

Evaluation of the Swansea University Bay Campus Environmental Statement



Matthew Drummond
2014426

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1.0 The Bay Campus Development Proposal

The site of the Bay Campus development is located on land previously owned by BP and acquired as part of a deal that saw St. Modwen, a construction company that specialise in the development of brownfield sites, acquiring over 3000 acres of former BP land. The deal finalised St. Modwens acquisition of all of BPs disused former sites (WalesOnline 2009).

The site was formerly part of larger petrochemical refining complex that operated in the area which included the UK's first oil refinery located in Llandarcy (B.A.Malaws 2008). Hydrocarbon refining activities took place within the area from 1921 until the site in Llandarcy was closed in 1998. At its peak capacity, the refinery was processing 8.3 million tonnes of crude oil per year (Energy Institute 2020). During WW2 the site was used to test the PLUTO system, an ocean oil pipeline that was subsequently instrumental in supplying fuel to the D-Day forces (Griffiths 2017).

The specific site selected for the Bay Campus is located on the former *BP Transit site* situated within Crymlyn Burrows, part of the Neath Port Talbot Local Authority. The transit site formerly housed 30 large above ground storage tanks.

The site had been used as bulk storage facility for petroleum products from the 1960's up until 2002 when the site was then fully decommissioned. Previously, the Transit site had been connected to the main Llandarcy refinery site, the Baglan Bay Chemical Works and the Swansea Queens Docks via a series of underground pipelines. The last of the known underground pipelines within the site boundary were excavated and removed in 2005. Primarily the site had been used to store fuel oils and gas oils, in particular *ethylbenzene* and *benzene* which has resulted in significant residual earth and groundwater contamination. (URS 2010a)

The proposed development is situated directly adjacent to the Crymlyn Burrows SSSI. A 243.5-hectare site composed of primarily saltmarsh and dune habitat; it is one of the last remaining stretches of the Swansea Bay coastline that has escaped development (CCW 2008).

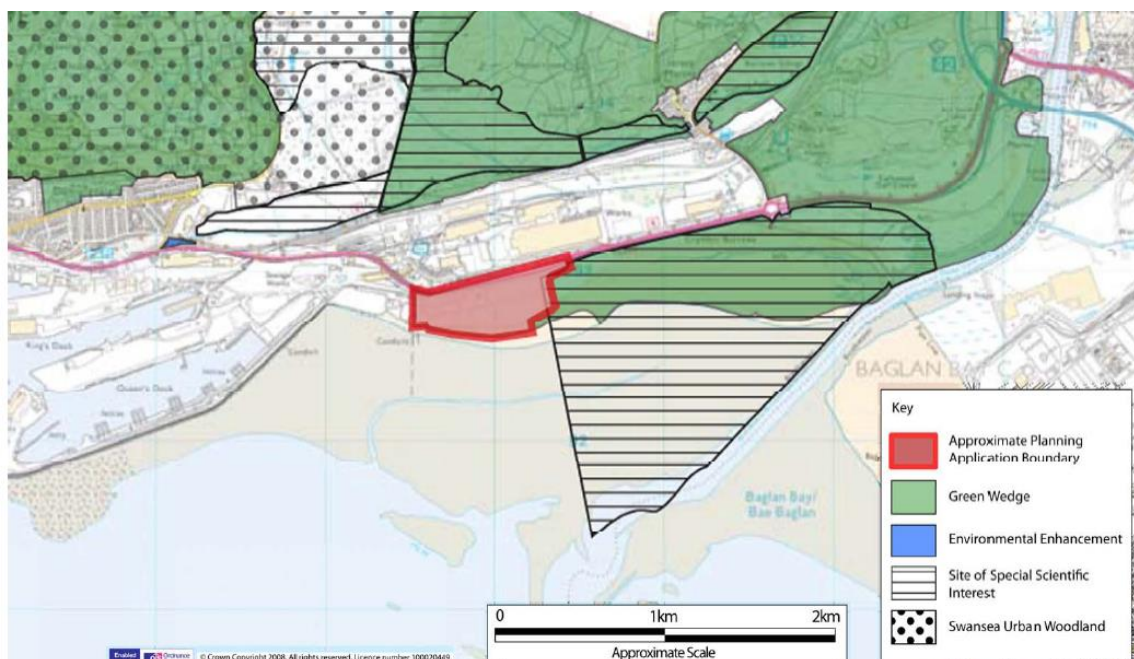


Figure 1 - Bay Campus Development shaded in red. Crymlyn Burrows SSSI is hatched area

2.0 Environmental Impact Assessment

2.1 What is an EIA?

At its core, an environmental impact assessment endeavours to provide a comprehensive evaluation of the potential impacts that a proposed development has on the environment. The subsequent findings at the end of this process should then be factored into the decisions assessing the planning application.

The first requirements for EIA were established in the US under the *National Environmental Policy Act of 1969* in response to increasing concerns of widespread environmental damage.

The original legislation enshrined in US law the fundamental principle that government has an inherent responsibility to *“create and maintain conditions under which man and nature can exist in productive harmony, and fulfil the social, economic and other requirements of present and future generations of Americans”* and *“to minimize adverse environmental impact and to preserve and enhance the environment through federal plans and programmes”*. (Glasson, Therivel et al. 2012, p .50-2)

Glasson et al (2012, p. 23) offers the definition adopted by the International Association for Impact Assessment which defines the term broadly as:

“The process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of proposed development proposals prior to major decisions being taken and commitments made.”

(IAIA 2009)

The process should be ‘multidisciplinary, systematic and holistic’ when considering the environment, developers should aim for prevention and use the EIA procedure to steer decisions accordingly.

2.2 EIA Legislation

Prior to the introduction of modern EIA legislation in the UK, environmental assessments had been required since 1947 as part of the statutory planning system. But by the 1960’s, the existing system had become poorly equipped to evaluate and control the impacts of increasingly larger projects which led to increased public scrutiny of the effectiveness of the process. The expansion of oil and gas infrastructure in the North Sea in the 1970’s further reinforced a greater need for a rigorous system to comprehensively evaluate environmental impacts.

(Glasson, Therivel et al. 2012)

2.2.1 Evolution of EIA Regulations in the UK

Sustainable development has increasingly become an important part of planning policy objectives in the UK since the publication of the *Brundtland Report* in 1987 (EA 2002). EU directives have been a key driving force of EIA legislation in the UK, with many of the regulations that cover EIA

introduced in response to the various directives on the matter. These directives are principally implemented in the UK by the *Town and Country Planning Regulations (EIA)* which has seen many amendments over the years that have attempted to expand, strengthen and simplify EIA regulations. With specific versions existing for each of the devolved nations, the T&CP regulations still remain the core legislative tool for EIA in the UK.

2.2.2 EU Directive 85/337 1985

The first specific legal requirements for EIA in the UK were outlined by the *Town and Country Planning Regulations (Assessment of Environmental Effects) 1988*. These regulations were first introduced to implement *EU Directive 85/337*, which outlines the first requirements for specific assessment of the environment during the planning phase of a development, emphasising preventative measures as being the preferred environmental strategy.

Environmental concerns aside, the directive was also intended to be used as another means to equalise the economic playing field across the single market. With national laws for environmental assessment requirements varying among member states, some countries had an economic competitive edge due to their lower EIA requirements resulting in lower compliance costs in the planning stage (EEC 1985). Although as directives rely on member states to implement legislation devised themselves; Glasson et al (2012) remarks that by 2010, the strength of the directives application across member states still varied considerably.

2.2.3 Directive 85/37 Amendments

The Directive was reviewed in 1993 and amended 4 years later by directive 97/11/EC. Glasson et al (2012) summarises the key changes made by to the directive, primarily the amendment:

- Expanded the range of project types in Annexes 1 & 2 to include more developments.
- Increased the list of project characteristics and impacts to be evaluated during the EIA.
- Permits the developer the right to request a scoping opinion from a relevant, competent authority. Conversely, it also obligates the appropriate authority to provide an opinion on EIA requirements for certain projects irrespective of the developer's requests.
- Alternative designs or developments must be considered and the reasons for the final choice should be explained.
- Transparent explanation of the decision process and the proposed mitigation measures must be made available to the public. (Glasson, Therivel et al. 2012)

Amended again in 2003, directive 2003/35/EC sought to align the process with the principles of the *Aarhus Convention* (EC 2016). This requires EU member states “..to guarantee rights of public participation in decision-making in environmental matters in order to contribute to the protection of the right to live in an environment which is adequate for personal health and well-being” and to “provide for access to judicial or other procedures for challenging the substantive or procedural legality of decisions..”.

(EU 2003).

2.2.4 Directive 2011/92/EU

The original directive 85/337 and its subsequent amendments were codified under Directive 2011/92/EU. This created a consolidated framework for the process within the EU requiring the following basic steps to be carried out when undertaking an EIA:

- *The project developer can ask the competent authority what information is to be provided (scoping stage).*
- *The project developer provides the requested information on the environmental impact.*
- *The environmental authorities, the public and the Member States concerned are informed and consulted.*
- *The competent authority takes a decision taking the results of consultations into account.*
- *The public is informed of the decision and has the possibility of challenging it before the courts.*

(EU Parliament 2018, p.1)

A subsequent amendment to directive 2011/92/EU was introduced in 2014 with directive 2014/52/EC. This amendment mandated the need for member states to “simplify their different environmental assessment procedures” (EC 2021). Notably, the directive required that:

- The screening process should be simplified, and authorities should respond to screening applications within 90 days.
- Public consultation should last a minimum of 30 days
- Quality of the investigation and reporting for EIA needs to improve.
- EIA reports should be made easier to understand and more accessible to the public.
- Clear, transparent justification for planning decisions with the requirement that authorities prove their objectivity and avoid conflicts of interest. (EC 2021)

Any further amendment or replacement of EU directives will no longer have a direct bearing on future UK EIA regulations post-Brexit.

2.3 Summary of the EIA Process

The overall EIA process is neatly summarised by Glasson et al (2012) in the flow chart below;

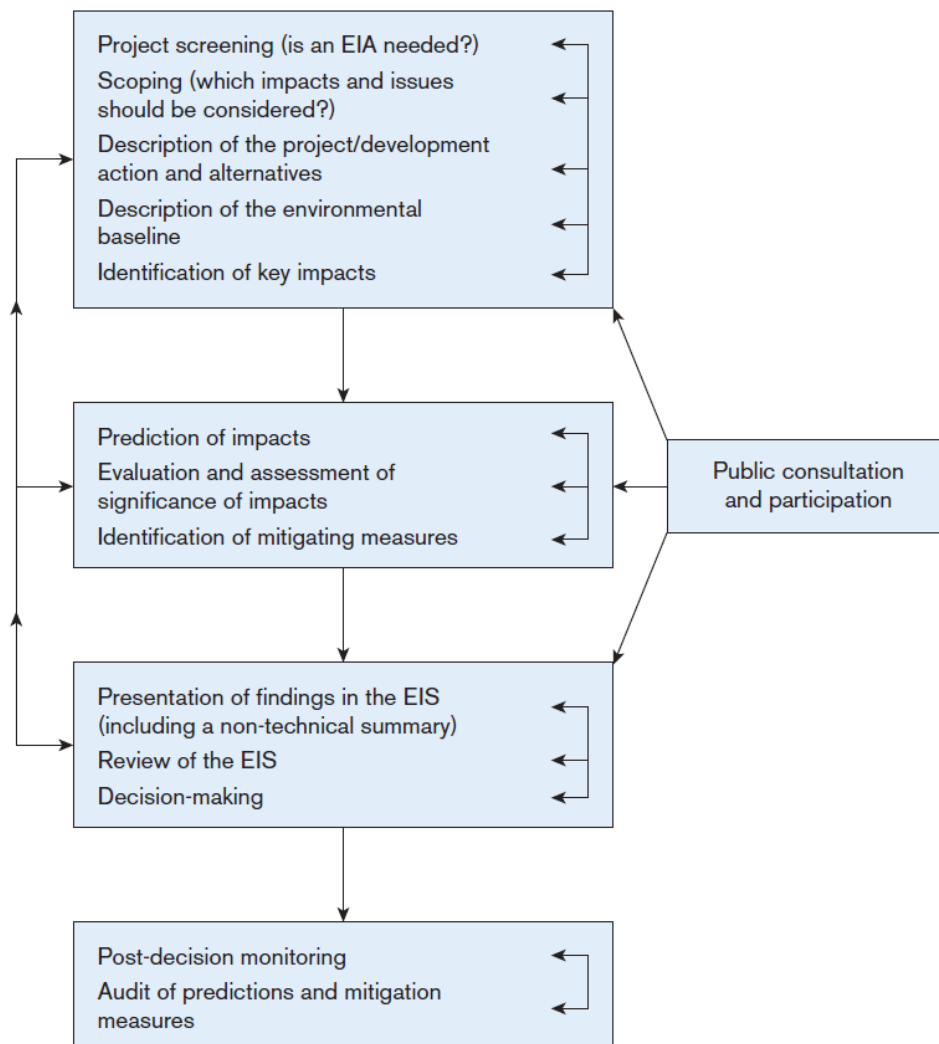


Figure 2 Important Steps in the EIA Process

2.3.1 Screening

Screening is the simple procedure of determining whether a development will require a statutory EIA or not. The types of development that are certain to require an EIA are listed within Annex 1 of the T&CP regulations. Annex 2 lists development categories that are likely to require an EIA, depending on the fulfilment of certain qualifying criteria. Whether an EIA is deemed a statutory requirement or not, developers are encouraged to undertake discretionary EIAs wherever possible (EA 2002).

2.3.2 Scoping

A critical step in the EIA process is Scoping which provides a key opportunity early in the process for LPA consultees to identify important environmental considerations that will need assessing. Scoping should ensure that detailed assessments focus on the key environmental impacts and ensure resources are not disproportionately allocated to minor issues (EA 2002).

Scoping can be both a *formal* and *informal* process.

A *formal* scoping opinion from the LPA can be obtained prior to the undertaking of an EIA. Alternatively, a developer can engage in an *informal* scoping process by consulting with relevant stakeholders throughout the developments planning. This can enable issues to be addressed early projects, improving co-ordination between the LPA and developer.

2.3.3 Baseline Assessment

A baseline study of the site to evaluate existing conditions is essential. This will invariably include an ecological study of the flora and fauna within the development area, with particular attention given to any species that is rare or endangered. Baseline assessments are essential to evaluate and estimate the potential adverse impacts of a development.

2.3.4 Risk Assessment and Significance Criteria

A final risk assessment of identified impacts is quantified using a standardised system of significance criteria. By summarising many complex and varied issues using a uniform system of terms, potential impacts can be more readily explained and understood by practitioners and planning authorities.

2.3.5 Mitigation Measures

Any potential negative impacts identified throughout the projects design and environmental assessment should have appropriate mitigation measures formulated. A Hierarchy of mitigation strategies is outlined in guidance produced by the Environment Agency (2002, p. 7). Environmental impacts should be monitored throughout the construction and operation of a development and the effectiveness of mitigation measures evaluated.

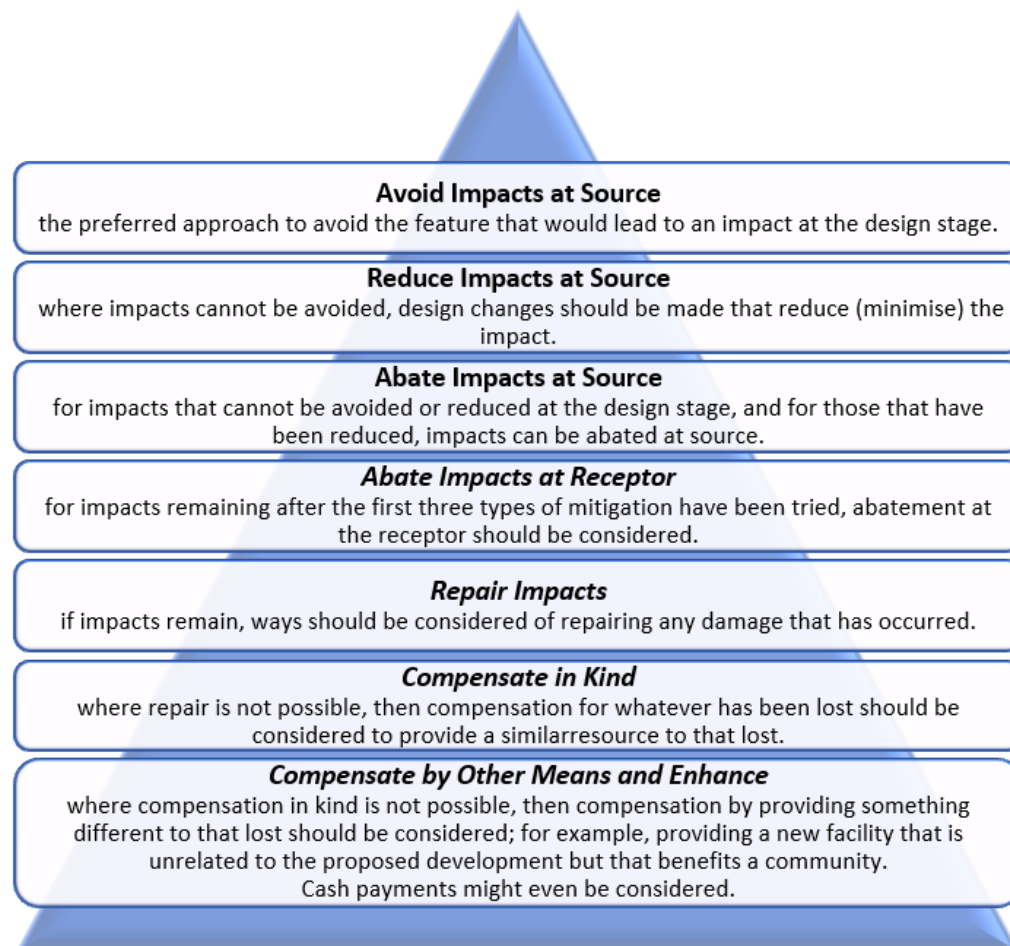


Figure 3 - Practical Hierarchy for Mitigation

3.0 Evaluation of the Bay Campus Environmental Statement

The Environmental assessment was required as part of the planning application submission and intends to determine the key impacts of the project. At just over 1000 pages, the full 3 volumes unquestionably make the Bay Campus Environmental Statement a substantial document providing a seemingly comprehensive overview of the development's potential impacts on the surrounding area.

3.1 Legislation and Policy Compliance

3.1.1 Town and Country Planning Regulations

Referenced throughout the ES, but specifically within chapters 2 & 3, are the various regulations, regional and local policies that were considered throughout EIA process. The extensive list, which is partly tabulated in *Appendix 7.1*, begins to demonstrate the depth of regulatory complexity underpinning the EIA process.

The dominant legislation covering EIA requirements for this project is the *Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (amended 2006, 2007)* and *Town and Country Planning EIA (Wales) Regulations 2008*.

The development meets the criteria described in section 10(b) of Schedule 2; *Urban development projects, including the construction of shopping centres and car parks, sports stadiums, leisure centres and multiplex cinemas* (UK Gov 2008). It requires any development with a footprint that exceeds 0.5 hectares to carry out an EIA. As the 28-hectare development site also borders the Crymlyn Burrows SSSI, an EIA would be required to assess the impact on the development's construction and operation on the protected area.

3.1.2 Regional Planning Policy Context

Consideration is given to the relevant local, regional and national policy frameworks;

Table 1 - National and local policies relevant to this EIA

Policy	Level
Planning Policy Wales 2002	National
Wales Spatial Plan 2004 (updated 2008)	National
The National Waste Strategy for Wales: Wise About Waste 2002	National
NPT CBC Unitary Development Plan (UDP)	Local

The site is within a region targeted by The Wales Spatial Plan “for growth, with priority for the development of a knowledge economy and an integrated skills strategy”. The EIA reinforces this notion in *Chapter 3*, paraphrasing PPW (2006, p. 48), that emphasis should be placed on “*the importance of social considerations in development control decisions and asserts that provision should be made for land to deliver further and higher education opportunities within Wales*”.

The authors acknowledge regional policy guidance issued by the South West Wales Strategic Planning Group which stipulates that developments should not adversely impact on environmental “*conservation, protection and enhancement*”, particularly in areas with special designations (URS 2010a, p. 48 – 50).

3.2 Scoping Opinion

A formal Scoping process was not undertaken as part of the EIA. Instead, the developers obtained an informal scoping opinion from NPT CBC in conjunction with the CCW and EA *Wales* (included in Vol II of the ES).

As part of the informal scoping process, a series of informal consultations were undertaken over one year involving the following stakeholders:

- Neath Port Talbot County Borough Council
- The City and County of Swansea
- Environment Agency Wales
- Countryside Council for Wales
- Welsh Water
- Glamorgan Gwent Archaeological Trust
- Welsh Assembly Government

An overview of the environmental assessments requested by stakeholders is listed in *Appendix 7.3*. Importantly, were requests for specific assessments relating to the adjacent Crymlyn Burrows SSSI and the extent historic petrochemical contamination of the site.

3.3 Public Consultation

There was no formal consultation for the public as part of the EIA. Although, the ES states that there were plans for public consultations during later stages of the planning and development.

3.4 Guidance used to prepare the ES

To support each directive, regulation or regional policy, corresponding guidance is published that helps practitioners implement the requirements set out by the legislation. The UK (and Welsh) government(s) have produced several guidelines over the years which aim to help participants navigate the complex landscape of EIA compliance. Substantial volumes of guidance exist to support the assessment of a developments environmental impact, some referenced within the report are listed in *Appendix 7.2*.

3.5 Assessment Methodology and Significance Criteria

Many of the technical chapters of the environmental statement contain assessments on the potential impacts, residual Impacts, cumulative Impacts and mitigation measures of the development. Chapter 2 of the ES provides an explanation of the definitions and terms used as part of the significance criteria assessment methodology. These are provided in the tables below;

Impacts are defined by the type of effect that would result.

Table 2 - Types of impacts

Impact	Definition
Negligible	Imperceptible impacts to an environmental resource or receptor
Adverse	Detrimental or negative impacts to an environmental resource or receptor
Beneficial	Advantageous or positive impact to an environmental resource or receptor

The severity of an impact is described;

Table 3 - Definitions for Impact Severities

Severity	Definition
Minor	Slight, very short or highly localised impact of no significance
Moderate	Limited impact (by extent, duration or magnitude) which may be considered significant
Major	Considerable impact (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards

Distinction is made between any impacts caused by construction activities, or those that may persist during the operational lifetime of the development.

Table 4 - Defining impact durations

Duration	Definition
short to medium-term	impacts are considered to be those associated with the construction phase
long-term	impacts are those associated with the completed Development.

The geographic extent of the impact.

Table 5 - Impact Area Definitions

Impact Area	Definition
Local	Impacts are those affecting neighbouring receptors
District	Impacts are considered to be upon receptors in NPT CBC or CCS
Regional	Impacts affecting South Wales
National	levels affecting Wales as a whole

There are minor variations in definitions applied to some of the specific assessments within the ES, though an explanation of the respective significance criteria used is provided in each chapter.

3.6 Contaminated Land

3.6.1 Ground and Hydrological Survey

The primary site investigation data used in the Environmental Statement was obtained before the Bay Campus had been proposed for the former Transit Site. The investigations of the ground conditions and hydrogeology were undertaken in a more general context to assess the general remediation requirements to the site and risks to any off-site receptors. Trial pits and sonic drilling were used to obtain samples down 2m below the surface. At 0.5m intervals soil was analysed using a photo-ionisation detector. Nearly 50 boreholes were drilled at depths between 6-12m. (URS 2010c)

The key legislation and guidance used to determine the impact significance of any contamination within the site, as discussed in chapter 14 of the ES, is listed in *Appendix 7.1*. The overall assessment draws from several investigations of the site that took place between 2005 – 2008 and details of the remediation and development strategies that have been used and/or proposed. The full phase 2 investigation is provided in Vol III of the Environmental Statement.

3.6.2 Overall Site Contamination

As expected, there was substantial contamination of the soil and groundwater of the former hydrocarbon storage facility. Five separate investigations of the ground and groundwater were carried on the site between the years 1998 and 2006 with significant hydrocarbon contamination detected throughout the site. Many of the sample locations detected quantities of hydrocarbons that far exceeded acceptable levels. Particularly of note, TPH's (Total Petroleum Hydrocarbons) and BTEX products (Benzene, Ethylbenzene, Toluene & Xylene). Benzene is of specific concern due to large historic spillages in parts of the site. The level of heavy metals was found to be below detectable levels, except for trace quantities of cadmium and arsenic (URS 2010a, p.137).

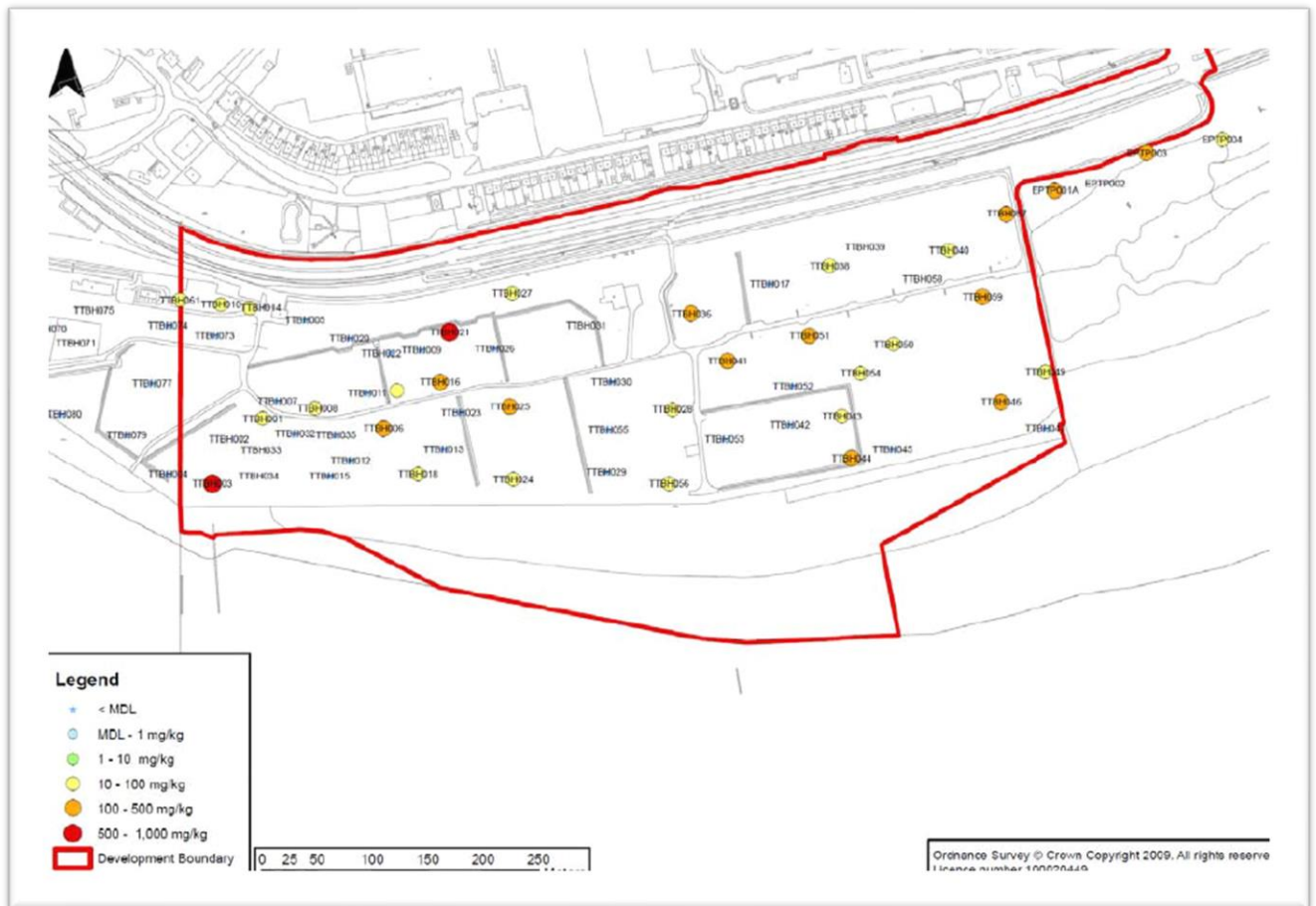


Figure 4 - Total Petroleum Hydrocarbons in Soil

3.6.3 Tank 856 – Source of Benzene Contamination

Specific investigations around the location of *Tank 856* (which had previously been used store *benzene*) had also been carried out in the early and mid-1990's.

Tank 856 which is located near the southern boundary of the site close to the beach was previously used for benzene storage. Benzene contamination of the area surrounding this tank was first discovered in 1988 when benzene was discovered to be seeping onto the beach. An initial risk assessment at the time evaluated there was unlikely to be a significant risk to human health based on the assumption that exposure to the contamination would be minimal and infrequent (URS 2010c). Investigations in 2001 identified noticeable petroleum odours present along the foreshore, close to an outfall pipe that discharged groundwater onto the sand flats, benzene concentrations along the beach were found to significantly exceed marine ecological criteria (URS 2010c, p. 9). The investigations determined a plume of approximately 0.8 hectares downstream of the former Tank 856 was the source and would require remediation. Based on the benzene concentrations detected within this plume, it was estimated that between 2.5 – 5 tonnes of benzene were present in the soil (URS 2010c).

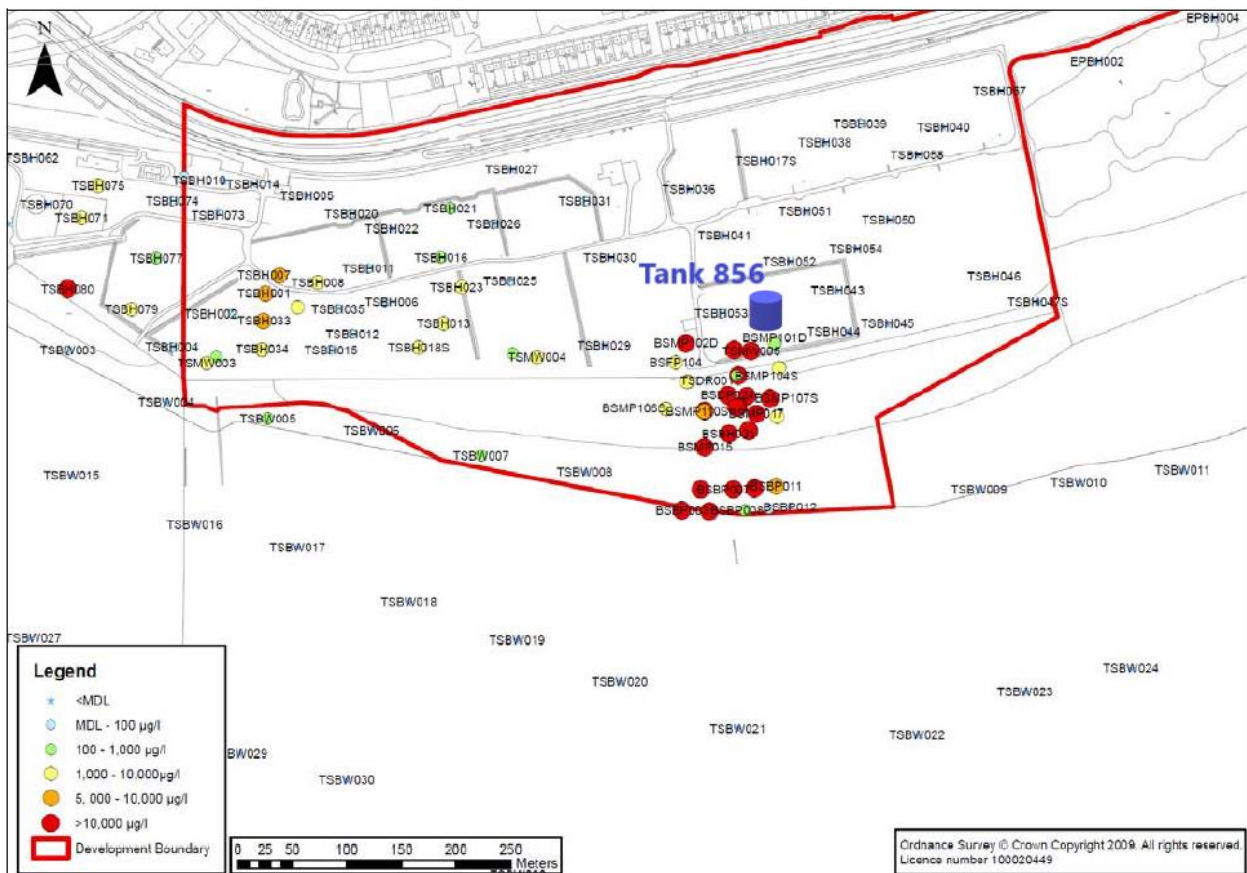


Figure 5 - Benzene in Groundwater [high concentrations downstream of former tank 856]

3.6.4 Remediation

Remediation of the site was carried out by Hydrock and consisted of physical, chemical & biological remediation techniques. Contaminated soil was excavated and bio-remediated, the treated spoil was subsequently used as part of the earthworks programme to level the site to a uniform height which reduced the volume of soil disposal (URS 2010a). Groundwater was abstracted, skimmed for free product, then further treated on site by a purpose-built treatment plant (Hydrock 2012).

3.6.5 Remediation of Area Surrounding Tank 856

The objective for remediation was to remove and treat the source contaminants within the plume area to a level where natural processes could further attenuate the remaining contamination to acceptable levels. Remediation consisted of a combination of *air-sparging* and *vapour collection* deployed in situ for a period of 13 months. Remediation works concluded in June 2005; with quarterly monitoring continuing until March 2007. (URS 2010c)

3.6.6 Residual Impacts

The report predicts that once remediation works have been completed, the potential risks of groundwater contamination would be reduced to **negligible**, and that there would be a **moderate beneficial** effect on the ground conditions. The only impact that was determined to be potentially more severe than *negligible*, was the treatment phase for the identified contamination which was projected to carry a **moderate** risk to the local and district areas. The treatment activity was projected to ultimately have a **beneficial** impact on ground conditions (URS 2010a, p.149-50).

3.6.7 Human Health Assessment

The Stage 3 Human Health Assessment summarises the residual risks posed to human health as of 2008. Although, there was a significant reduction in the measured ground and water contamination following remediation works - 2 samples still exceeded acceptable limits of Benzene for residential land use (*TSBH001*, *TSMW005*). There were other residential use exceedances for levels of trimethylbenzene in certain areas but as those plots had been earmarked for R&D buildings, the residual concentration was not deemed an issue (URS 2010a, p. 142).

3.6.8 Observations

The report notes that there was a considerable reduction in the number of boreholes sampled during the 2008 survey, with many of the locations of historically significant exceedances for groundwater benzene not being re-sampled. The report infers that there has been a reduction in contaminant concentrations based on the general decreasing trend of contaminant levels measured in the wells across the site. It was advised that further remedial work or preventative engineering measures should be utilised prior to the development of any residential blocks within the affected areas. In addition, a small area of shallow groundwater on the beach was found to still be contaminated with benzene. The risk of any exposure was deemed to be low but further monitoring was recommended (URS 2010a).

3.7 Crymlyn Burrows SSSI

The Crymlyn Burrows intertidal zone and dune systems were designated an SSSI in 1987. It is the last remaining stretch of the Swansea Bay coastline that has escaped any significant industrial development within the last 150 years (CCW 2008).

3.7.1 Crymlyn Burrows Habitat

The area is regarded as being an excellent example of transitional habitat between sand dunes and saltmarshes. With a range of habitats that includes alder carr woodland, brackish reed marsh, upper, middle and pioneer saltmarshes, the site is home to several rare and vulnerable species of plant and invertebrate (Pye, Blott 2014):

- Field Wormwood – A flowering plant that grows within the dune system of Crymlyn Burrows. This plant has a nationally rare status (Pye, Blott 2014).
- Sea Stock (*Matthiola sinuate*) – listed as vulnerable, it's remaining populations are confined to specific sections of the South Wales coastline (Hipkin, Woodhouse et al. 2015).
- Fen Orchid (*Liparis loeselii*) – This flower is now incredibly rare in the UK with it only being found in a handful of locations in South Wales, it is now feared that this plant has been lost in Crymlyn Burrows (Pye, Blott 2014).
- Strandline Beetle (*Eurynebria complanate*) – Overzealous beach cleaning efforts have inadvertently destroyed the Strandline Beetles shoreline habitat and have contributed to their general decline (UK Beetles b) (CCW 2008). It was last officially recorded in Crymlyn burrows in 1999 and by 2017 it appears to no longer have a presence along the beach (Stewart 2017).
- Dune Tiger Beetle (*Cicindela maritima*) – This beetle is also listed within the UK Biodiversity Action Plan as a priority species (UK Beetles a).

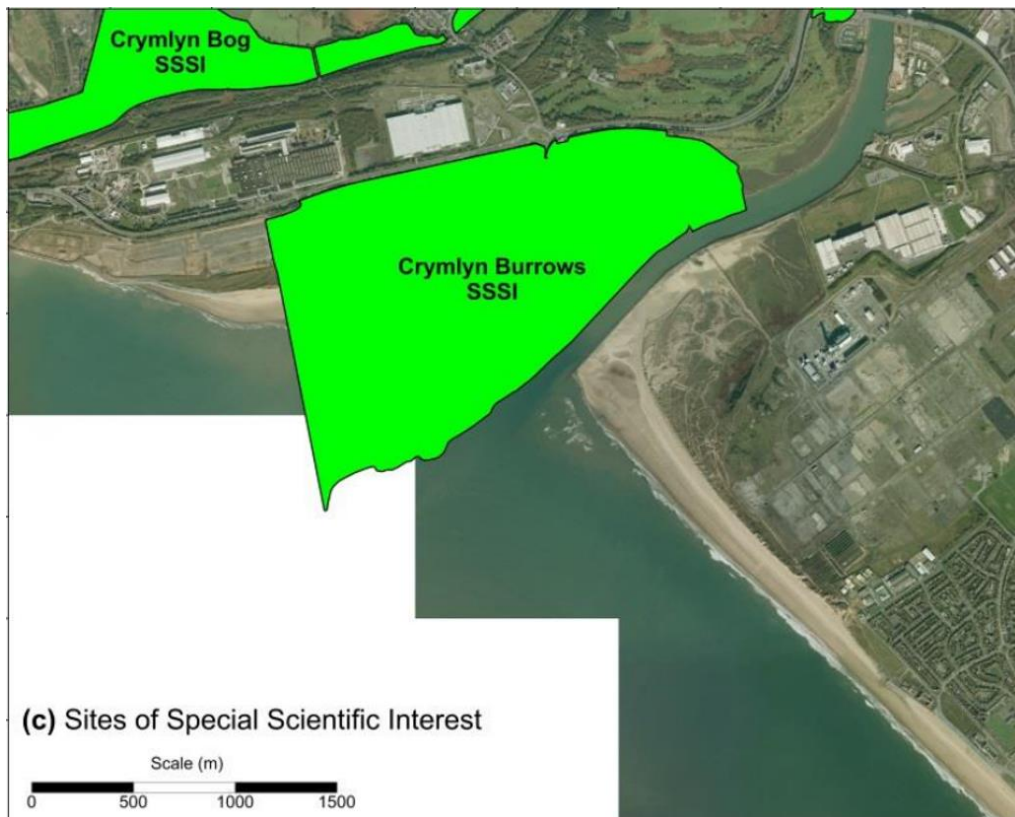


Figure 6 - Crymlyn Burrows SSSI Boundaries

3.7.2 Environmental Assessment

During informal scoping consultations, planning authorities required that an extended Phase 1 Habitat Survey be carried out on the site of the development and the adjacent Crymlyn Burrows SSSI (overview table of the scoping opinion is provided in *Appendix 7.3*). The survey was conducted between April and June of 2009, during the optimal survey period recommended by the JNCC Phase 1 Survey Guidelines (JNCC 2007). An overall summary of the potential impacts identified in the ecology assessment are outlined in *Appendix 7.4*.

3.7.3 Residual Impacts

The report concludes that there is the potential for **significant adverse effects** on the SSSI that result from the development. In particular, the adverse impacts on the habitat and species that result from partial loss of the dune habitat, specifically embryo dunes, and the expected large increase in recreational use of the area by the impending student population. Potential adverse impacts were also identified for bats, breeding and wintering birds, and invertebrates within the local and district area.

NPT CBC and the CCW made commitments to produce a comprehensive management plan to ensure the protection and potential enhancement of the conservation status of the Crymlyn Burrows SSSI. Additionally, St Modwen committed to funding a warden scheme to monitor and manage the SSSI (URS 2010a).

3.7.4 Required Mitigation Actions

Planning approval was granted subject to the condition that mitigation and monitoring programmes will be implemented by the developer. The Neath Port Talbot Planning Authority stipulated that;

- There should be the provision for long-term retention of security and wardening services for the Crymlyn Burrows SSSI, to supervise and restrict when appropriate, public access to the SSSI.
- A management committee is to be established to address any issues of that arise from the proximity of the Bay Campus Residences to Crymlyn Burrows SSSI. The committee should be made from representatives from the university, St. Modwen's Developments, the CCW (now NRW) and NPT planning authority.
- In mitigation of the approx. 3.3 ha of dune system that will be lost, the creation of a "Ecological Compensation Area" that manages 7 ha of habitat 1.8 km southeast of the development. Proactive compensation measures will consist of conducting detailed BAP surveys of the area identifying vulnerable species, raising local awareness of the site's sensitivity to disturbance and discouraging recreational use of the area. (NPT CBC 2012, p. 42)

4.0 Discussion

4.1 Local Authority Responses to the Bay Campus EIA

Several concerns were raised regarding the proposals and the associated EIA, The City and County of Swansea council felt there had been an inadequate assessment of alternative sites that were *“closer to the centre of Swansea City which could result in greater overall regeneration benefits to the City and City region”*. They state that the assessment fails to evaluate the socio-economic impacts of the diversion of investment and that *“the application fails to adequately consider the strategic vision, goals, objectives and strategic policies contained within the Swansea Unitary Development Plan”*. Similar reservations expressed by the NPT Biodiversity Forum also requested further elaboration on how the development would benefit the Neath Port Talbot region, paradoxically concluding that *“the majority of jobs and student money will be spent in Swansea and not Neath Port Talbot”*.

The NPT Biodiversity forum had opposed the development entirely and hoped that *“the land will be left to develop naturally so that this area will once again become a dynamic sand dune habitat”*. They criticized the strength of the overall environmental assessment arguing that *“the content that has been included undervalues completely the potential impact that granting permission will have”*, and that *“actual content and fine detail”* of mitigation measures *“appear to have been omitted deliberately”*. Specifically criticising the planned *Ecological Compensation Area*, they dispute the claim in the EIA that *“no net loss”* would be met under this arrangement, questioning the *“vague”* mitigation proposals to protect existing dunes from future erosion. Further rebuking the developer, the forum accused them of attempting to persuade the LPA to disregard the importance of any environmental damage and prioritise the *“unclear”* social benefits. (NPT CBC 2012, p. 8-9).

5.0 Conclusion of Bay Campus EIA in Practice

Kennedy (1988) describes the process of EIA as being both a *science* and an *art*. He states that the EIA attempts to combine both science and conservationism with political wills (Kennedy 1988). Beattie (1995) on the other hand is blunt, declaring that the EIA process is “not a science” and is “always political”. Political objectives will often take precedence over environmental concerns which can render the process of EIA hollow and insincere. Incompatible ambitions of developers, government, communities and conservationists lead to compromises being made, often to the detriment of the environment.

This development is no exception, with some of the stakeholder responses to the Bay Campus Environmental Statement certainly expressing dissatisfaction. Swansea and Neath Port Talbot Councils raised concerns regarding the economic benefits to their respective municipalities with NPT specifically concerned how the development will “raise their profile” (NPT CBC 2012, p. 8-9). Both councils were eager to reap the socio-economic benefits this development will provide.

Beattie (1995) iterates that many of the steps, projections and conclusions drawn from the process is fundamentally based on assumptions made by the practitioner. As EIA’s are usually carried out under budget, resource and time constraints - there will often be gaps in data and conclusions will be drawn from the practitioner’s simplified assumptions.

The NPT Biodiversity forum were certainly concerned this may be the case in their response to the proposal. Although the EIA recognised that there would be adverse impacts on the adjacent SSSI as well as partial loss of the dune system and proposed mitigation measures, these were criticised as lacking detail and undervaluing the importance of the developments environmental impact.

The significant reduction in the number of boreholes available for sampling in the later stages of the ground and hydrogeological surveys meant the conclusion was inferred that overall levels of contaminants across the whole site had been sufficiently reduced. The arrangements for future monitoring studies were not made clear in the report.

Although the Bay Campus Environmental Statement attempted to provide a comprehensive evaluation of the range of potential environmental impacts identified by scoping consultation, it was found to be unsatisfactory on some fronts and ignorant of the depth of impact that would result from the development. There was notably a lack of adequate public consultation detailed within the Environmental Statement, alterations to the EIA regulations since 2010 would now mandate a minimum public consultation period of 30 days.

The EIA in this case may have fallen short in some respects but overall, it still provided a broad overview of the various impacts resulting from the development.

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7.0 Appendices

7.1 Table of legislation and guidance used throughout EIA Report (URS, 2010a)

<u>Legislation</u>	<u>Supporting Guidance Used</u>	<u>Chapter Referenced</u>
Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (amended 2006, 2007)	Department of Environment, Transport and the Regions (DETR) Circular 02/99 Environmental Impact Assessment Preparation of Environmental Statements for Planning Projects that require Environmental Assessment: Good Practice Guide, Department of the Environment (DoE) 1995 Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Impact Assessment, 2004 and the 2006 update on legal matters contained within the Guidelines Office of the Deputy Prime Minister (ODPM) Environmental Impact Assessment – A Guide to Procedures, 2000	<u>Chapter 2: Assessment Methodology and Significance criteria</u>
<i>Part IIA of the Environmental Protection Act (1990) (Part IIA)</i>	<i>Development on Land Affected by Contamination – DETR</i> <i>Contaminated Land – DEFRA, Circular 01/2006</i> <i>Remedial Targets Methodology - EA</i> <i>Human Health Toxicological Assessment of Contaminants in Soil, Science Report SC050021/SR2</i> <i>Contaminated Land Report (CLR) 11, Model Procedures for the Management of Contaminated Land</i>	<u>Chapter 14: Ground Conditions and Hydrogeology</u>
Town and Country Planning EIA (Wales) Regulations 2008		<u>Chapter 2: Assessment Methodology and Significance criteria</u>
The Environmental Protection Act (EPA) 1990		<u>Chapter 6: Waste Management</u>
The Environmental Permitting (England and Wales) Regulations 2007		<u>Chapter 6: Waste Management</u>
The Environmental Protection (Duty of Care) Regulations 1991		<u>Chapter 6: Waste Management</u>
The Environment Act (Waste & Producer Responsibility) 1995		<u>Chapter 6: Waste Management</u>
The Producer Responsibility Obligations (Packaging Waste) Regulations 2007		<u>Chapter 6: Waste Management</u>

The Waste Electrical & Electronic Equipment (WEEE) Regulations 2006		<u>Chapter 6: Waste Management</u>
The Hazardous Waste (England and Wales) Regulations 2005		<u>Chapter 6: Waste Management</u>
The Site Waste Management Plan (SWMP) Regulations 2008		<u>Chapter 6: Waste Management</u>
Clean Neighbourhoods Environment Act 2005		<u>Chapter 6: Waste Management</u>
The Wildlife and Countryside Act (WCA), 1981 (as amended)		<u>Chapter 11: Ecology</u>
The Countryside and Rights of Way (CROW) Act, 2000		<u>Chapter 11: Ecology</u>
The Natural Environment and Rural Communities (NERC) Act, 2006;		<u>Chapter 11: Ecology</u>
The Conservation (Natural Habitats &c.) Regulations, 1994		<u>Chapter 11: Ecology</u>
The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007		<u>Chapter 11: Ecology</u>
Protection of Badgers Act 1992		<u>Chapter 11: Ecology</u>

7.2 Policy Guidance referred to in the Environmental Statement (URS, 2010a, p. 48-51)

<u>Policy Guidance</u>	<u>Published by</u>
TAN 4: Retailing and Town Centres	Welsh Assembly Government
TAN 5: Nature Conservation and Planning	Welsh Assembly Government
TAN 11: Noise	Welsh Assembly Government
TAN 12: Design	Welsh Assembly Government
TAN 14: Coastal Planning	Welsh Assembly Government
TAN 15: Development and Flood Risk	Welsh Assembly Government
TAN 18: Transport	Welsh Assembly Government
TAN 21: Waste	Welsh Assembly Government
Draft TAN 22: Planning for Sustainable Buildings	Welsh Assembly Government
Biodiversity SPG	Neath Port Talbot Council
Landscape SPG	Neath Port Talbot Council
Open Space SPG	Neath Port Talbot Council
Developer Contributions SPG	Neath Port Talbot Council
Welsh Language SPG	Neath Port Talbot Council
Regional Planning Guidance 2000	South West Wales Strategic Planning Group

7.3 Areas to be addressed in the EIA identified in the informal scoping opinion in Vol II of the Bay Campus Environmental Statement (URS, 2010, p.4-5)

<u>Area of Concern</u>	<u>Requested by</u>	<u>Description of Request</u>
Transport	<i>Neath Port Talbot County Borough Council</i>	An assessment on the vehicle and transport impacts of the proposed development on the local area as well as the parking strategy. The provisions must be congruent with the LPAs overall strategy for Fabian Way.
Environment and the SSSI	<i>Neath Port Talbot County Borough Council</i>	Requirement for an extended Phase 1 habitat study of the site and nearby SSSI, to evaluate the impacts on the local BAP habitats. Studies should include botanical and invertebrate assessments and include recommendations on mitigation measures.
Ecology	<i>Countryside Council for Wales</i>	In consultation with a Local Authority Ecologist, undertake a full phase 1 habitat study of the site for notable species such as great-crested newts, bats, badgers and grounds nesting birds.
Hydrogeology	<i>Countryside Council for Wales</i>	Full assessment of underground flow and direction.
Coastal Geomorphology	<i>Countryside Council for Wales</i>	Examination of the direct and in-direct impacts on coastal processes.
Air Quality	<i>Countryside Council for Wales & Local Planning Authority</i>	The impact on air quality of construction and transport on the local residential population and sensitive areas of Crymlyn Bog and Crymlyn Burrows.
Landscape	<i>Countryside Council for Wales</i>	An assessment of the landscape in accordance with the CCW guideline document on best practice, the CCW Landmap.
Contaminated Land	<i>Environment Agency</i>	Requirements are for a Preliminary Risk Assessment, Site Investigation, Quantitative Risk Assessment, Validation results and interpretation.
Flood Risk	<i>Environment Agency</i>	Details on flood risks, emergency access routes, sea defences and the developments impacts on coastal processes.
Drainage	<i>Environment Agency</i>	Details of Foul and surface water drainage considering SUD methods.
Waste Management	<i>Environment Agency</i>	Waste and pollution control strategies.
Noise Assessment	<i>Local Planning Authority</i>	Assessed impacts of noise on local residential receptors.

Archaeology	<i>Local Planning Authority & Glamorgan Gwent Archaeological Trust</i>	Identification of any features on the site of archaeological significance.
Sustainability	<i>Local Planning Authority</i>	Details of the strategy for sustainable energy, heating, waste etc.
Sewerage and Water Supply	<i>Local Planning Authority & Welsh Water</i>	Details of planned supplies and sewers.
Socio-economic impacts	<i>Local Planning Authority</i>	Direct and in-direct effects of the development on the local and regional economy.
Retail impact Assessment	<i>Local Planning Authority</i>	Anticipated impact of the development on both Swansea and Neath City Centres.
Alternative Sites and a 'no development' scenario	<i>LPA</i>	Options for alternative sites with explanation of the chosen development site.

7.4 Overview of residual impacts from Chapter 11 (URS, 2010a, p. 112)

<u>Identified Receptor</u>	<u>Proposed Activity</u>	<u>Nature of Impact</u>	<u>Significance of Impact prior to mitigation</u>
Crymlyn Burrows SSSI	Construction	Incidental minor physical disturbance along boundaries.	Not significant
	Increased recreational activity	Potential for significant disturbance to integrity of habitats, particularly the dune habitat from recreational pressure	Significant at Regional level
Fabian Way Conservation Verge	Creation of Access and work to carriageways	Loss of sections of the road verge to creation of new access and modifications to carriageway	Significant at Local level
Sand Dunes	Construction	Loss of approximately 3,3ha of habitat to construction	Significant at District level
	Increased recreational activity	Disturbance to integrity of remaining 1.3ha	Significant at Local level
Broadleaved/mixed Woodland	Construction	Loss of small areas to construction of new access and landscaping	Significant at Site level
Bats	Construction of access	Loss of small areas of woodland used for foraging/minor disruption to commuting/foraging corridor	Significant at Local level
	Increased lighting during operational phase	Displacement from increase in lighting	Significant at Local level
Breeding Birds including ringed plover, linnet, skylark, song thrush, reed bunting	Construction	Loss of breeding habitat	Significant at Site level
	Increased disturbance on species in immediate SSSI lighting/activity during construction and operational phases	Displacement	Significant at Local level
Wintering Birds	Construction	Displacement from feeding areas from disturbance	Significant at Local level
	Increased lighting/activity during construction and operational phases	Displacement from feeding areas from disturbance	Significant at Local level
Invertebrates	Construction	Loss of habitat	Significant at District level
	Operational Phase	Change in habitat mosaic in SSSI	No significant impact
Reptiles	Construction	Loss of habitat	Significant at District level
	Operational Phase	Change in habitat mosaic in SSSI	Not significant