidings, tank farms, ship and engine repair works, warehousing.
Waste Management					
13	Propose a waste management strategy, to encourage the movement of waste up the hierarchy?	The Masterplan has not yet considered the locations of potential recycling/sustainable waste management facilities as part of the overall scheme.	Suggest potential inclusion of facilities for sustainable waste management to be considered as part of designs, in accessible locations. This may be within the residential units themselves. Recommend consideration of inclusion in development brief and masterplan diagram It is recommended that composting facilities are also provided, in accordance with the Code for Sustainable	Internal recycling bins will be provided to help maximize the amount of waste recycled; this will help towards the achievement of the council's recycling targets. The local authority will collect materials for recycling.	Individual home composting facilities have not been specified at this stage of the design. However, this could be regarded as a specific strand of recycling and should be ensured.

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			Homes (Was 3 Composting).		
14	Demonstrate a commitment and a strategy to monitor, sort and recycle construction waste on site including the reuse of building materials?	Design not at sufficiently advanced stage to assess. However, application of best practice in respect of air (dust) pollution and water pollution will be a condition of planning approval and will therefore be adhered to as a minimum.	Recommend consideration of inclusion in development brief. A minimum % of recycled building materials should be specified and agreed. CSH Was 2 contains mandatory elements with regards to the management of waste on site, and it is suggested that these requirements be adhered to. These are: Monitoring and reporting of waste generated on site in defined waste groups, and compliance with legal requirements as set in SWMP regulations 2008 for and with best practice. The plan should include the setting of targets to promote resource efficiency in accordance with guidance from WRAP, Envirowise, BRE and DEFRA. Specific	A Site Waste Management Plan will be provided as part of statutory requirements. The achievement of Ecohomes Excellent will also require the following: <ul style="list-style-type: none">- Commitment to sorting and recycling construction waste on site.- Demonstrate a commitment to monitor, sort and recycle construction waste.	

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			targets are not required.		
Water conservation and sustainable drainage					
15	Incorporate the use of features which will encourage the conservation of water resources alongside safeguarding water quality?	<p>Design not at sufficiently advanced stage to assess achievement of targets.</p> <p>The specification of kitchens and bathrooms will be a significant influencing factor on this criterion. This will have implications for the financial calculations.</p> <p>Although water quality is currently high, the Masterplan does not currently address the requirement to improve water quality locally.</p>	<p>This rating may be improved through a scheme that may include information for occupants on how to reduce water consumption.</p> <p>The use of dual flush toilets (i.e. 6/4 litres); low flow showers; aerated taps etc. is recommended to assist in achieving the requisite performance against this objective – this needs to be discussed and a specification agreed between the Consortium members.</p> <p>Recommend consideration and inclusion in development brief of methods to protect and improve water quality, such as ensuring that vegetation is an integral part of design, to provide necessary cleansing of potential</p>	<p>The pre-assessment for Ecohomes calculates that the development will use less than 37m³ of water per bed-space with 4/2l dual flush, aerating taps and showers reduced to 4.5l/min. A rated white goods will be supplied where appropriate. These measures will reduce internal water use.</p> <p>Water butts will be provided to houses and apartment blocks.</p> <p><i>“A number of mitigation measures are proposed as part of the works to control the risk of pollution during construction and operation of the development. These include remediation of the made ground and source removal of grossly contaminated material and free product, together with the use of driven piles to mitigate the potential for pathways to be developed.”</i> (ES)</p>	<p><i>“The detailed groundwater risk assessment shows that the identified contaminants of concern in the groundwater underlying the site do not pose a significant risk to the dock water quality. Therefore no remediation of contaminated groundwater is proposed.”</i> (ES)</p>

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			pollutants. Petrol interceptors will also be a necessary feature.		
16	Incorporate the appropriate use of SUDS?	Design not at sufficiently advanced stage to assess achievement of targets. However, there is understood to be an agreed commitment by the Consortium to incorporate water attenuation into the scheme and this is being developed by specialists (Arup) at present.	There are mandatory requirements under the Code for Sustainable Homes for surface water run off, which should be adhered to.	Due to the contaminated land on site, it is not possible for SUDS to be used in this particular location. As an alternative, <i>“the new surface water drainage system will pick-up rain water from roads, roofs and hardstandings and transmit flows through the drainage network and discharge into the dock. Trapped gullies and interceptors will be incorporated into the design which will prevent contamination migration from the new drainage network into the dock.”</i> (ES)	<i>“The Environment Agency has stated in draft planning conditions that no infiltration of surface water into the ground should be permitted, to prevent pollution of controlled waters. Positive drainage will therefore be required to convey flows from roofs, roads and hardstandings for discharge into Barry Docks</i>

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					No.1." (ES)
17	Demonstrate flood risk mitigation techniques?	Design not at sufficiently advanced stage to assess achievement of targets. However, there is understood to be an agreed commitment by the Consortium to raise the level of the site and this is being developed by specialists (Arup) at present.		<p><i>"The design level of the development to provide protection for a 0.5% tidal (1 in 200 year) event is 8.868m AOD.</i></p> <p><i>To prevent a possible surge being transmitted into the western area of West Pond; it has been agreed that ground levels immediately to the east of the viaduct structure is raised to 9.34m AOD, to be a general ground level raise rather than to a local bund.</i></p> <p><i>To allow movement within the site during a flood event, all new roads will also be raised above the 1 in 200 year extreme flood level of 8.868m AOD. To allow access/egress to/from the site, the existing access points will need to be used.</i></p> <p><i>To ensure that the off-site access roads do not flood by more than 0.6 during an extreme event, local lengths of Y Rhodfa and Cory Way roads may need to be raised by up to 0.2m and 0.4m locally to ensure emergency access during an extreme flood event.</i></p> <p><i>To provide such flood protection across East Quay, West Pond and South Quay, ground levels will need to be revised, typically by 0.5 – 1.0m."</i> (ES)</p>	<p><i>"The site is on the coastline and has the potential for tidal inundation during an extreme event."</i> (ES)</p>
Landscape, Trees and Ecology					
18	Seek to protect and enhance ecology wherever possible?	Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site. Although the ecological characteristics of the site are being assessed, schemes for enhancement of biodiversity specifically have not yet been addressed. Achievement	Recommend consideration of inclusion of measures to enhance the biodiversity of the site to be incorporated wherever possible regardless of whether or not this contributes to the Ecohomes overall rating. Suggest incorporation	Potential impacts on ecology have been predicted through the EIA process, outlined in the ES. Subsequently, a number of mitigation measures will be included within the development, namely: <ul style="list-style-type: none"> - <i>"Retention and protection of 2m wide strip at the cliff base and face along the South Quay;</i> - <i>Retention of 5300m² grassland areas for Skylark to the south of East Quay;</i> - <i>Design of Public Open Space in East Quay to provide grassland of potential value to Skylark (2200m²);</i> - <i>Possible retention of 7100m² of ABP land on East Quay to</i> 	

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		<p>unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p> <p>The Masterplan has been developed ahead of the culmination of the habitat surveys, and thus has not integrated the results of these into the overall design which may be to the detriment of the current ecology. Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p> <p>Achievement unlikely as rating not being targeted, largely as a result of the intrinsic ecological value of the site as a longstanding brownfield site.</p>	<p>of a strategy to enhance biodiversity as part of a network of green spaces throughout the development and inclusion within the design brief. This may include specific plants and habitats as identified in the Habitat Surveys. This should be done whether or not it contributes to the Ecohomes scores.</p> <p>Suggest allowance of flexibility in design until the results of the surveys and the need and mechanisms to protect species becomes available. This should be done whether or not it contributes to the Ecohomes scores.</p> <p>Recommend consideration of inclusion of measures to enhance the biodiversity of the site to be incorporated wherever possible regardless of whether or not this contributes to the Ecohomes</p>	<p><i>retain grassland habitat in-situ and provide potential resource to Skylark;</i></p> <ul style="list-style-type: none"> - <i>Provision of 1000m² wildflower meadow as part of public open space at East Quay;</i> - <i>Creation of linear park swale and meadow strip habitat through West Pond;</i> - <i>Up to 43,100m² of public space including grass, bulb, herbaceous, trees and shrub species selected to be beneficial to biodiversity;</i> - <i>Street tree network to contribute to foraging corridors for birds, bats;</i> - <i>Retention and protection of rare plant (Childing Pink) areas off site (East Quay) and translocation of species (Corky Fruited Water Dropwort);</i> - <i>Provision of brown roofs on the District Centre in West Pond (approximately 2600 m² of habitat).</i> - <i>Brownfield habitat to be provided – up to 2000m² - as part of green corridor around south-eastern periphery of site. This provision would be at ground level with 7m wide scrub/hedge border adjacent to the development. Substrate of crushed brick/concrete to be seeded with native grasses/wildflowers and maintained as a brownfield meadow.</i> - <i>Translocation of reptiles from within the application boundary to a suitable offsite area (Cosmeston Country Park)</i> - <i>Creation of ‘green corridor’ link between off-site railway scrub and the cliff corridor.</i> - <i>Retention of the cliff top green space managed as wildlife gardens, allotments and open space.</i> - <i>Up to 1:10 of the approximate 600 houses in South Quay to have bird boxes.</i> 	

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			overall rating.	<p>- Up to 600 m² of thicket scrub in East Quay Park.</p> <p>The mitigation measures proposed would allow for retention and/or provision of habitats, albeit at a smaller scale and this in turn would provide resource for continued use of the site by birds, foraging bats and terrestrial invertebrates. For these groups, the significance of any adverse impacts is likely to reduce over the long term as planting natures etc although an overall loss of biodiversity (largely due to the scale of area lost to development) at the site level is likely to arise as a result of development.</p> <p>As part of the site preparation works in advance of construction, the level of the site would need to be raised to address flood issues and this would effectively remove most of the existing ecological features at the site. Minimisation of the effects of construction will include, however, include the retention and protection of the cliff/cliff base on South Quay, retention of grassland at East Quay, avoidance of key periods (e.g. bird nesting season) during clearance works and retention/protection of peripheral scrub habitats.” (ES)</p> <p>To enhance the ecology on site, locally sourced plants are likely to be used.</p>	
19	Achieve an adequate footprint ratio?	Design not at sufficiently advanced stage to assess achievement of targets.		The development has sought to achieve the optimum efficiency in terms of the use of the available land on site.	
20	Retain a visual relationship with the waterfront and the town?	The Masterplan indicates the enhancing of several key views in and out of the development area. These include a key view through South Quay to Barry Island and from Barry Island to Arno Quay and a continuous frontage along the waterfront.	Suggest the consideration and diagrammatic mapping of key views, providing connectivity with the existing town and enhance the maritime setting. This might include the enhancing of views of the dock	<p>The landscape and visual impact assessment in the EIA has assessed the visual effects of the development. The visual effect is considered to be major beneficial for 6 of the viewpoints considered; with one of each of the remaining viewpoints experiencing the following effects: minor beneficial; moderate beneficial; and moderate to major beneficial.</p> <p>The Masterplan indicates the enhancing of several key views in and out of the development area. These include a key view through South Quay to Barry Island and from Barry Island to</p>	

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			offices, and vistas to the water from further within the development. Suggest inclusion within development brief.	Arno Quay and a continuous frontage along the waterfront. The Design and Access Statement shows how key views have been created through the masterplan process, enhancing the visual relationship between the waterfront and Barry town. Additionally, provision will be made for public art through the public realm strategy although the precise scale and form will be a matter of negotiation with the Council. (PS)	
21	Propose a sustainable landscaping strategy?	The link road will be enhanced to make it more inviting and improve connectivity to the site with the town.	Although not specified, the used of tree planting may be one mechanism to achieve this objective and further integration of the development with the town. Recommend consideration of inclusion in development brief.	<p><i>“Trees, shrubs, herbaceous and bulb species are to be chosen to provide good seasonal effect and to collectively contribute to biodiversity... The provision of strategic street planting, within a site wide hierarchy, is a principal landscape design objective.”</i> (DAS)</p> <p><i>“The established masterplan will include trees within the open spaces and along roadways providing a more mature structure to the streetscape that will assist in enhancing the overall character of the area.</i></p> <p><i>Extensive street trees that reinforce the street hierarchy and tree planting within open space is proposed and over time they will be visible within the roofscape of the development, providing a green structure. The proposed open spaces that are situated throughout the site will provide areas of visual and recreational amenity for both residents and visitors. Street trees along the district centre public realm will contribute to key gateway views.”</i> (ES)</p> <p><i>“A continued development plan for the young developing woodland and scrub material within the site will add a considerable linear landscape character to the slopes at the south of the site, if encouraged to develop. Such linear landscape features are important for nature conservation corridors as identified with the ecology chapter.</i></p> <p><i>With regard to retained trees, the protection of RPAs (as illustrated on figure M3), using suitable protective fencing conforming to BS 5837:2005, will be an essential component for protecting against further damage to trees selected for retention.</i></p>	

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				<p><i>These measures should be included in a written Tree Protection Plan, developed as part of the reserve matters detailed design.</i></p> <p><i>The Development landscape design proposes the planting of advanced and semi-mature tree stock (in excess of 800 number), complemented with areas of green open space (in excess of 4.5 hectares within the application site). This, along with the establishment of the existing landscape as referred to above, should mitigate any short term loss and result in a longer term, beneficial effect for the area in terms of landscape amenity and quality.” (ES)</i></p>	
22	<p>Include an attractive open space network including space for children’s play?</p>	<p>The Masterplan demonstrates an open space network along the South Quay, as well as public realm space on the waterfront area of West Pond.</p>		<p><i>“Whilst children’s formal play facilities would be met in full there will be flexibility in the way in which other forms of public open space are provided, including a quality public realm along the waterfront, dual use of any educational facilities including all weather facilities, and the creation of new public green spaces.”</i></p> <p>A comprehensive open space network has been established throughout the waterfront development, and is demonstrated on the masterplan.</p> <p><i>“The Barry Waterfront scheme proposes to provide a minimum of 4.66 ha of public open space and 1.42 ha of public realm of which 0.58 hectares will be children’s play area.” (PS)</i></p> <p>This will encourage community mixing and an increase in informal and formal physical activity contributing to human health and wellbeing.</p>	<p><i>“For a development of this scale, the Vale of Glamorgan’s Public Open Space policy in the adopted Unitary Development Plan would result in a requirement of 7.3ha of outdoor space and 2.7ha of children’s play space. Discussion with the</i></p>

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					Council has confirmed that the rigid application of these guidelines is not appropriate at Barry Waterfront." (ES)
23	Include a network of multipurpose wildlife corridors and pedestrian routes?	The Masterplan demonstrates a network of green spaces, predominantly for pedestrian access.	The network of green space should be further considered in relation to its value for wildlife and adjusted accordingly.	<p>The mitigation included within the ecology chapter of the ES includes wildlife corridors, as well as multipurpose routes and spaces for wildlife and pedestrians such as:</p> <ul style="list-style-type: none"> - <i>“Design of Public Open Space in East Quay to provide grassland of potential value to Skylark (2200m²);</i> - <i>Provision of 1000m² wildflower meadow as part of public open space at East Quay;</i> - <i>Creation of linear park swale and meadow strip habitat through West Pond;</i> - <i>Up to 43,100m² of public space including grass, bulb, herbaceous, trees and shrub species selected to be beneficial to biodiversity;</i> - <i>Street tree network to contribute to foraging corridors for birds, bats;</i> - <i>Brownfield habitat to be provided – up to 2000m² - as part of green corridor around south-eastern periphery of site.</i> - <i>Creation of ‘green corridor’ link between off-site railway scrub and the cliff corridor.</i> - <i>Retention of the cliff top green space managed as wildlife gardens, allotments and open space.”</i> 	

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Geology					
24	Contribute to the protection of any geological or geomorphological sites of significance?	Design not at sufficiently advanced stage to assess. Site layout and proposed construction techniques will be developed to reflect the findings of Site Investigation work and securing the protection of any geological or geomorphological significance.	Recommend consideration of inclusion in development brief.	Appendix A shows the location of the Geological SSSIs, which can be noted as being a considerable distance from the development site. As such, it is considered that they will not be negatively affected by the development, contributing to their continued protection.	
Local Character and Urban Design					
25	Lead to the enhancement of local character and heritage through design?	<p>The Masterplan design has specifically borne in mind the need to retain access to The Mole, and ensure flexibility in design to enable any future uses. The access road and the creation of a commercial core near to The Mole exemplify this strategy.</p> <p>The Masterplan sets out a series of land uses that have been considered thoroughly in terms of their relationship to one another.</p>	<p>Further detailed designs should detail how links to the existing town will achieve integration of design with the existing settlements.</p> <p>Recommend consideration of inclusion in development brief</p> <p>Recommend further consideration of the East Quay and its uses in order to seek to enhance the setting of the Docks Offices as an important building in the character of the Docks.</p> <p>Recommend that the dock wall is retained.</p>	<p>The DAS explains how the masterplan has been divided into seven character areas. Each of these will contribute to the enhancement of local character, with each having their own identified character through design objectives and principles as follows:</p> <ul style="list-style-type: none"> - District Centre: '<i>... a vibrant new heart for both the new and existing community</i>' - West Pond: '<i>... a new neighbourhood based upon traditional values</i>' - S Q Parkside: '<i>... a distinct residential quarter with a parkside setting</i>' - S Q Waterside: '<i>... a lively new neighbourhood with a waterside setting</i>' - Arno Quay: '<i>...a gateway opportunity</i>' - East Quay: '<i>...a peninsula residential development</i>' - The Mole: '<i>...a distinct and attractive leisure-led, mixed-use area</i>' <p>The landscape and visual chapter of the ES confirms that the development will lead to the enhancement of local character</p>	

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			<p>Detailed designs should ensure that the need for visual interest and originality are prioritised.</p>	<p>through design:</p> <p><i>“The development is considered appropriate in terms of its location, design, scale, materials used and its relationship with the surrounding townscape. The proposed developments will have longer term beneficial effects on the local area, transforming a dockland landscape that has been in decline for many years into a vibrant, urban townscape, while still respecting the traditional local urban structure and form that surrounds the site.</i></p> <p><i>Overall it is considered unlikely that any significant adverse effects on the setting or character of the Conservation Areas within the study area will result due to the proposed developments.</i></p> <p><i>The two listed buildings that will be most effected by the development will be the Dock Office building and the North Hydraulic Pumping House, both of which have direct views across the proposed development site. Significance of effects on the two listed buildings is likely to be moderate beneficial.</i></p> <p><i>There will be no views of the development from the Grade I listed Dovecote; therefore there will be no adverse of beneficial effects from this structure.</i></p> <p><i>The I blocks of housing within West Pond, South Quay Parkside, South Quay Waterside and East Quay, which are predominately two-storeys in height, reflect the traditional street patterns that are typically found within the residential streets surrounding the Docks.</i></p> <p><i>Houses within West Pond and South Quay Parkside will be finished using materials, which compliment the existing housing styles adjacent to the docks.</i></p> <p><i>The residential developments at South Quay Waterside respond to the radial geometry of the adjacent cliff and the terraced housing on the peninsula.</i></p> <p><i>Through the use of contemporary design, the housing will connect with its maritime location and integrate the development blocks into their surroundings, whilst still reflecting the traditional</i></p>	

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				<p><i>urban vernacular of the area.</i></p> <p>The archaeology chapter of the ES goes further to protect local heritage, providing mitigation including: <i>"Watching briefs and site surveys prior to any excavation or demolition works with relation to potential negative effects on sites of archaeological significance will provide mitigation and ensure that there will be no residual impact on the archaeological resource."</i></p>	
Transport and Movement					
26	<p>Seek to reduce the need to travel through the provision of home offices and mixed use development?</p>	<p>The location of the development will intensify development in this urban location, increasing development densities, where there is good access to services and facilities accessible by foot. The location of three rail stations and good bus links means that it is ideally situated to implement that transport hierarchy.</p> <p>Design not at sufficiently advanced stage to assess achievement of targets.</p> <p>However, in all dwellings of two bedrooms or more, there is significant potential for this to be achieved through the specification of power socket and telecommunications points and ventilation at relatively low cost per unit.</p>	<p>Walking and cycling links to the rail station should be promoted in the Masterplan.</p> <p>It is recommended that the Consortium members agree a standard approach that would result in the fulfilment of this criterion in all units of 2 bedrooms or more. The specific requirements are set out in Ecohomes and Code for Sustainable Homes and should be adhered to.</p>	<p>All units will have a designated Home Office with additional power and telephone points to allow for home working or studying.</p> <p>The location of the development will intensify development in this urban location, increasing development densities, where there is good access to services and facilities accessible by foot. The location of three rail stations and good bus links means that it is ideally situated to implement that transport hierarchy.</p> <p>The expected number of direct jobs that will be generated by the Proposed Development is approximately 700 net additional direct jobs at the following proposed land uses:</p> <ul style="list-style-type: none"> - Foodstore - Non-food retail - Class A3 units - Offices - Hotel* - Petrol Filling Station <p>This is likely to include about 102 'spin off' jobs in local services and other firms in the local area, with a further 204 jobs likely to be generated in the South East Wales region.</p>	

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1. Pedestrians Convenient routes, which are easy, safe and attractive to use					
27	Reflect the manual for streets, and provide safe, convenient, easy and attractive routes for pedestrians?	<p>The integration with the existing settlement is a key objective of the design of the development. This is evident through the masterplan document in the development of key gateways into the development, as well as the key routes connecting the site with Barry Island and Barry Town, which follow pedestrian desire lines.</p> <p>Although a network of streets exists, in general there are only main routes linking features. Thus, there appears to be a lack of choice of routes in the current scheme.</p> <p>Routes to local facilities and open spaces are fully addressed throughout the Masterplan.</p> <p>The Masterplan demonstrates the introduction of 20mph 'zones' which will help to slow traffic. Additionally, the creation of 'nodes' along the main route will add interest and generate more of a feeling of shared space, which will contribute to slower traffic speeds.</p> <p>The Manual for Streets is being used in the formulation</p>	<p>Permeability could be improved in further design stages by ensuring that blocks are broken up to improve connectivity.</p> <p>Access routes to rail facilities, especially the Barry Town station should be further considered, especially with regards to desire lines.</p>	<p><i>"The masterplan has been developed with high priority afforded to pedestrian permeability. The newly constructed link road will include wide footways to cater for increased demand and frontage activity. Dedicated at-grade crossings will be provided at the proposed signalised junctions along the main link road.</i></p> <p><i>Footways will share space with cyclists and motor vehicles within the housing areas to provide a 'street' feel, as advocated in the Department for Transport's Manual for Streets document. Pedestrian shortcuts will be provided between dead end streets, allowing local trips to be faster for pedestrians.</i></p> <p><i>Uncontrolled crossings will be situated in convenient locations around the development sites, and will have dropped kerbs to cater for disabled users. Pedestrian desire lines have also been considered to ensure that safe convenient routes are available to pedestrians wanting to access the retail, school and office facilities.</i></p> <p><i>An important aspect of the pedestrian facilities is the linkage to the external pedestrian facilities around the waterfront area. The segregated cycle/footway bordering Ffordd y Mileniwm has been integrated into the masterplan, to ensure seamless connections between existing facilities and the proposed development.</i></p> <p><i>Connections will also be made to the existing footways that follow the alignment of Powell Duffryn Way that connects to the roundabout situated at the north eastern corner of West Pond. Direct pedestrian access to Barry Station will be improved by the provision of a footway crossing over the disused railway to the north of West Pond. This connects to the existing underpass that currently provides a link between the waterfront and Broad Street."</i> (ES)</p> <p><i>"Seating areas and public cycle parking facilities are provided at a number of locations within the development sites to facilitate walking and cycling within the site and create a vibrant</i></p>	

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		of the Masterplan.		<i>development... Construction of the Thompson Street footbridge will create a further route from the Waterfront area to the Town centre. This route will be of particular use to potential residents of the Arno Quay and East Quay sites.” (TA)</i>	
2. Cyclists: Direct, safe and attractive routes					
28	Reflect the manual for streets, and provide safe, direct and attractive routes for cyclists?	<p>A cycle route has been established through the scheme, as part of the green space route through West Pond.</p> <p>The Masterplan currently does not address potential links to the wider Sustrans network.</p> <p>Design not at sufficiently advanced stage to assess achievement of targets.</p> <p>The incorporation of formal cycle storage will have implications in terms of land-take and overall character and appearance of dwellings, dependent upon where it is accommodated.</p>	<p>Further detailed designs should consider the need for additional designated cycle routes to access all areas of the site as well as the town and Barry Island. These should be safe from road traffic and not hinder the safety of pedestrians. Routes should also be designed to connect into the wider Sustrans network, which passes in close proximity to the site.</p> <p>Linking the cycle network within the site to the wider national Sustrans route will provide a key connective element to improve the sustainable accessibility of the site.</p> <p>The development should seek to target 50% provision. This</p>	<p><i>“It is envisaged that cycling will be a key mode for trips within the development and to other destinations in Barry. Much of Barry is within an acceptable cycling distance from the development site.” (ES)</i></p> <p>The ES describes the internal and external links within the development for use by cyclists; the provision will ensure continuous routes throughout the development, as well as connecting to areas outside the immediate vicinity.</p> <p><i>“The internal road network is designed in a way that facilitates cycle use and affords cyclists a similar level of accessibility to pedestrians.</i></p> <p><i>In addition to the internal street design, there is a dedicated cycleway that will run along the western edge of the former No. 1 Dock to provide both commuter and leisure cyclists with an attractive alternative route to busy roads. The waterfront setting of this cycle route will provide a genuinely attractive link for cyclists wishing to access the dedicated cycleway along Ffordd y Mileniwm.</i></p> <p>External Links</p> <p><i>The internal cycle infrastructure will be conveniently linked to the dedicated cycleway along Ffordd y Mileniwm allowing cyclists an uninterrupted route through West Pond/South Quay area onto Ffordd y Mileniwm. Cyclists will also benefit from the at-grade crossing of the disused rail line providing a more direct route to Barry Station.</i></p> <p>Cycle Parking Provision</p> <p><i>It is proposed that cycle parking provision be included within the site to ensure compliance with the Outline Travel Plan, which</i></p>	

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			<p>should comprise at least two cycle spaces for 3-bedroom housing and that the storage provision is safe and weatherproof.</p> <p>There is a need for the Consortium to discuss and agree a standard approach to the provision of cycle storage and ensure that this is reflected in the masterplan.</p>	<p><i>supports the ambitions set out within national planning policy to increase the use of the bicycle as an alternative mode of transport to the private car.</i></p> <p><i>The proposed level of cycle parking is in excess of the CSS Wales Parking standard, it is proposed that houses will be constructed with dedicated secure cycle parking.” (ES)</i></p> <p>Cycle storage will be provided in all building units.</p>	
3. Public Transport					
29	Create good access to public transport?	<p>The location of the development site in relation to local public transport services means that there is the potential for exceeding this requirement. At present, the Masterplan does not demonstrate how these key nodes, especially rail transport, will be accessed. Design not at sufficiently advanced stage to assess achievement of targets.</p>	<p>Access routes to public transport facilities, especially rail, should be considered fully in relation to their ease of access.</p> <p>The location of public transport facilities should be incorporated into the masterplan.</p> <p>Recommend consideration of inclusion in development brief</p>	<p>The ES calculates public transport demand, which will be “<i>split between the rail and bus services, including the diverted service which will operate through the West Pond area. Whilst certain peak hour rail services are busy there is generally adequate capacity, in future years additional rail capacity is likely to be provided as a result of improvement works. In the case of bus based public transport high demand for services would be likely to result in operators considering an increased service frequency.</i></p> <p><i>The potential for pedestrian accessibility to rail stations to be improved beyond the masterplan boundary will be investigated with the Vale of Glamorgan Council. There is an aspiration for a footpath across the existing railway sidings situated south of the Powell Duffryn Way/Hood Road junction. This would allow more direct pedestrian access from the development areas to the rail station via the Powell Duffryn Way underpass, and Broad Street. Improved access to the rail station will make rail travel to and from the development a more attractive way of travel, and help to create a modal shift to more sustainable modes of transport</i></p>	

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				<p>overall.</p> <p>The majority of the development site is within 5 minutes walking distance of a bus stop, with the rest being within 10 minutes. The location of the stops has been determined with consideration for the guidance set out in Manual for Streets.</p> <p>The bus stops will be of high quality and provide travel information, lighting, shelter and signing to ensure a positive passenger experience. As the link road is being constructed as a single carriageway with dedicated on street parking, there is sufficient width for the installation of bus lay-bys to at each of the bus stops. This will allow buses to pull off the main link road to pick passengers, reducing the delay to vehicles during the pickup/drop off of passenger." (ES)</p>	
4. Private Motor Vehicles					
30	Road design reflect the transport user hierarchy?	<p>The Masterplanning process has considered the need for the lowering of speeds through the development.</p> <p>The transport and road strategy has ensured that the Masterplan does not include roundabouts, improving the pedestrian environment.</p> <p>The car parking area demonstrated on the Masterplan will serve multiple uses, including the potential food store, and the commercial/ mixed use core of the development.</p> <p>The accessibility of the area by public transport means that these parking requirements do not need to</p>	<p>Further detailed design stages should explore the prioritisation of pedestrian and cyclist safety through traffic calming measures.</p> <p>Further consideration of the integration of public transport nodes, and the use of public transport by visitors to the development as well as residents should be considered.</p>	<p>"The transport vision for Waterfront Barry will be promoted through a Travel Plan, and outline version of which is provided as Section 13 of the TA. It will provide the framework within which a developer commits to providing a development that encourages modal shift towards sustainable transport.</p> <ul style="list-style-type: none"> - Car sharing: relieves congestion at peak hours. - Encouraging walking: encouraging employees to walk to work - Encourage cycling: cycling facilities, information and establishing a Bicycle User Group (BUG) within the proposed offices - Encourage Public Transport - Resident initiatives: Welcome pack, transport information, personalised travel planning <p>Mitigation measures proposed in the ES to enable the alleviation of potential traffic problems through increased users include:</p> <ul style="list-style-type: none"> - The proposed works to the Merrie Harrier signalised junction are aimed at providing improved facilities for buses, cyclists and pedestrians whilst increasing 	

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		<p>be extensive.</p> <p>The Masterplan seeks provision for on-street parking which reflects this requirement.</p> <p>The siting of road and educational infrastructure has been designed specifically to provide linkages with the existing community in order to improve integration within the development.</p>		<p><i>available capacity through the installation of new signal equipment.</i></p> <ul style="list-style-type: none"> - <i>Waycock Cross: The proposed works to the junction involve and enlargement and re-siting of the roundabout to the north. The revised junction will have a significantly larger diameter gyratory with improved capacity on all approach arms. The improvement proposals arise from existing traffic conditions and proposals for the Metrix development at RAF St. Athan to the west of Barry.</i> - <i>It is possible to remodel seven of the existing junctions in order to improve junction capacity and traffic control with the new development. The works involve a range of measures targeted increasing traffic capacity within available highway land.</i> - <i>For a further four junctions it is anticipated that improvement works would require major upgrading works in order to alter the form of the junctions within the available highway land.</i> - <i>Severance: The presence of the rail line and No 1 Dock cannot be altered however the developer will minimise severance (whilst improving access to rail facilities) by creating a more direct route from the West Pond area to Broad Street and Barry train station.</i> - <i>Safety has been a key consideration in the design of transport infrastructure. It is anticipated that the design will lead to appropriate vehicular speeds both on the main road and within residential areas.</i> - <i>Efforts have been made to accommodate pedestrian desire lines through routes which link origins and destinations.</i> - <i>Detailed design of road junctions will be completed in line with local and national design guidance and safety audits will be undertaken at appropriate stages to</i> 	

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				<p><i>ensure the suitability of designs and identify any unforeseen site specific circumstances.</i>" (ES)</p> <p>The Transport Assessment (TA): <i>"New link road will be bordered by wide footways, and dedicated crossings will be provided at strategic locations. Internal roads deviating off the main road will be designed according to Manual for Streets to encourage access by walking or cycling with crossing providing safe permeability."</i></p>	
Housing Needs					
31	Seek to meet the housing needs of the local community?	Design not at sufficiently advanced stage to assess.	Recommend consideration of inclusion in development brief	<p><i>"The Proposed Development will increase the number of dwellings in the Vale of Glamorgan by approximately 2,000. This will represent a 3.75% increase in the existing number of dwellings in the catchment area and a 300% increase in the number of dwellings presently at Barry Waterfront. Of the proposed dwellings there will be approximately:</i></p> <ul style="list-style-type: none"> <i>a 450 apartments;</i> <i>b 360 – 630 2 bedroom houses;</i> <i>c 360 – 630 3 bedroom houses; and,</i> <i>d 60 – 180 4 bedroom houses</i> <p><i>The current mix will provide between 1,400 and 1,600 private market housing units and potentially 400 to 600 affordable residential units, dependant upon the availability of housing grant and scheme viability. These are to be provided as a mix of social rented and intermediate residential units. This supply of affordable housing is very high in comparison with the level of provision that has been achieved in recent years in the Vale of Glamorgan."</i> (ES)</p> <p>Any affordable housing provided through Social Housing Grant will be subject to the relevant Ecohomes standards.</p>	
Design for Change					
32	Layout reflect the	The Masterplan demonstrates	For a Level 6	The Masterplan demonstrates the use of block layouts.	

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	potential need for adaptation over time?	the use of block layouts.	assessment achievement of the Code for Sustainable Homes, Lifetime Homes criteria are a mandatory requirement.		
Design out Crime					
33	Seek to design out crime?	Through designing the development to ensure active frontages along pedestrian routes, natural surveillance should discourage crime. The development is seeking to achieve a Secured by Design Award as well as achieving the minimum windows and doors security standards.		Through designing the development to ensure active frontages along pedestrian routes, natural surveillance should discourage crime. All units are to achieve Secured By Design compliance, as well as achieving the minimum windows and doors security standards. <i>Upon completion of the development, activity and natural surveillance in the area will completely alter the Waterfront environment. It is considered that the combination of well designed infrastructure (routes, lighting, building design) and activity will create an urban area that has characteristics far less likely to result incidents which give rise to fear and intimidation.</i>	
Health and Wellbeing					
34	Include the provision of adequate daylighting?	Design not at sufficiently advanced stage to assess achievement of targets.		Maximising passive solar gain through the orientation of the buildings will ensure that adequate daylighting is provided.	
35	Incorporate adequate sound insulation?	Design not at sufficiently advanced stage to assess achievement of targets. However, the standard unit construction used by the Consortium members is understood to be sufficient to achieve partial satisfaction of	To achieve excellent the development must achieve at least 5dB beyond the requirements of Buildings Regulations and at least carry out acoustic tests in a minimum of 50% of	All Party Walls and Floors are to achieve 5dB improvement over Building Regulations with accredited Robust Details or sound testing. The ES identifies that <i>"the provision of standard thermal double glazing with an RTRA sound insulation performance of 30 dB, will be capable of providing an adequate level of protection against noise, for all of the façade assessment locations, providing between 'reasonable' and 'good' internal noise levels</i>	<i>For a road traffic noise spectrum (RTRA), PPG 24 states that standard thermal double</i>

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		this criterion.	dwellings at an early stage.	<p>during the day and 'good' internal noise levels during the night.</p> <p><i>It is recommended that a more detailed assessment of the sound insulation performance requirements for the proposed residential dwellings most affected by noise is undertaken at the detailed design stage.</i>" (ES)</p> <p>A proactive approach to minimise the effects of noise and vibration has been considered in the ES, to minimise the effect from road traffic. Options for consideration at the detailed design stage include:</p> <ul style="list-style-type: none"> • For a limited number of dwellings fronting Ffordd y Mileniwm, on Fford Sealand and Rhodfa Sweldon: "A reduction in the speed limit on this section of road to 20 mph, and ensuring broad compliance with this limit through appropriate traffic management... The practicality of restricting speeds on this route is at this stage unknown, and as such, is presented as an example of how the impact of this predicted increase can be reduced" • For two properties at the junction of Earl Crescent and Clive Road: "One option may be the construction of localised acoustic barriers, which would be sufficient to reduce the predicted increase in noise at these locations to acceptable levels, providing it is feasible to find a barrier alignment that interrupts the line of sight between the source and receiver. If such an alignment is deemed impractical at the detailed design stage, then another option may be to consider the provision of additional boundary screening and possibly sound insulation for any properties that are predicted to experience increases in noise of more than 5 dB." (ES) 	glazing will provide a façade sound insulation performance of 33 dB(A), which for free-field noise levels, as predicted in this case would be 30 dB(A).
36	Provide private or semi private space?	Design not at sufficiently advanced stage to assess achievement of targets.	The masterplan should specify the provision of private space, including an agreed standard for	The DAS demonstrates provision of private spaces for a large proportion of the dwellings provided. Further to this, the masterplan includes the provision of a large amount of public amenity space. Many of the apartments will include the provision	

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		However, the current masterplan envisages the provision of private rear gardens for houses and balcony amenity space for flatted units. This should achieve partial satisfaction of this criterion as a minimum.	amenity space in flatted development.	of private space where feasible, in the form of balconies.	
Community Facilities					
37	Include the provision of additional facilities for community use?	Unable to assess due to ongoing discussions regarding suitability of the site for provision and the possibility of offsite provisions.		<i>“The availability of good quality public transport connections close to the application site means that any additional demand could be spread across the 12 local community centres. This additional level of patronage would be important in sustaining activity within these existing community centres. It would also help to encourage increased integration between the new community at Barry Waterfront and the existing community in the surrounding area.” (ES)</i>	<i>“All of the surgeries in Barry have identified that they do have capacity to accommodate additional patients and so it is anticipated that the medical requirements of the additional population could be accommodated by the existing provision of GP surgeries</i>

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					<i>within the town.</i> " (ES)
38	Lead to the establishment of the waterfront as a social and leisure focus for the town?	<p>The Masterplan has considered the future development of the Marina, allowing for flexibility in its strategy.</p> <p>The Masterplan demonstrates a mixed use area that will provide retail opportunities. The provision of public squares, and a hotel amongst other social and leisure facilities will lead to the provision of a focus for the area from this perspective.</p>	Suggest further consideration of potential land uses in the commercial/ mixed use core that will contribute to the attraction of the area for visitors.	<p>The Principal Strategic Aims for the Public Open Space and Public Realm Design Principles in the DAS include the need to capitalise on recreational potential and public draw of the site's waterfront location. This will include linking the waterfront with the rest of the development through pedestrian and cycle access primarily.</p> <p>The Masterplan has considered the future development of the Marina, allowing for flexibility in its strategy.</p> <p>The Masterplan demonstrates a mixed use area that will provide retail opportunities. The provision of public squares, and a hotel amongst other social and leisure facilities will lead to the provision of a focus for the area from this perspective. The Proposed Development will include provision for a range of cafés and restaurants (1,820sqm).</p>	
39	Lead to the provision of educational facilities for the town?	The Masterplan includes the provision of an educational facility, although the exact nature of this provision is yet to be determined.	To be discussed with VoGC.	<i>"It is evident that the impact of the Proposed Development upon primary education requirements will be adverse but negligible in scale. There will be no adverse impact upon secondary education provision."</i> (ES) Therefore, the provision of such a facility may not be necessary on site, although this is unclear at present, as forecasts in the Single Education Plan only go to 2011, which will be around the same time as the first communities occupy the site.	
Retail					
40	Incorporate the appropriate level of retail provision?	Appraisal of this option is not yet possible. Awaiting the results of the Retail Impact Assessment alongside more detailed design proposals.		<p><i>"The Retail Assessment proposes to provide "up to 8,800 sq. m of convenience and comparison floorspace. Specifically, this will comprise a 6,500 sq m gross foodstore (approximately 4,600 sq m net) with approximately a 60:40 split. As such, it is anticipated that 2,800 sq m (net) will be devoted to the sale of convenience goods and 1,800 sq m (net) will be devoted to the sale of comparison goods.</i></p> <p><i>There will also be a further 2,300 sq m gross non-food</i></p>	

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				<p><i>floorspace (approx 1,800 sq m net) provided within separate retail units adjacent to the proposed foodstore. The exact number of units is unknown at this stage of the application process although it is envisaged that there will be 2 units of approximately 1,150 sq m gross (900 sq m net) each. There are no proposed operators for any of the retail floorspace to date.</i></p> <p><i>It is intended that the proposed retail floorspace will be located within a new District Centre.</i></p> <p><i>“This offer will be important in improving local shopping facilities for local residents and will help to claw back expenditure from other centres outside the catchment area and out-of-centre stores.” (ES)</i></p>	