
Phase 2 – Land Raising Reserved Matters Application

Supplementary Environmental Statement

Swansea Bay Campus



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1. Introduction

The Background

- 1.1. This Supplementary Environmental Statement (SES) supports the reserved matters approval application for the raising of land within Phase 2 of the Bay Science and Innovation Campus. It sets out the environmental topics considered in the original ES and demonstrates how the findings of that report remain robust.
- 1.2. The Bay Science and Innovation Campus is an extremely significant project not only for Swansea University, but for the whole of the South Wales economy. The development is unique in Wales and the first of its kind to bring together academic excellence and commercial research and development in a single purpose built environment.
- 1.3. At a time of significant economic challenges in the region, the Campus demonstrates the key role that the University can have in supporting knowledge-based economic growth. The new purpose-built environment will further enhance the University's status as a centre of excellence and build upon the strong reputation in commercial research and development.
- 1.4. The development will also play a major role in achieving the economic objectives of the Welsh Government within the Wales Spatial Plan.

The Project

- 1.5. A key part of the new Campus is the integration of Academic and Research facilities with modern, high quality, purpose built student accommodation. While works to complete the Campus have slowed, owing, in part, to the impact of Covid-19, the applicant intends to raise the levels of the land to safeguard it from flooding; thus, the proposals will future proof the remaining part of Phase 2 of Swansea Bay Campus for development. Completing land raising works is essential for the future redevelopment of the Swansea University Bay Campus and the University's vision for the site. The opportunity to do so exists now, with the soil being ready for importation to Swansea Bay Campus from the former Hendrefoilan Student Village site in Swansea; the latter has planning permission for residential development and is also under the applicant's control.
- 1.6. The approved site levels plan (ref: PL-13) that pertain to the extant outline planning permission permits the levels of the land to be raised to 8 metres (m) above ordinance datum (AOD). However, rather than raise the levels of the land to the maximum parameter, the proposals intend to reprofile the site to a level necessary to protect the site from flood risk: this is 7.83m AOD.
- 1.7. The proposed Reserved Matters application is consistent with the parameters granted in the 2012 outline planning permission, which was superseded by an updated Section 73 outline planning application granted in 2019.

2. Environmental Topics

2.1 This section of the Supplementary Environmental Statement (SES) systematically reviews each of the following technical chapters within the original Environmental Statement (ES):

- Landscape and Visual
- Traffic, Transportation and Access
- Ecology
- Coastal Geomorphology
- Water Resources and Flood Risk
- Ground Conditions and Hydrogeology
- Noise and Vibration
- Air Quality
- Cultural Heritage and Archaeology

2.2 For each of these chapters it reviews the original assessments, the conclusions and where these conclusions remain valid and robust in light of changes to the environmental conditions, policy and legislation. The conclusion outlines how the findings of the ES remain robust and confirms that this reserved matters can be delivered in compliance with its findings.

Landscape and Visual

2.3 The landscape and visual assessment contained within the original ES considered the potential effects of the outline application proposals on landscape and visual amenity from a number of key viewpoints in and around the Swansea Bay area.

2.4 The assessment methodology adopted was based on the general approach advocated in the Guidelines for Landscape and Visual Impact Assessment (second edition) published by the Landscape Institute and the Institute of Environmental Management and Assessment. The staged process is explained in section 9.3 of the original ES. Whilst the Landscape Institute Guidelines have since been updated to the fourth edition, the approach contained within the original ES remains methodologically sound.

2.5 The assessment, which was informed by the production of verified photomontages and wireframe analysis, came to the conclusion that the long-term, permanent landscape and visual effect of the development proposed associated with the outline planning application would be 'moderate/minor'. For the reasons explained in the methodology, no judgement is placed upon whether these effects are beneficial or adverse.

2.6 The landscape and visual analysis undertaken to inform the environmental impact assessment was based upon the maximum height permitted within the parameters contained within the outline planning application. This ensures that the assessment reflected the 'worst case scenario'. In practice, a number of

the buildings have been delivered at a height below the maximum permitted. Logically therefore the magnitude of the impact is lower than was predicted.

- 2.7 The reserved matters application, to which this SES relates, proposes no changes to the parameters approved through the outline planning permission. Furthermore, whilst there have been recent developments in the vicinity, there are no cumulative schemes granted planning permission which have a significant bearing upon the assessment conclusions. Indeed, the proposed land raising is within the maximum permitted parameters and the application does not involve buildings above ground level.
- 2.8 For these reasons, it is considered that the previous assessment and its conclusions remain a robust basis upon which to determine the reserved matters approval applications made pursuant to the outline planning permission for the Bay Campus site.

Traffic, Transportation and Access

- 2.9 Chapter 10 of the original ES contains an assessment of the traffic, transportation and access impacts arising from the proposed development as a whole. The baseline assessment and transport modelling which informed the analysis and conclusions is contained in Chapter 10, Volume II, of the original ES.
- 2.10 The assessment of the transportation impacts was based on the maximum floorspace proposed within the parameters attached to the outline planning permission. From this, an estimate was made of the potential vehicle movements and the effect of the additional movements and associated highways access proposals would have on the baseline conditions.
- 2.11 Based upon the output of the transport assessment, a number of mitigation measures were devised in order to reduce the significance of the predicted impacts. These measures include the production of a Construction Method Statement to address the construction related impacts and the following measures, designed to reduce the operational impacts:
- Management of student timetabling arrangements (both drop off and pick up at the end of term and during term times) to minimise the need to travel;
 - Design measures which support and encourage sustainable travel, including a new signalised pedestrian and cycle crossing on Fabian Way;
 - Implementation of a controlled parking zone on Elba Crescent and Baldwin's Crescent;
 - A reduction in the speed limit from National Speed Limit to 40mph on the section of Fabian Way from Jersey Marine roundabout and Port Tennant;
 - Provision of a shuttle bus service; and
 - A comprehensive travel plan.
- 2.12 Taking into account the mitigation measures specified in section 10.5.4 of the original ES concludes that the impact upon driver delay will be of 'moderate adverse' significance, the impact upon public transport user amenity will be of 'minor/moderate adverse' significance and the impact upon pedestrian/cyclists amenity will be of 'minor adverse' significance.

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- 2.13 Following submission of the original ES the supplementary information submitted pursuant to Regulation 19 on 15 November 2010 contained an updated outline travel plan which was revised following dialogue with the highway authority prior to the determination of the outline planning application. The Regulation 19 submission confirmed that the original conclusion that the impact on public transport would be of 'minor adverse' significance remained valid.
- 2.14 All of the mitigation measures proposed in the original ES have been incorporated into either the planning conditions or the Section 106 agreement.
- 2.15 Since outline planning permission was granted, there has been significant transport-related development on the application site. Amongst the completed works are:
- The construction of primary and secondary access points to Fabian Way;
 - Provision of the signalised pedestrian and cycle crossing;
 - Improvements to the cycle path on Fabian Way;
 - Reduction to the Fabian Way speed limit; and
 - Provision of a frequent shuttle bus service
- 2.16 In addition to the physical measures, a comprehensive travel plan has been approved and a travel plan coordinator appointed. Ongoing discussions between the University, travel plan coordinator and the Local Authority has resulted in further evolutions of the travel plan arrangements to reflect the shared objectives.
- 2.17 The only change of any significance which will have a potential bearing upon the propensity of students and staff to travel between the two Campuses (Singleton Campus and Bay Campus) is the introduction of sports facilities, including a gym and multi-purpose sports hall at the Bay Campus. The size and range of facilities have been designed specifically with the intention of meeting the needs of residents and staff at the Campus and are intended solely for the use of those who would otherwise be resident or employed there. It is not possible to quantify how many of the students and staff would have travelled off site if these facilities were not available or how they would have travelled. However, it is reasonable to assume that the inclusion of these sports facilities at the Campus would reduce the number of students who would otherwise have travelled off Campus for this purpose.
- 2.18 Notwithstanding the above, the quantum of development delivered on each of the blocks at the Campus to date falls below the maximum permitted through the outline planning permission, and therefore the conclusions of the original ES represent a worst case scenario and therefore remain robust.
- 2.19 The number of vehicles parking at the Campus provides a good indication of the number of movements to and from the Campus. This data has been collected by the University and submitted to the Local Planning Authority in the previously approved Section 73 application which extended the timeline for implementation of the outline planning permission.
- 2.20 The data revealed that the average number of vehicles parked at the Campus every day is substantially below the maximum number of movements assumed through the original ES. Whilst the Campus is not yet complete, based upon the available evidence it is reasonable to conclude that the number of vehicle movements, once complete, would also fall below the maximum assumed in the original ES. On that basis

the conclusions of the original ES are considered to remain robust and appropriate for use in the determination of this reserved matters approval application.

- 2.21 The scope of the proposed works sought in this application do not amount to any new floorspace and so the assumptions made in regard to traffic generation in the original ES will remain unaffected. The application is made with the benefit of a Construction Method Statement which addresses planning conditions attached to the outline planning permission and the proposed land raising would not preclude the ability to deliver of a multi-storey car park in the fullness of time. For these reasons, the proposals accord with the original conclusions of the ES in respect of traffic, transport and access, as referred to in the previous paragraph.

Ecology

- 2.22 The original outline planning permission proposals for the Campus and the original ES were based upon a thorough understanding of the ecological interests both within and adjacent to the application site. There are a number of statutory ecological designations within 2km of the site as set out in Section 11.4 of the original ES, and the impact upon each of these was assessed.
- 2.23 Technical Appendices 11 in Volume 2 of the original ES contains the findings of the original survey work. The scope of the survey work was based upon a detailed understanding of the application site and agreed with the Environment Agency Wales and the Countryside Council for Wales (now both part of Natural Resource Wales) and Neath Port Talbot CBC's Biodiversity Officer in advance. A full suite of surveys were undertaken in accordance with the agreed scope.
- 2.24 The survey information was important to the iterative design process which culminated in the outline application proposals. It was then also subsequently used to assess the impact of the development on ecological and biodiversity interests to determine the significance of the construction and operational phases.
- 2.25 Table 11-12 of the original ES summarises the potential impact of the development prior to the implementation of the mitigation measures. Section 11.5.2 then proposes and assesses the potential mitigation measures relating to:
- Crymlyn Burrows SSSI;
 - Fabian way conservation verge;
 - Sand dunes;
 - Broadleaved and mixed woodland;
 - Foraging/commuting bats;
 - Breeding birds;
 - Wintering birds;
 - Invertebrates; and
 - Reptiles.
- 2.26 Following identification of the mitigation measures, the residential impact of the development, having regard to the benefits derived from the mitigation, were assessed and the conclusions summarised in Table

11-13. The conclusions reached were that there would be a number of impacts of 'negligible' significance, some of 'minor adverse' and one impact of 'moderate adverse' significance.

- 2.27 Prior to determination of the outline planning application further environmental information was provided to supplement the original ES within the Regulation 19 submission. Two component parts of the environmental information related to the provision of a 'warden services' for the SSSI and details of an 'ecological compensation area', to compensate for the loss of dune habitat within the development area.
- 2.28 The mitigation measures proposed within the original ES and the Regulation 19 submission were captured in, and required through, a combination of planning conditions and the Section 106 Agreement accompanying the outline planning permission.
- 2.29 Since outline planning permission was granted, there have been substantial physical changes to the application site. Development has taken place along the length of the eastern boundary adjacent to the SSSI, and the remnant dune habitat within the site has been developed. Mitigation measures, as specified in the planning conditions and Section 106 agreement, have also been implemented, including the production of the Ecological Management and Monitoring Plan submitted pursuant to Condition 9 of the outline planning permission. There are also specific provisions in the Section 106 agreement relating to the adjacent SSSI, the most sensitive ecological receptor in the locality.
- 2.30 Only part of the Campus remains undeveloped. In order to provide an up to date understanding of the site an Extended Phase 1 survey was completed in December 2017 and it informed the approval of an S73 permission which extended the time limit to implement the outline planning permission in 2019.
- 2.31 The findings of the December 2017 Phase 1 Survey reflect the substantial changes that have taken place within the application area since the original survey work was completed. The majority of the Campus has now either been developed, utilised as a construction compound or forms part of a temporary car park. There is therefore little of the original habitat remaining and, as the December 2017 survey confirms, what remains is of low biodiversity interest.
- 2.32 Notwithstanding, from the conclusions derived from the Extended Phase 1 Habitat Survey, a number of follow up surveys and actions were recommended (and discussed / agreed with the Local Planning Authority), these included:
- Updated reptile surveys of the remaining suitable habitat, as well as updated surveys within the SSSI and the remanent dune triangle located between the development and the SSSI. The surveys only found relatively low numbers of common lizards within the development area;
 - An NVC survey of the remaining vegetated areas along the western section of the original rock revetment.
 - Monitoring of the artificial dune planting, which is ongoing;
 - Monitoring of ground nesting birds across the site;
 - Monitoring of the bird boxes that have been installed to date and liaison with the University's Biodiversity Officer (Ben Sampson) to ascertain whether there has been any success with these types of boxes; and

- A site wide check for invasive species such as Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*.

2.33 The mitigation measures contained within the planning conditions and Section 106 agreement that are pertinent to the biodiversity interests identified through the December 2017 survey remain relevant. The conclusions of the original ES remain robust, as do the identified mitigation measures which form part of the permission. The site has been actively managed since the grant of the s73 outline planning permission and an updated Ecological Constraints report submitted with this application confirms that the conditions have remain unchanged in the intervening period from 2017 to-date, with the quality of ecological habitat remaining constant. The original findings of the ES therefore remain robust in respect of assessing future applications made pursuant to the extant outline planning permission.

Coastal Geomorphology

2.34 Coastal Geomorphology was the subject of some considerable debate and discussion during the determination of the outline planning permission. Analysis was undertaken of the beach profile to understand the baseline conditions and an assessment made of the implications of the impact on the coastal regime over the lifetime of the proposed development. The initial analysis of the impacts of the development are contained within Section 12 of the original ES. Following the submission of the outline planning application further information was requested by the Local Planning Authority. This was provided as part of the Regulation 19 submission.

2.35 The original ES concluded that:

“The Proposed Development is expected to exert little to no impact on the coastal geomorphological processes or Crymlyn Burrows SSSI, with the residual impacts associated with site preparation and construction anticipated to be negligible. The potential impacts associated with the operational phase of the Development are also anticipated to be predominantly negligible, with the exception of the loss of 3.3ha of sand dunes, of which 1.3ha is unprotected by rock revetment. The loss of dunes therefore represents a reduction in sediment supply to the beach and SSSI, which is judged to be an impact of minor adverse significance.

In accordance with the criteria presented in Chapter 2: Methodology and Significance Criteria of this ES, there are anticipated to be no significant residual impacts of the Proposed Development on the bay and Crymlyn Burrows SSSI, following implementation of the aforementioned mitigation measures”.

2.36 The supplementary evidence provided in the Regulation 19 submission incorporated further information on coastal geomorphology in a report by Cascade consulting entitled ‘Bay Campus – Response to CCW’ dated 12th November 2010. The key conclusions were also summarised in the covering letter to the Regulation 19 submission as follows:

- *The Applicant is committed to protecting the site from a 1 in 100 year storm event, as requested by the regulators of sea defence matters (EAW), plus a voluntary allowance for 30 years of sea level*

rise. Anything further to this is simply a response to specific questions asked by CCW and does not form part of the planning application;

- The site is currently subject to a policy of “Hold the Line” under the current Shoreline Management Plan and this policy remains for the Shoreline Management Plan 2;*
- Examples of coastal revetment structures and hardpoints around the UK in broadly similar conditions show that such structures act to trap sediment and promote accretion;*
- Neither the existing or upgraded revetments for the 30 or 100 year designs have been shown to have significant impacts on the SSSI or geomorphological processes. On the contrary, the revetments have been found to trap sediment in front of the SSSI, assisting in the protection of these dunes.*

2.37 Despite the submission of further evidence, there remained disagreement amongst the specialists as to the impact of the proposed development on coastal geomorphological processes. As a consequence, a condition was attached to the outline planning permission which required the submission of a Monitoring and Mitigation Scheme (Condition 27). The scope of the monitoring scheme was submitted on 21 November 2012 and this requirement of the condition subsequently discharged by the Local Planning Authority on 4 January 2013.

2.38 Since the grant of outline planning permission, monitoring has been undertaken pursuant to the approved details relating to Condition 27. As monitoring has been undertaken this has been added as appendices to the original scheme of management for Coastal Geomorphology. Analysis of the latest monitoring results is provided in the section comparing the areas and volumes within the monitoring area in order to provide an understanding of the coastal processes. This section of the Report states:

“The analysis of the surveys conclude that the frontage is moderately accreting which is highlighted particularly by sections 213 - 216. The beach volumes calculated from surface data show some areas of slight erosion. However, over the data period, the trend is for slight accretion since 2012 as indicated within Table 1. The accretion and erosion trends are broadly between the predefined historic thresholds suggesting a sediment system largely in balance. As such, it is not deemed necessary to review the monitoring thresholds”.

2.39 The monitoring evidence therefore supports the conclusions of the original ES that the impact of the development on coastal processes would be negligible. The assessment work undertaken to inform the original ES and Regulation 19 submission, combined with the monitoring evidence, is considered to remain robust and provides a sound basis upon which to determine this, and future applications, within Phase 2 of the Bay Campus site.

Rock Revetment

2.40 The Development Proposals chapter of the original ES explained that the development for which planning permission is sought includes works to the existing rock revetments to the south of the proposed campus buildings. It is assumed in the outline planning application that the revetment will be to a height of +7.2m AOD with a further 0.9m high wall to prevent overtopping onto the adjacent promenade.

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- 2.41 A profile of the revetment is provided in figure 5.2 of the original ES. This shows a setback of 10m from the crest of the revetment to the southern elevation of the adjacent building. This profile is of a typical section and not based upon a specific point on the southern boundary.
- 2.42 The detailed design of the rock revetment was not provided with the outline planning application, however this has been considered subsequently at the detailed stages for both the first phase reserved matters application and for the full application for the International College.
- 2.43 Alongside the first phase reserve matters application was submitted a survey of the existing sections of the revetments and the proposed works. Following further discussions with the local planning authority however it was agreed that no physical works were required to the rock revetment on the southern boundary of the first phase reserved matters application.
- 2.44 Alongside the full application proposal for the International College was submitted a detailed application for a section of rock revetment. Detailed modelling of the requirements resulted in a revetment designed with a crest height of 11m and a building setback of circa 24.8m from the crest.
- 2.45 The planning history at the Campus demonstrates that the outline permission provides a flexible yet robust basis for subsequent detailed applications. For each future building which is proposed adjacent to the southern boundary of the site the coastal protection measures will be considered in detail and submitted as planning permission is sought for their delivery. This process will ensure that future buildings are protected from wave action.

Water Resources and Flood Risk

- 2.46 Chapter 13 of the original ES contains the baseline conditions and assessed environmental effects on water resources and flood risk. Section 13.5.1 provides details of the potential impacts and proposed mitigation measures for each of the identified surface water and groundwater pollution sources during the construction phase.
- 2.47 The operational phase effects were assessed in Section 13.5.2. These were then brought together in Section 13.6, with Table 13.7 summarising the significance of the residual impacts on water resources after taking account of mitigation.
- 2.48 In respect of flood risk and drainage, the proposed site wide solution for the whole of the Campus is to raise the ground level to 7.0m AOD (this is a minimum site level with 8m AOD being the maximum site level permitted) and the finished floor levels of buildings and roads to 7.4m AOD (with a permitted vertical limit of deviation of +0.5 metres). This would ensure protection of the site from 1 in 200 year tidal flood events. These measures were reviewed by the Environment Agency Wales (now Natural Resources Wales) at the time of considering the outline planning application and confirmed as acceptable to ensure effective prevention of flooding. These minimum floor levels are controlled via condition 5 of the outline planning permission.
- 2.49 Since the grant of outline planning permission, TAN15: Development and Food Risk has been updated to reflect the most recent risks posed by climate change. This application seeks to raise the levels of the land

to an appropriate level (7.83m AOD) to protect it from the risk of flooding. The raising of the levels of land is acceptable within the context of the approved parameters of the outline planning permission.

- 2.50 The circumstances pertaining to the reserved matters application proposals are consistent with the outline planning permission and hence the approved mitigation is considered acceptable. This has been taken on board in the subsequent reserved matters and full applications which are consistent with the ground floor levels required by condition on the outline planning permission.
- 2.51 During the course of the construction which has taken place to date and the operation of the completed parts of the Campus there have been no known issues effecting water resources. Furthermore, no changes have occurred which suggest that the conditions of the original ES are no longer valid or fit for purpose.
- 2.52 For the reasons set out above, it is considered that the conclusions of the original ES supporting the outline planning permission and proposed mitigation measures remain an up to date and robust basis for the future applications within these 2 of the Bay Campus site, which are submitted in accord with the outline planning permission.

Ground Conditions and Hydrogeology

- 2.53 Considerable assessment work has been undertaken of the ground conditions across the whole of the Campus. Indeed, given the site's previous use as an oil tank storage farm, previous and current owners have not only undertaken very detailed assessments of the ground conditions, but have also worked closely with Natural Resources Wales (then the Environment Agency Wales) to devise and implement a Remediation Strategy. This evidence informed the ground conditions and hydrology chapter of the original ES which assessed the potential impacts and mitigation measures during the site preparation and construction phase, and subsequently during the operational phase.
- 2.54 Table 14-8 sets out the summary of residual impact following the implementation of the proposed mitigation measures. All assessed impacts during the construction phase were concluded to be of 'negligible' significance with the exception of 'treatment of identified contamination'. Once completed, and during the operational phase, again all impacts were assessed to be of negligible significance other than 'impact to ground conditions post remediation'.
- 2.55 The mitigation measures proposed within the original ES were captured in planning conditions attached to the outline planning permission. Of particular relevance are the following conditions:
- Condition 15 required the submission of a full assessment of the nature and extent of contamination including, a desk top study and intrusive investigation across the site. An assessment was required of the risks to a number of receptors and an appraisal of the remediation options and justification for the preferred option.
 - Condition 16 ensured that no develop took place until the Remediation Scheme and Verification Plan approved under Condition 15 is submitted to and approved by the Local Planning Authority.
 - Condition 17 required implementation of the approved scheme and the subsequent reporting of the effective of the remediation carried out.

- 2.56 A submission was made pursuant updated conditions these conditions on 5 December 2012. Following this submission, the Local Planning Authority approved the information provided on 25 January 2013. This confirmed the full discharges of Conditions 15 and 17 for the whole of the Campus.
- 2.57 Further ground condition monitoring has been undertaken since in accordance with the condition requirements. The technical note produced by PJA (see Appendix 5) summarises the latest position in relation to these conditions and concludes that all required information has now been submitted enabling conditions 15, 16 and 17 to be discharged. Indeed, the principal ground condition planning conditions are replaced by 11 of the latest outline planning permission and is standard, covering the discovery of unexpected contamination:

“In the event that contamination is found at any time when carrying out the approved development that was not previously identified, work on site shall cease immediately and shall be reported in writing to the Local Planning Authority. A Desk Study, Site Investigation, Risk Assessment and where necessary a Remediation Strategy must be undertaken in accordance with the following document:- Land Contamination: A Guide for Developers (WLGA, WAG & EAW, July 2006). This document shall be submitted to and agreed in writing with the Local Planning Authority. Prior to occupation of the development, a verification report which demonstrates the effectiveness of the agreed remediation, shall be submitted to and agreed in writing with the Local Planning Authority.”

- 2.58 In light of the further information now available since the original ES, there is a greater understanding of the potential environmental effects of development and the required mitigation measures. The conclusions of the original ES regarding the significance of the residual impacts have been borne out by the further evidence and remain reasonable and valid conclusions for the, as yet undeveloped, land within the Campus.

Noise and Vibration

- 2.59 Noise and vibration were assessed in Chapter 15 of the original ES. The methodology was agreed and a total of 17 monitoring locations were selected thought the site.
- 2.60 The assessment produced assumed the ‘worst case scenario’ in respect of environmental impact based upon a level of traffic generated from the development and provided mitigation measures to reduce the magnitude of the residual impacts.
- 2.61 The overall summary of cumulative effects in respect of both noise and vibration was that all construction and operational effects would be ‘negligible’. Since there has been no changes of substance to the proposals that were tested at the time of the original ES, the original conclusions remain a robust basis upon which to determine applications made to the Council pursuant to the extended outline planning permission.

Air Quality

- 2.62 Air Quality was assessed as part of the outline planning application and addressed in Chapter 16 of the original ES. Monitoring data was gathered at key receptors within a 10km radius of the site and a further

nine local receptors were analysed in order to define the baseline conditions. The results of the baseline analysis are set out in Section 16.4 of the ES.

- 2.63 Section 16.5 of the ES went on to consider the potential impacts of the development during the construction and operational phases and proposed associated mitigation measures. The assessment produced assumed the 'worst case scenario' in respect of environmental impact based upon a level of traffic generated from the development and the air quality impact of the proposed energy generation solution. For example, the assessment assumed that the energy demands of the Campus would need to support "the underground car park [which] will require substantial mechanical ventilation". No underground car parking has been provided within the Campus and hence there has been no energy implications associated with mechanical ventilation.
- 2.64 Based upon the worst-case assumptions, section 16.6 of the original ES sets out the residual impact assessment and conclusions. These conclusions are also summarised in table 16-17.
- 2.65 Both temporary and permanent impacts are identified, and the significance of these impacts varies from 'negligible' to 'minor'.
- 2.66 An Addendum Note was submitted alongside the reserved matters application proposals for the first phase of development at the Campus (Reserved Matters Application: P2012/0888). This note assessed the air quality impact of the detailed proposals for the whole of Phase I, which was submitted pursuant to Condition 47 of the outline planning permission, which has been superseded by condition 15 of the extended planning permission. The Note confirms that there would be no greater impact on air quality as a result of the detailed design proposals than was envisaged through the original ES.
- 2.67 It further concludes that the concentrations of all pollutants in the 'schedule of air-quality regulations' are likely to sit well below the statutory criteria and the effects on local air-quality considered negligible in terms of effects on human health. Effects on the Crymlyn Bog habitat is likely to remain insignificant, whilst the effect on the Crymlyn Burrows SSSI would be 'minor adverse' at worst.
- 2.68 For these reasons, the conclusions of the original ES are considered remain a valid and robust worst case scenario for determination of this reserved matters application.

Cultural Heritage and Archaeology

- 2.69 A detailed desk based assessment of the implications of development on archaeology and cultural heritage was undertaken for the Campus as a whole to inform the original ES. The assessment was submitted as a Technical Appendix (Number 17) within Volume II of the original ES.
- 2.70 The assessment concluded that it is highly unlikely that any archaeological and palaeoenvironmental remains are present within the proposed development site. This is primarily due to the location of the site and its previously developed uses. Furthermore, there are no Scheduled Monuments or Listed Buildings within or surrounding the site, nor is the site within or adjacent to a Registered Historic Landscape or Conservation Area.

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- 2.71 As a consequence, the original ES concluded that the application site was considered to be of no historical importance and the impact of both the construction phase and completed development was therefore assessed to be negligible.
- 2.72 There have been no changes to the historic environment in the vicinity of the site since the original assessment was completed. This assessment and the conclusions within the original ES therefore remain up to date and valid for the determination of this reserved matters application.

3. Conclusions

- 3.1.1 This SES systematically reviews the conclusions and proposed mitigation within each of the technical chapters of the original ES submitted with the outline planning application in 2010 and the subsequent Regulation 19 submission. In so doing it considered whether the conclusions of the original ES remain sufficiently robust and accurate to support the determination of this reserved matters approval application.
- 3.1.2 Since the outline planning permission was granted, considerable development has taken place on the application site. In light of this, it is inevitable that both the baseline conditions and the development assessed at the time of the outline application, will have changed. Aside of a small number of deviations, these changes to the environment are consistent with the parameters of the outline planning permission and the changes therefore expected and the effects assessed through the original ES. Mitigation measures which were proposed at the time the outline planning permission was granted have been fully implemented through a combination of design measures, planning conditions and Section 106 provisions.
- 3.1.3 Furthermore, monitoring of ground conditions, coastal geomorphology, ground gases etc taken place since the grant of outline planning permission has verified the conclusions of the original ES and identified no further environmental effects which were not anticipated at the time that outline planning permission was granted.
- 3.1.4 The overall conclusion of the SES is that the original ES and Regulation 19 submission remain robust and provide a sound basis upon which to determine this application.