



Island Farm Sports Village

Bridgend, Wales

Non-technical Summary

A Development by HD Limited

September 2009

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1 INTRODUCTION

1.1 Purpose of the Statement

- 1.1.1 This Non-Technical Summary has been prepared to provide a summary of the findings of an Environmental Statement that has been prepared in support of an Outline Planning Application (app. ref. P/08/1114/OUT) for a 'Sports Village and Phase 2 of The Bridgend Science Park' on land at Island Farm, Bridgend.
- 1.1.2 It is submitted on behalf of HD Limited, the applicant.
- 1.1.3 The Outline Planning Application (app. ref. P/08/1114/OUT) was submitted and registered on the 12th December 2008, but has not been issued for consultation pending the retrospective submission of the Environmental Statement, Planning Statement, Design and Access Statement and Sustainability Statement.
- 1.1.4 The full Environmental Statement is contained within the following volumes and should also read in conjunction with the listed planning support documentation
- Environmental Statement
 - Volume 1
 - Volume 2
 - Volume 3 – Technical Appendices
 - Design and Access Statement
 - Sustainability Statement
 - Movement Assessment
 - Site Masterplan

The Report Structure

- 1.1.5 This summary is structured as follows:
- Section 2: Description of site and surroundings
 - Section 3: Planning history of the site
 - Section 4: Details of the proposed development
 - Section 5: Outline of the relevant planning policy framework
 - Section 6: Outline of the key considerations relating to the proposal
 - Section 7: Chapter Summaries
- 1.1.6 Figure 5, the Illustrative Masterplan is attached at the end of the report.

2 SITE AND SURROUNDINGS

2.1 The Site

2.1.1 The development area extends to a total of approximately 52 hectares comprising:

- 13.3 hectares of predominantly tree and scrub covered land is owned by Bridgend County Borough Council (BCBC to the north);
- 35.8 hectare of predominantly arable farmland in HD Ltd control to the south and east; and
- 2.8 hectares of grazing land owned by Merthyr Mawr Estates to the north east.

2.1.2 The BCBC land is sited within the northern sector of the site and formed part of the Crossways Country Club and Second World War prisoner of war camp. A single storey building, the only surviving building from the camp (Hut 9), has been listed (Grade II) and is located in the northeast part of the site.

2.1.3 The remainder of the BCBC owned land predominantly comprises scrub, rough grassland and treed habitat land.

2.1.4 The land within the ownership of HD Ltd is still predominately under agricultural land use, facilitated within medium sized arable fields bounded by mature hedges.

2.1.5 The application site falls within the remit of Bridgend County Borough Council (BCBC) and a location plan is detailed within Appendix A.

Landuse, Settlements and Built Development

2.1.6 The key settlements in relation to the site are:

- Bridgend, a large town centred upon the River Ogwr. The southern urban edge, Whiterock, is located immediately north of the A48.
- Ewenny, a small ribbon settlement, is located 500m to the southeast, south of the river Ewenny and is located at the junction of the B4524 and B4265.
- Corntown, also a ribbon village continues east from Ewenny along the A4524, 1.4km east/southeast of the site.
- Lalestone is a more nucleated small settlement located about 700m towards the east of Bridgend approximately 2.3km from the site.

Topography

2.1.7 The site lies along the southwest slopes of a shallow ridge which flattens towards the Ogmere River to the west and Ewenny River to the east.

2.1.8 To the south of the site the topography is characterised by an northeast x southwest undulating escarpment that steeply rises from the Ewenny and Ogmere river valleys towards Ogmere, Ewenny, Old Castle, Tir-Croes and Beacons Downs (approximately 90-100m AOD)

Site Topography

- 2.1.9 The site is characterised by a gentle east to west ridge that flattens out towards the north west and south boundaries. The highest part of the ridge lies adjacent to the science and technology park at approximately 31-32.5m AOD. The topography gently slopes north towards the A48 (17.5m in the northwest and 21.30m in the north); southeast towards New Inn Road and railway line (16.8m AOD); southwest towards New Inn Road and Merthyr Mawr Road junction (17.8m AOD). The topography sharply falls by 3-6m within three swallow holes or Karst features located in the middle and southwest of the application site.

Geology

- 2.1.10 A typical trial pit excavated during the intrusive works shows that topsoil depths range from 0.2m to 0.7m deep, a silty material from 0.2m to around 2m deep with increasing gravels and cobbles from 2.0m down. Boreholes showed that rock head is between 5m and 7m below existing ground levels
- 2.1.11 The geology beneath the site is susceptible to natural cavity formations features, referred as "Karst" features. These cavity formations are often referred to as swallow holes and are naturally occurring voids within the ground. Features have been observed in the south of the site.

2.2 Site Surroundings

- 2.2.1 The site is bordered to the northeast by the Bridgend Science Park and a cul-de-Sac housing development off Island Farm Road. The urban areas of Bridgend dominate the land use to the north of the A48.
- 2.2.2 The east boundary is bordered by a nursing home and the Bridgend to Barry rail line. Further east, land use is dominated by industrial parks and out of town retail stores almost as far as the motorway junction (35) approximately 6.0 km from the site.
- 2.2.3 The site is bordered to the south by a hedgerow and New Inn Road beyond which lies agricultural land uses as far as the Ogmore Road. The land south of Ogmore steeply rises onto the wooded slopes of Ogmore Down.
- 2.2.4 The Ogmore River and flood plain border the west boundary beyond which lie small to medium fields interspersed by woodland and farms. Merthyr Mawr House (Grade II*) and the small picturesque village of Merthyr Mawr lie 500m and 1.2 km from application site respectively.

3 PLANNING HISTORY

3.1 Current Outline Application (Ref. P/08/1114/OUT)

- 3.1.1 An Outline Planning Application was submitted to Bridgend County Borough Council on 12th December 2008 for the development of a Sports Village (including playing fields, stadia and other employment uses); 15,000 sq m Science and Technology Park; access roads; strategic landscaping; Nature Conservation Park; and related infrastructure (application ref. P/08/1114/OUT).
- 3.1.2 The application was not issued for consultation pending the retrospective submission of an Environmental Statement, Planning Statement, Design and Access Statement and Sustainability Statement (as submitted herewith).
- 3.1.3 The illustrative plans submitted with application ref. P/08/1114/OUT have subsequently been superseded and replaced with those appended to the accompanying Environmental Statement and Design and Access Statement.

3.2 Other Relevant Planning History

- 3.2.1 The site has been subject to a number of planning applications from the late 1980's and most recently in 2002.
- 3.2.2 Most relevant is an outline application for the development of a WRU National Academy; sports and leisure facilities; hotel / restaurant; business park; and housing (ref. P/03/58/OUT) was considered by Planning Committee on 05/06/03. Members resolved that subject to the applicant entering into a Section 106 Agreement, permission should be granted (subject to 81 conditions). However, the Section 106 Agreement was not concluded and in the absence of a completed Agreement, the application was refused.

Agricultural land

- 3.2.3 In May 2003, the First Minister took the decision not to call in the previous planning application at Island Farm after due consideration of all issues and advice from planning officials. Officials recommended calling in the application on the grounds that the proposal would mean the loss of a substantial area of high quality agricultural land. However, their advice was that the case for call-in was 'finely balanced'. It was concluded that while the quality of agricultural land on to the south of the site is good, it is not of the highest grades – with less than a quarter of the land take being Grade 2 or above with the remainder Grade 3A.
- 3.2.4 The arable land in the agricultural assessment is not deemed suitable for growing vegetables or high value food crops and would probably remain as a means of growing animal feed.

Committed Development

- 3.2.5 Three committed developments, were identified and are most relevant to the Movement Assessment these being:-
- Waterton Development (Application 08/320) - comprising 2 No. non food retail units. As classified and described in a previous TA dated March 2003 and

supplementary report dated June 2008 prepared by Turner Lowe Associates on behalf of the Dovey Group. Total area 5345m²;

- Broadlands Development – comprising 358 residential dwellings. Privately owned; and
- Brocastle Development (Application 05/933) - comprising 30 units allocated for sheltered / retirement accommodation.

3.2.6 The site's planning history illustrates that the principle of development on the Island Farm site is long established.

3.2.7 Application ref. P/03/58/OUT is of particular relevance to the proposed development – this application, which was determined in accordance with the adopted (current) Unitary Development Plan, was recommended for approval and Members resolved to grant permission for the development at Planning Committee. Subject to appropriate conditions and a (completed) Section 106 Agreement, which would act to mitigate any adverse impacts of the development, a scheme consisting of sports / leisure facilities and a science park on the Island Farm site (as proposed), should be therefore be considered acceptable in principle.

4 DEVELOPMENT PROPOSALS

4.1 The Proposal

4.1.1 The project has been developed to provide an innovative and considerate design incorporating a number of initiatives to meet the challenges of sustainable development.

4.1.2 It is proposed that the scheme will consist of the following uses:

Major Sporting Facilities and Stadia

- A 15,000 seat stadium suitable for the Celtic Crusaders Rugby League.
- A 2,000 seat stadium suitable for Bridgend Town Football, plus 2 additional football pitches.
- A 5,000 seat stadium for Bridgend Ravens Rugby Union Club, plus 3 ancillary outdoor training pitches.
- An indoor tennis centre and 10 outdoor courts.
- An indoor 4G training pitch and sports hall offering a range of indoor sports such as badminton and squash.
- An indoor swimming pool.
- Ancillary offices and uses

Infrastructure & Services

- Access road and signalised junction onto the A48 and secondary link onto Technology Drive.
- A 16.7ha (41 acre) SINC area safeguarded for nature conservation.
- Cycle paths and footways improvements on the A48.
- Internal site footways and cycle paths.
- Internal site access roads and parking for 2262 vehicles.
- A Green Bridge over the proposed A48 link road.
- A 135 space Park and Ride facility
- Associated hard and soft landscaping.
- Diversion of the overhead power lines and towers between the west and east boundaries.

Science Park

- 21,000 m² extension to the Bridgend science park (B1a & b)
- Internal access roads, parking and associated landscaping

4.1.3 An Illustrative Masterplan, has been produced as part of this application, and provides a

visual representation of the proposed site layout with proposed mitigation measures in place developed from a series of parameter plans which have been identified by each discipline. This is perceived to provide the best balance of constraints and solution for the intended uses.

4.2 The Proposed Phasing

4.2.1 The indicative phasing for the proposed development that is considered within each of the chapters is shown on Figure 10.

- Phase I – Enabling Works, A48 Junction, Internal Site Access
- Phase II – Rugby League Stadium followed by Tennis Centre, Sports Centre, Bridgend Ravens Rugby Union Stadium, Bridgend Town Football Stadium and Park and Ride;
- Phase III – Phase 2 of the Bridgend Science Park.

4.2.2 Additionally, a rate of construction has been assumed for assessment which is considered in the construction programme contained within Volume 2 to provide the worst case scenario as below:

- Phase 1 – 4-6 months
- Phase 2 – 20 months
- Phase 3 – 60 months

4.3 The Proposed Development

Design Concept and Overview

4.3.1 Whilst an illustrative masterplan (Figure 5 Illustrative Masterplan) has been developed for the outline planning application, the EIA where appropriate assesses a series of parameter plans contained within Volume 2. Assessment of parameters enables a reasonable worst case scenario to be evaluated in each discipline rather than one solution. At this stage the illustrative masterplan is regarded as the most likely way in which the proposed development will proceed within the parameters. Complex large-scale development such as this proposal requires a degree of flexibility which the parameter plans provide but within a defined set of circumstances and parameters. Assumptions and limitations are considered in each of the relevant assessment chapters.

4.3.2 The parameter plans considered as part of this submission are:

- Figure 2 Application Boundary
- Figure 6 Development Framework Plan
- Figure 7 Landscape Framework
- Figure 8 Building Heights
- Figure 9 Lighting Intensity

- Figure 10 Phasing

Operation

- 4.3.3 The scheme, when fully operational, will be unique in South Wales providing a destination for club, national and international profile sport.
- 4.3.4 This project, by nature of its scale and regional significance will act as a generator and catalyst for regeneration of the Town centre and will have many other significant indirect socio-economic benefits.
- 4.3.5 The recent withdrawal of The Celtic Crusaders Super League team from Brewery Fields to Newport Gwent Dragons stadium in Rodney Parade is a significant blow for the Town reducing valuable match day footfall traffic in the town centre. A key objective is that Island Farm will be the long-term home not just for the Celtic Crusaders, but also Bridgend Town football club and Bridgend Ravens Rugby Union club, which currently share inadequate and outdated facilities at The Brewery Fields near the town centre. The proposed sports village will allow these well established sporting disciplines to grow and develop to their full potential and will sit alongside complementary sports such as a tennis, boxing, squash, badminton, cricket and swimming.
- 4.3.6 As well as its excellent sporting credentials Island Farm, will offer a diverse range of employment opportunities that will yield over 1000 jobs and up to 1500 temporary positions on match days. Spectators are estimated to yield an additional £4.5m into the local economy and a further £350,000 per annum through business support and supplies.

Landscape and Biodiversity

- 4.3.7 The proposals include for protection, enhancement and enlargement of the existing Site of Interest for Nature Conservation (SINC); reinforced boundaries; 10ha of native planting; introduction of additional ponds, species rich dry and wet grassland and long-term management to enhance the overall biodiversity of the site.

Earthworks

- 4.3.8 Level building and sports pitch plateaux will be created across the gently sloping topography to create the proposed development areas. The illustrative proposals show a balanced cut and fill being achieved without need for import or export of material. Due regard has been given to the underlying aquifer and geology of the site.

Materials

- 4.3.9 It is intended that the buildings are constructed in high quality sustainably sourced materials that will compliment the setting of the site on the urban rural fringe of Bridgend. Colours and textures will be specified that integrate with the landscape rather than contrast with it. Green walls and green roofs will be used on key elevations to further aid in the accommodation of large building footprints into the landscape.

Drainage

- 4.3.10 New foul and surface water connections will be made into existing foul and surface water drains located adjacent to the north boundary running parallel with the south side of the A48 road corridor. Proposals will incorporate a comprehensive SUDS drainage strategy providing lined attenuation ponds in the SINC area and science park; green roofs; water harvesting; and permeable car park surfaces with natural filtration to the subsoil.

Lighting

- 4.3.11 All sport events require good light to facilitate enjoyment for players and spectators alike. Artificial lighting is also necessary to enable sports to be played beyond normal daylight hours and maximise the opportunity for different user groups to use and enjoy the facilities.
- 4.3.12 Lighting has been considered for its impacts on sensitive ecological and human receptors and to prevent general increased light pollution of the skies. The lighting strategy will embody the following key principles.
- To avoid over or unnecessary lighting
 - Detailed lighting schemes will be produced to ensure that health and safety issues are balanced with those of wasted resources and the adverse effects of light pollution.
 - No lighting within the SINC or adjacent to its boundaries.
 - Lighting curfews – lighting to training pitches to be turned off prior to 2100hrs and stadia lighting by 23.00hrs.
 - Glare control - pitch floodlighting to be designed to prevent light spill onto surrounding sensitive habitats and spectators. Beam angles of all lights will be below 70 degrees.
 - Sky glow- fittings and luminaires will be fitted with baffles or deflectors that deflect light downward rather than upward. Low level bollard lighting will be used in low key pedestrian areas.

4.4 Consideration of Alternatives

Alternative Sites

- 4.4.1 The development of modern high quality sports facilities (as proposed by this application) in the Bridgend area has been under consideration in recent years. Within this time period, a number of sites have been considered within the Bridgend area.
- 4.4.2 Having undertaken an assessment of the potential alternative identified sites (listed below), only Island Farm meets the five requirements of availability, suitability, accessibility, viability and deliverability.
- Land at Pencoed College – Unsuitable and has accessibility issues.
 - Land at Wern Ddu – Unsuitable and Constrained.
 - Land at Island Farm – Available, Suitable, Accessible, Viable and Deliverable.

- Land at Brackla Industrial Estate - Unavailable, Unsuitable, Constrained and Undeliverable.

4.4.3 As such, the land at Island Farm will provide the applicant with an appropriate and suitable site for the development of a sports village and science park which will have considerable social, economic and community benefits for the County Borough of Bridgend and the region.

5 CHAPTER SUMMARIES

5.1 Chapter 3 - Planning Policy Framework

- 5.1.1 In undertaking the EIA, full consideration has been given to the relevant planning policy framework. This includes guidance at the national level (produced by the Welsh Assembly Government as contained within Planning Policy Wales, the Wales Spatial Plan, and associated technical guidance), through to the regional and local level.
- 5.1.2 The application site is located within the administrative boundaries of Bridgend County Borough Council. As such, the Bridgend Unitary Development Plan (adopted in May 2006) forms the relevant 'development plan' for the area, against which the detailed proposals for Island Farm will be assessed and determined.
- 5.1.3 The south-western section of the Island Farm site is allocated within the UDP as a safeguarded sand and gravel resource. The masterplan for the Island Farm scheme has been formulated with this allocation in mind – as such, the masterplan ensures that much of the sand / gravel allocation lies beneath playing fields, away from the main built development (thus minimising the extent of any conflict).
- 5.1.4 In addition, a portion of the northern section of the application site is allocated within the UDP as a 'Special Employment Site' and, as such, is safeguarded for the establishment of high-quality employment uses. In accordance with this policy, a Phase II extension to the existing Bridgend Science Park will be developed as part of the Island Farm scheme, which it is envisaged will be occupied by a number of high-technology businesses.
- 5.1.5 In addition, in regards to employment, the creation of a prestigious sports village development of regional and national importance and status will provide a diverse range and breadth of quality jobs in the sports / leisure-related sectors.
- 5.1.6 The proposed development will contribute to, and assist the County Borough in achieving, a number of the UDP's overall aims and objectives (which largely mirror the planning policy context at the regional and national level). In summary, the application proposes a prestigious sporting centre of excellence, of the highest design and sustainability standards, within a landscaped setting incorporating significant environmental / ecological enhancements, which would consolidate the leading position of Bridgend in the region and which would bring a wide range of benefits to the town and County Borough as a whole.
- 5.1.7 As such, it is considered that the proposals are in accordance with the relevant planning policy framework (and that any potentially adverse impacts would be outweighed by the benefits associated with the proposed development in any event).

Agricultural Assessment

- 5.1.8 The land is of good quality Grade 3A and being level and free draining.
- 5.1.9 Land productive limitations are the high stone and gravel content restricting cropping to cereals and forage crops. The urban fringe location of the land also rules out livestock keeping.
- 5.1.10 With low cereal prices and low margins the site is even now marginal in terms of profitability, especially with added movement costs of commodities in and out of the land. Downward

pressure on profitability and viability of farming the site is likely to increase as European Agriculture support is scheduled for major revision downwards after 2012.

- 5.1.11 With no buildings on the site all crops need hauling away at harvest with all inputs hauled in. For the current cropping over 80 tractor and trailer movements will be needed to harvest crops with around 100 in movements with crop inputs and manure plus support vehicle movements to and from the site.
- 5.1.12 Loss of the land to the tenant farmer will have only a small impact on the business costs and not threaten business viability or the number of workers employed.

Minerals assessment

- 5.1.13 The southern half of the site is a 'sand and gravel resource safeguarded area' in the UDP.
- 5.1.14 The assessment has concluded that the sand and gravel resource is not viable at the current time or indeed for the foreseeable future. It is therefore not considered appropriate for the safeguarding of the resource to be a material consideration in determining if more permanent development would be appropriate. This is in line with the position held by the Council and WAG for the previous planning application on the site.
- 5.1.15 Since the resource is not considered viable at this stage, it would be inappropriate for the Council to seek extraction prior to development of the site as this would inevitably be at a loss. This is without taking into account the likely substantial issues extraction would cause for the design of the proposed development.
- 5.1.16 It should also be noted that much of the gravel resource will be located beneath playing pitches. Should the resource be needed in the distant future, it maybe appropriate on balance to extract the mineral at that stage.

5.2 Chapter 5 - Socio-economics

- 5.2.1 The proposals will provide significant socio and economic benefits.
- 5.2.2 Employment generation is estimated to be 1,093 jobs (818 in the study area) plus a further 1,500 match day jobs. In the context of rising unemployment and rapidly expanding population, the need for further employment opportunities in the study area is very high. On the basis of this sensitivity, the effect of the project is positive and of major significance.
- 5.2.3 The construction of the proposed development would support 21 full time equivalent jobs. This is a significant minor positive effect of the project.
- 5.2.4 The level of disturbance to local residents and business is considered to be negligible to minor adverse.
- 5.2.5 The proposed development will directly support 1,093 jobs, of which 818 would go to people within the study area. The proposed development is also anticipated to support approximately 1,500 match day jobs. This is a significant major positive effect of the project.
- 5.2.6 Spectator expenditure is estimated to equate to £4.46m per year in the study area which would equate to a further 91 jobs in the study area. This is a significant moderate positive

effect of the project.

- 5.2.7 Business expenditure is estimated to be at least £360,000 per year in the study area, which would equate to a further 7 jobs in the study area. This is a significant minor positive effect of the project.
- 5.2.8 The effect of the project on employment land supply is considered to be neutral.

5.3 Transport

- 5.3.1 The application site is ideally located adjacent the A48, a major highway providing direct local, regional and, via the M4, national access.
- 5.3.2 Whilst the A48 is currently operating at or above capacity at peak periods and will continue to do so at the future design dates, the traffic generated by the proposed development at off-peak periods can be accommodated. BCBC have aspirations to increase the capacity of the A48 and are currently awaiting confirmation of funding as part of the SEWTA Regional Transport 5 year plan.
- 5.3.3 The implementation of a park and ride facility has many advantages with the support of BCBC fundamental to its success.
- 5.3.4 The site can accommodate special events subject to the implementation of a Event Management Plan. The plan will need to regulate the arrival and departure of spectators/visitors in a manner which minimises delays and disruption to both the local populace and normal day to day events.
- 5.3.5 Access into the application site will primarily be provided from a new signalised junction to be constructed on the A48, with secondary access provided from Ewenny Road via. an extension to Technology Drive.
- 5.3.6 The scheme is designed to encourage maximum use of walking and cycling by the provision of facilities within the development site and alongside the A48, with linkages wherever possible to existing amenities.
- 5.3.7 Adequate parking is central to the development proposals providing, access to the sports village and business park. Alternative parking facilities for the town centre is provided by the provision of a park and ride facility.
- 5.3.8 Existing public transport is minimal; the provision of a park and ride facility will reduce traffic within the town, reducing the environmental impact, whilst improving access to the sports village and business park. The support of the Local Authority of the park and ride is fundamental to the strategy.
- 5.3.9 Traffic surveys and analyses suggest that the existing A48 / A473 corridor is operating above capacity at peak periods and is also expected to be operating above capacity when the development proposals are implemented. The highway authority Bridgend CBC has applied to SEWTA under the Regional Transport Plan for funding of the up-grading of the A48 in the vicinity of the site, the implementation of which would mitigate the capacity issue.
- 5.3.10 During special events, which are likely to be held during off-peak periods, the public highways will be capable of accommodating the additional flows. A traffic management plan will be required for the distribution of traffic onto the A48. Restricted on-site parking will be provided,

with additional parking for cars provided within suitable parking sites such as existing large business car parks and areas located within reasonable distance of the site generally along the A48 / A473 corridor. Park and ride buses will be allocated to collect car drivers and passengers at regular intervals.

5.4 Geotechnical and Geo-environmental Issues

- 5.4.1 A site waste management plan will be developed in accordance with the Site Waste Management Plans Regulations 2008 along with an earthworks management plan to address the issues with earthmoving and reuse associated with clearance operations. The plan will be developed with and approved by the Environment Agency.

Earthworks Summary

- 5.4.2 Careful consideration has been given to minimising existing site disruption by setting development platform levels as close to the existing as possible. Several ground model options were developed and analysed to determine the optimum base development levels.
- 5.4.3 Ground modelling of the masterplan has shown that a cut and fill earthworks balance will be achieved within the site boundary without adversely affecting the finished heights of the proposed buildings or the interfaces with existing infrastructure at the site boundaries.
- 5.4.4 This will avoid importing fill material to achieve desired levels and remove the requirement for disposal of surplus material 'off site' with corresponding environmental benefits. Avoiding large numbers of vehicle movement to move cut/fill material benefits the construction programme, the local residents and the environment in general.
- 5.4.5 Through an iterative process the development platform levels were refined to find the optimum levels. This has informed the masterplan as a whole. Level changes between each platform can be achieved with landscaped batters rather than extensive retaining structures.

Karst Features (Natural Cavity Formations)

- 5.4.6 The geology beneath the site is susceptible to natural cavity formation or "Karst" features these are sometimes referred to as sink or swallow holes.
- 5.4.7 These features have the potential to be direct pathways between ground surface and ground water and may pose a risk to controlled waters. Assessment has concurred that the risk to controlled waters from site derived contamination is insignificant.
- 5.4.8 Karst features will be fully investigated and recorded before detailed design commences and appropriate engineering treatment carried out to remove risks associated with their presence. Risk to the aquatic environment is considered low following treatment

Foundation Solutions

- 5.4.9 For simple low rise structures traditional mass concrete strip / trench fill / pad foundations, extended into the medium dense to dense sandy gravels or stiff clay will be applicable for the majority of the buildings.
- 5.4.10 Foundations for the more significant buildings such as the main stadium are likely to be large pad foundations or piled. Structures near any Karst feature or at risk from the formation of

such a feature will be piled in such a way to avoid the structural risk.

- 5.4.11 In the development areas, the existing ground is uncontaminated so the risk to end-users, construction workers and the geological/hydrological environment is negligible. Minor contamination in the SINC area is below the levels for its intended use. The site does not require remediation and an earthworks balance will be achieved on the site.
- 5.4.12 It has been demonstrated that from a Geotechnical and Geo-environmental viewpoint that the residual effects of the development to both Human health and the aquatic Environment are considered negligible to minor.

5.5 Archaeology and Historic landscape

- 5.5.1 The Glamorgan-Gwent Archaeological Trust, Projects Division (GGAT Projects) have undertaken a desk-based assessment of the archaeological effects of a proposed development at Island Farm, Bridgend. The assessment reviewed information held by the regional Historic Environment Record (HER) and the National Monuments Record (NMR), as well as cartographic and documentary sources. Aerial photographs were examined and a site visit conducted.
- 5.5.2 Part of the Registered Historic Landscape of Merthyr Mawr, Kenfig and Margam Burrows lies within the study area, and a separate ASIDOHL study has been conducted in order to assess the significance of the impact of the development on the Historic Landscape (see Section X). This ASIDOHL and desk-based assessment form part of a larger Environmental Impact assessment.
- 5.5.3 A total of 50 sites of archaeological interest were identified within the study area during the course of the desk-based assessment, none of which are Scheduled Ancient Monuments. Fourteen of these have statutory protection as Grade II Listed Buildings, although only one (Hut 9 of PoW Camp (198) Special Camp XI, 02215m/31803/LB11362) is located within the study area.
- 5.5.4 The effect of the development on the sites of known archaeological interest has been assessed as Severe in five cases, major in a single case and Beneficial in one. The severely affected sites are two sections of the projected route of the Glanwenny/Caerleon - Loughor Roman Road (01016.5w/86926 and 01016.6w/86926), Island Farm Barn (04353m) and a sunken Trackway (04354.0m), whilst the proposed development will have a major effect on the POW Camp (198) Special Camp XI (02214m/31802). It is considered that the new access arrangements will have a Beneficial effect on Hut 9 (02215m/31803/LB11362).
- 5.5.5 A map regression exercise combined with analysis of documentary sources and aerial photographs has identified four previously unrecorded sites of archaeological interest within the development area a Pond (IF08), a Building (IF09), Crossways (IF10) and group of three possible Cairns (IF12). It has been assessed that the proposed development will have a Severe effect on all four sites.
- 5.5.6 In order to mitigate against the effect the proposed development will have on the above sites of archaeological interest it has been suggested that:
- 5.5.7 A total station survey should be conducted on the site of POW Camp (198) Special Camp XI (02214m/31802).

- 5.5.8 A series of test-pits should be excavated across the projected route of the Glanwenny/Caerleon - Loughor Roman Road (01016.5w/86926 and 01016.6w/86926); once the route has been established two evaluation trenches should be excavated across its route.
- 5.5.9 A topographic and photographic survey should be conducted along the route of the Trackway (04354.0m).
- 5.5.10 An archaeological evaluation should be conducted on the group of three possible Cairns (IF12) in order to confirm their identification and inform future mitigation.
- 5.5.11 An archaeological watching-brief should be conducted on all groundworks in the vicinity of the Pond IF08, the Building IF09 and Crossways (IF10).
- 5.5.12 It should be noted that the development lies within a landscape of high archaeological complexity, with important remains of all periods. Given the historical and archaeological importance and sensitivity of the surrounding landscape, and the high numbers of finds recovered from the vicinity, it is clear that there is potential for buried remains dating to all periods in the development area.
- 5.5.13 The ASIDOHL2 assessment exercise has established the overall significance of the impact of the Island Farm development upon the historic landscape of Merthyr Mawr, Kenfig and Margam Burrows has been assessed as 'moderate'. However, 'moderate' is relatively low on the ASIDOHL2 scale of significance, and as a result it is not considered that the proposed development would greatly reduce the capacity for understanding or appreciating the landscape's historical meaning or significance.

5.6 Ecology

- 5.6.1 The ecology of the Island Farm site has been studied to assess the impacts of the proposed development. Desk studies have been combined with field survey for habitats, birds, reptiles, amphibians, invertebrates and mammals, including bats and otter.
- 5.6.2 The Island Farm POW Camp SINC, a locally identified wildlife site, will be directly affected. There will be potential direct or indirect effects on a number of important habitats also (deciduous woodland, grassland, hedgerows and ponds), whilst an important population of dormice and bats, and small numbers of relatively common bird species, reptiles and invertebrates could be affected, through habitat loss or disturbance.
- 5.6.3 Detailed actions have been identified and specified in order to reduce the scale of ecological impacts and enhance the site in accordance with best practice. Key will be the extension of the SINC in the south-west of the site to replace what is lost, with enhancement and better management of the SINC site overall to provide a high quality area for wildlife. Green corridors will also be maintained and enhanced to provide connectivity to the wider countryside, and a green bridge will be provided over the main access road to provide for the safe passage of dormice and bats.
- 5.6.4 New roost sites will be provided for bats and careful timing and supervision of works will seek to reduce and manage ecology impacts. New ponds will be provided, designed to be optimal for wildlife species. Long-term management and maintenance plans will provide the framework for the future management of the site. The implementation of the plan for wildlife will be overseen by a dedicated ecologist to ensure that the ecology of the site is disturbed as little as possible, and that the enhancements specified are implemented to good effect.

- 5.6.5 Even with such measures in place, there will initially be some disturbance to dormice and breeding birds. However, some significant beneficial changes of potentially major significance will arise from habitat protection and enhancement within the SINC as well as the creation of a potentially important roost site for the rare and endangered lesser horseshoe bat. Habitat enhancements can be expected to impact positively on a variety of wildlife species, and sustain or enhance the biodiversity of the Island Farm site.

5.7 Landscape and Visual

- 5.7.1 There are no landscape designations within the site other than a single oak tree situated at the southwest boundary and is protected by a group TPO. (County of Glamorgan TPO (No3) - 1954).
- 5.7.2 To the west, Merthyr Mawr, Merthyr Mawr Warren and adjoining farmland north of the River Ogmore lie within a Historic Landscape designation. Merthyr Mawr House a Grade II* Listed manor and associated Historic Park and Garden, are situated 500m to the southwest.
- 5.7.3 The landscape to the south, east and west of the site is predominately in agricultural land uses interspersed by occasional farmsteads, small settlements and detached dwellings in the river valley floors and lower slopes of the wooded escarpment. The land to the north by contrast, is dominated by the urban areas of Bridgend and the land to the east
- 5.7.4 Overall, the visual and sensory qualities of the site and immediate area are evaluated as low and moderate, recognising the influence of the urban aspect of Bridgend in views.
- 5.7.5 Of particular note is the outstanding visual and sensory evaluation of the Ogmore and Old Castle Downs which provide outstanding long panoramic views to steeply sloping hillsides of semi-natural vegetation.
- 5.7.6 The quality of the site features are variable and most noteworthy are the woodland, scrub and hedges in the northern and north western parts of the application site (designated as Site of interest for Nature Conservation). The landscape to the south predominantly comprises medium to large arable fields bounded by mature, managed but treeless hedges 2-4m high. Some tall trees occur within and around three Karst features towards the centre and southwest of the site.
- 5.7.7 There are no public footpaths that cross the site, but there are a number of public rights of way within the locality, particularly towards the west and south.
- 5.7.8 Visually, the site is well contained by the mature woodland in the north and hedgerows around the site boundaries and arable fields, which combine with the undulating topography to limit opportunities to view the site from the wider landscape.
- 5.7.9 The site is seen at close quarters from dwellings lying on the southern and western margins of Island Farm Road Cul-de-Sac, south of the A48; a nursing home adjacent to the east boundary located off Ewenny Road and the existing science park buildings near the northeast boundary. Vegetation blocks views from other nearby dwellings north of the A48 and adjacent to Ewenny Road.
- 5.7.10 In the wider landscape setting views into the site are greatly influenced by landform as well as vegetation. The majority of existing views lie in arc from Ewenny in the south to Merthyr Mawr

- Warren in the southwest. Views from the west, east and north are blocked by intervening mature vegetation or existing urban development.
- 5.7.11 The most open views are found from selected location on elevated open ground at Old Castle and Ogmore Down. From these vantage points the site is seen as part of an expansive panorama lying below the urban area of Bridgend and the site occupies a relatively small part of the overall view.
- 5.7.12 Elevated views from the south and west predominantly see the site set against a landscape and urban backdrop, filtered in the foreground by hedges and trees.
- 5.7.13 Views from the footpath to the southwest see the existing science park and nursing home lying above the application site partially blocked by hedgerows and field tree in the foreground.
- 5.7.14 Mature, dense tree belts around Merthyr Mawr House and gardens prevent any possibility of views from the house associated gardens or Merthyr Mawr even in bare leaf cover.
- 5.7.15 Filtered framed glimpses are available from the northern ramparts of Ogmore Castle and path north of the Stepping Stones and the existing science park in the background. The pylon towers and overhead lines are a conspicuous detracting feature in all these views.
- 5.7.16 There will be a permanent loss of trees and scrub to the north as a result of the new access road into the site but significantly less than the previously approved scheme associated with the previous application.
- 5.7.17 Most of the internal hedgerows and a small number of trees will be lost in the arable land to the south as a result of the sports village development, but these have less ecological sensitivity and are proposed to be transplanted into new locations.
- 5.7.18 Significant landscape enhancement is proposed in compensation for these losses, to include:
- 10 ha of native tree planting;
 - Green bridge across the new link road
 - Transplanting hedgerows into new locations
 - Improved landscape management
 - New ponds and wetland features
 - Grassland habitat
- 5.7.19 The scale of permanent landscape impacts can also be reduced through, careful design, protection of remaining features during the construction period.
- 5.7.20 Some of the sports facilities will need temporary floodlighting to maximise their all year round use which could lead to significant indirect adverse effects on human and ecological receptors if not carefully designed and mitigated. At the detailed design stage, obtrusive light pollution will be avoided by preventing unnecessary lighting; reduction through careful choice of luminaires and lamp fittings and night-time curfews when most lights should be turned off.
- 5.7.21 While there will be permanent residual views of buildings, the majority will be of negligible, minor or moderate significance following the implementation of the comprehensive mitigation

proposals. Views are a subjective matter and have been assessed as being adverse because of the change in the appearance of the undeveloped landscape. It is anticipated that the majority of receptors will embrace these community led proposals and be stimulated by the quality and appearance of this development.

- 5.7.22 The loss of landscape features will be significantly compensated by the scale of proposed planting and through improved management, will give rise to moderate beneficial landscape and ecology effects.
- 5.7.23 Overall, this development can be accommodated within the landscape without significant long term harm to the landscape its character and visual resources of the site and surrounding area.

5.8 Hydrology

- 5.8.1 In accordance with TAN 15 development and flood risk, the proposed development site is considered to be at little or no risk of fluvial or tidal/coastal flooding.
- 5.8.2 The desk top study and intrusive site investigation carried out have concluded that the controlled waters are not at risk from site derived contaminated materials as the development site has been classified as 'uncontaminated' there is therefore no site derived source of contamination to impact the controlled waters.
- 5.8.3 The site investigation work has presented an number of foundation solution for different development locations and proposed uses, it has been identified that karst features (natural cavity formations) exist under elements of proposed footprints and that a potential risk to controlled water is associated with these features. It is recognised that further detailed investigation will be required to fully inform the foundation solutions and
- 5.8.4 where required any necessary treatment strategies however it is considered that utilising informed design solutions developed in consultation with the EA and modern methods of construction the risk to the controlled waters can be designed out and is considered low
- 5.8.5 Construction activities associated with the development have the potential to pose a risk to the controlled waters good site management practices in accordance with current guidelines will be in place to mitigate this risk.
- 5.8.6 Where karst features are noted across the site constraint drawings will be development within the earthworks management plan to ensure that appropriate procedures are in place to prevent potential sources of construction derived contamination a pathway to the sensitive receptor.
- 5.8.7 The risk from construction based activates adopting and implementing the above procedures is considered manageable and therefore low
- 5.8.8 It is considered that where strategy dictates the use of open drainage ditches, swales or lagoons the lining of these systems will prevent any ingress of surface water from the development site to the controlled aquifer. Therefore the operational risk from the development is considered low.

5.9 Air Quality

- 5.9.1 The principal impacts relate to emissions from the increased traffic associated with the scheme. Existing air quality at Ewenny Cross junction is poor, with one of the Government's health-related air quality objectives likely to be exceeded. The scheme would worsen conditions around this junction, leading to a substantial adverse air quality impact. If the Council's anticipated junction improvement works were to increase average vehicle speeds around Ewenny Cross junction, vehicle emissions would be lower and the objective would not be exceeded. The impact of the scheme would thus be reduced to slight adverse.
- 5.9.2 The construction works have the potential to create dust and it will therefore be necessary to apply a package of mitigation measures to minimise dust emission. Any dust effects will be temporary and relatively short lived, and will only arise during dry weather.
- 5.9.3 Existing conditions within the study area show that the annual mean objective for nitrogen dioxide is being exceeded around Ewenny Cross. The Council is investigating air quality in this area and may, in the future, need to declare an Air Quality Management Area for this pollutant.
- 5.9.4 The operational impacts are principally those associated with road traffic emissions. The impact of increased emissions arising from the additional traffic on local roads has been assessed. Concentrations have been modelled for eleven worst-case receptors, representing existing properties where impacts are expected to be greatest.
- 5.9.5 It is concluded that if the scheme were to proceed without any upgrade to the existing Ewenny Cross junction, the annual mean objective for nitrogen dioxide would be exceeded. Because the objective would be exceeded, this impact has been judged to be substantial adverse. The same modelling shows that if annual average speeds around the junction were to increase by 5kph, the objective would not be exceeded. It is expected that in this situation, the impact of the scheme would be, at most, slight adverse.
- 5.9.6 Away from Ewenny Cross, no objective exceedences are predicted either with or without the proposed scheme and the impacts are judged to be, at most, slight adverse.
- 5.9.7 The construction works have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emission. Even with these measures in place, there remains a risk that a number of existing off-site properties might be affected by occasional dust-soiling impacts. Any effects will be temporary and relatively short lived, and will only arise during dry weather with the wind blowing towards a receptor, at a time when dust is being generated and mitigation measures are not being fully effective. The overall impacts during construction are judged to be minor adverse.

5.10 Noise

- 5.10.1 The areas of concern, that may suffer from an adverse noise and vibration impact from the development and use of this site, are the surrounding residential properties, as identified by BCBC.
- 5.10.2 The Chapter has assessed the construction phase of the Sport Village in some detail as this will contain the most significant noise impacts, if only for limited periods during the 20 month overall construction scheme.

- 5.10.3 As the construction of the Science and Technology Park will involve techniques more akin to domestic building programmes, it is concluded that there is no need to assess these in the detailed manner that is being used for the Sports Village.
- 5.10.4 The operational use of the site has been considered, especially the impact of additional traffic movements, for both normal daily use and for match days. Whilst there are no current plans to stage large music events in the main stadia, it is anticipated that Bridgend CBC will be able to use licensing conditions to minimise the impact of music from such an event.
- 5.10.5 The report concludes that there is no long term significant adverse impact for either noise or vibration from the construction, or use, of the site.

5.11 Services and Infrastructure

On Site Surface Water Drainage

- 5.11.1 The EAW confirmed that a SUDS approach should be adopted for the drainage of the Application Site, subject to precautions required to mitigate potential contamination of the major aquifer underlying the site. SUDS solutions can include a variety of surface water flow reduction measures such as lagoons, swales, soakaways, green roofs etc.
- 5.11.2 Both surface water from the development areas and highways will be discharged to the existing sewer alongside the A48 via an attenuation lagoon located at the western side of the site. Drainage of the car parking areas will consist of permeable paving discharging to the sub-surface. The overall discharge strategy for site storm water is as follows: -
- Discharge of site roofs, highway and access road drainage to the A48 via pipework and an attenuation pond(s)
 - Discharge of A48 and A48 / site access road junction into a dedicated highway drain within the A48, without attenuation.
 - Car parking to sub-soil
- 5.11.3 Total surface water flows off-site will be mitigated in accordance with the EAW requirements by: -
- introduction of lagoons and water features
 - the introduction of green roofs
 - providing permeable car parking surfaces.
- 5.11.4 It is proposed that lagoons and other water bodies be lined to prevent the flow of potential contaminants into the sub-soil and the underlying aquifer. Water passing through the permeable car park construction will be purified by filtration and microbial action as it passes through a geotextile layer, Inbitex or similar. If the car park design were to be of a conventional impermeable paving type, with gullies and piped drainage, oil / petrol interceptors would be provided to capture and retain hydro carbons for manual removal.

On Site Foul Drainage

- 5.11.5 Drainage to the site will be provided by traditional pipework conveying both surface and foul water towards the A48 for connection into existing drainage networks. Pipework was laid in 19883/84, to serve the existing and the proposed extended Science Park within the boundary of the application site. The permissions of Dwr Cymru Welsh Water (DCWW) will be necessary for such connections. In the event of a lack of capacity in the receiving sewers, requisitioned sewers will have to be laid along the A48 corridor to outfall into the River Ogwr / 1200mm dia. trunk foul sewer.