
Environmental Statement

Volume 3 – Non-Technical Summary

Coed Darcy

Prepared for:

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Introduction

This Environmental Statement has been coordinated and prepared by Savills on behalf of St Modwen Developments to accompany an 'Outline planning application, with all matters reserved except for strategic access, for residential uses (C2 & C3 use class), including land for education (D1 use class) with associated public open space, commercial uses (A1, A2, A3, B1, D1 & D2), commercial / employment (B2 & B8) uses, public open space, highway works, sustainable drainage, ecological mitigation and enhancement, landscaping, ground remediation, and associated engineering and infrastructure works'.

Given the scale of the Proposed Development, an Environmental Impact Assessment (EIA) has been undertaken. This Environmental Statement (ES) records the outcomes of the assessment and provides information on the Site, the Proposed Development, an assessment of the likely significant environmental impacts and the measures proposed to mitigate the impacts of the Proposed Development.

In accordance with the EIA regulations, the ES consists of the following elements:

- Volume 1: ES Main Report;
- Volume 2: Technical Appendices; and
- Volume 3: Non-Technical Summary.

The Non-Technical Summary (NTS) provides an overview of the main findings of the ES. The aim is that this document will help people to understand the main conclusions drawn from the EIA process and provide the results in a more accessible and summarised format.

The Site

Overview

An outline planning application was granted permission on the Site in 2008, and since then, there has been considerable discussions and dialogue between the Applicant and Neath Port Talbot County Borough Council (NPTC) about the delivery of the Site and the implementation of the planning permission. As such, there is a considerable amount of information already known about the Site, its constraints, challenges and the significant opportunity that it offers to deliver a high quality, sustainable new place.

The Site

Location

The Site is a former BP refinery and is predominately brownfield land. The Site is approximately 131 ha in size. The Site comprises former post-industrial land which has previously been cleared under the extant permission and has been subject to significant remediation since its previous use as an Oil Refinery. It therefore predominantly comprises bare land, which has been partially vegetated with patches of woodland and some existing landscaping at the Site boundaries.

The Site also includes the existing D'Arcy Business Park and existing building at Britannic House and William Knox House which accommodates office space. The Site also includes the original contractor's yard, which is located to the south of the Site boundary and to the north of Llandarcy Village, and is leased to a mix of businesses for open storage and industrial uses.

Figure 1 - Site Location Plan Extract



Around 300 homes have been delivered at Coed Darcy already (i.e. Phase 1 Persimmon development) which lies outside of the Site boundary. Furthermore, the 'Heritage Gate' development, comprising further residential development has been developed to the south west of the Site, directly to the north of Llandarcy Village. Further to the east of the Site there are a number of commercial and leisure uses, including a hotel, restaurant and sports facilities.

The Site is located to the west of junction 43 of the M4 motorway. Swansea city centre lies 4km south-east of the Site whilst Neath town centre lies circa 3.5km north-east. The Site is currently accessed from

the B4290 which feeds off of junction 43 of the M4 motorway via the Northern Access Road (which has been implemented under the existing planning permission).

The railway line dissects the northern and central part of the Site. The far northern boundary adjoins the 'north site' reservoir (which lies outside of the Site boundary) and the M4 abuts the eastern boundary of this part of the Site.

The Site is relatively steep in parts, with a number of topographical features. The high point of the Site is identified immediately west of the existing residential development lying at approximately 77.0m above ordnance datum and falls from east to west towards the Crymlyn bog down to a level of approximately 9.0m above ordnance datum. Levels also fall from this high point to the railway to north, which is in a cutting, and towards the existing Coed Darcy Business Park where levels are approximately 29.0m above ordnance datum. The topography north of the railway has a plateau through the centre, where levels are approximately 55.0m above ordnance datum which falls away to approximately 40m above ordnance datum along the northern boundary and southern boundaries and approximately 25m above ordnance datum in the south-western corner of the Site.

The Crymlyn Bog Ramsar Site, Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR) abuts the western boundaries of the Site.

Planning Policy Context

There are a number of policies that provide guidance for social and economic development in the UK, Wales and at a local authority level, the key documents of which are set out below:

- Future Wales – The National Plan 2040 (February 2021) – is a national spatial plan for Wales, addressing key national priorities;
- Planning Policy Wales (11th Edition, February 2021) – sets out the land use policies of the Welsh Government;
- PPW is supplemented by a series of Technical Advice Notes (TANs). In particular, TAN 23 Economic Development (February 2014).
- Well-being of Future Generations (Wales) Act 2015;
- Building Better Places (July 2020);
- Placemaking Charter (September 2020);
- NPTC Local Development Plan (LDP) (January 2016) is used to guide and manage development, providing a basis by which planning applications will be determined. 'Coed Darcy Strategic Regeneration Area' is allocated under Policy SRA1 of the LDP and is one of the Strategic Sites that NPTC has allocated to help meet the identified housing need.

Non-Technical Summary

Coed Darcy



Proposed Development

The description of development for this outline planning application is:

Outline planning application, with all matters reserved except for strategic access, for residential uses (C2 & C3 use class), including land for education (D1 use class) with associated public open space, commercial uses (A1, A2, A3, B1, D1 & D2), commercial / employment (B2 & B8) uses, public open space, highway works, sustainable drainage, ecological mitigation and enhancement, landscaping, ground remediation, and associated engineering and infrastructure works

The EIA supports the outline planning application. This section sets out the description of the Proposed Development that has been assessed by the EIA.

Figure 2 - Illustrative Masterplan



The Proposed Development proposes 2,000 new homes, land for educational purposes (with a two-from entry primary school envisaged) with associated public open space, land for commercial uses and an extension to the existing Llandarcy Business Park.

The EIA Parameters

In order for the likely significant environmental effects of the Proposed Development to be properly identified and assessed, it is necessary to clearly identify and scope the components of the Proposed Development that are likely to be delivered. A maximum potential development is tested so to assess a worst-case scenario.

EIA parameters are used to define the extent of the Proposed Development in terms of scale, mass, quantum etc. and allow the likely worst-case scenario and any likely significant environmental effects to be identified. These parameters allow for a degree of flexibility to ensure that the Proposed Development remains viable should there be any changes in the demand or building requirements over the construction period – which for a project of this scale is likely to be 12 years. The parameter plans are presented in Figures 3-5 of this NTS, as per Table 1 below.

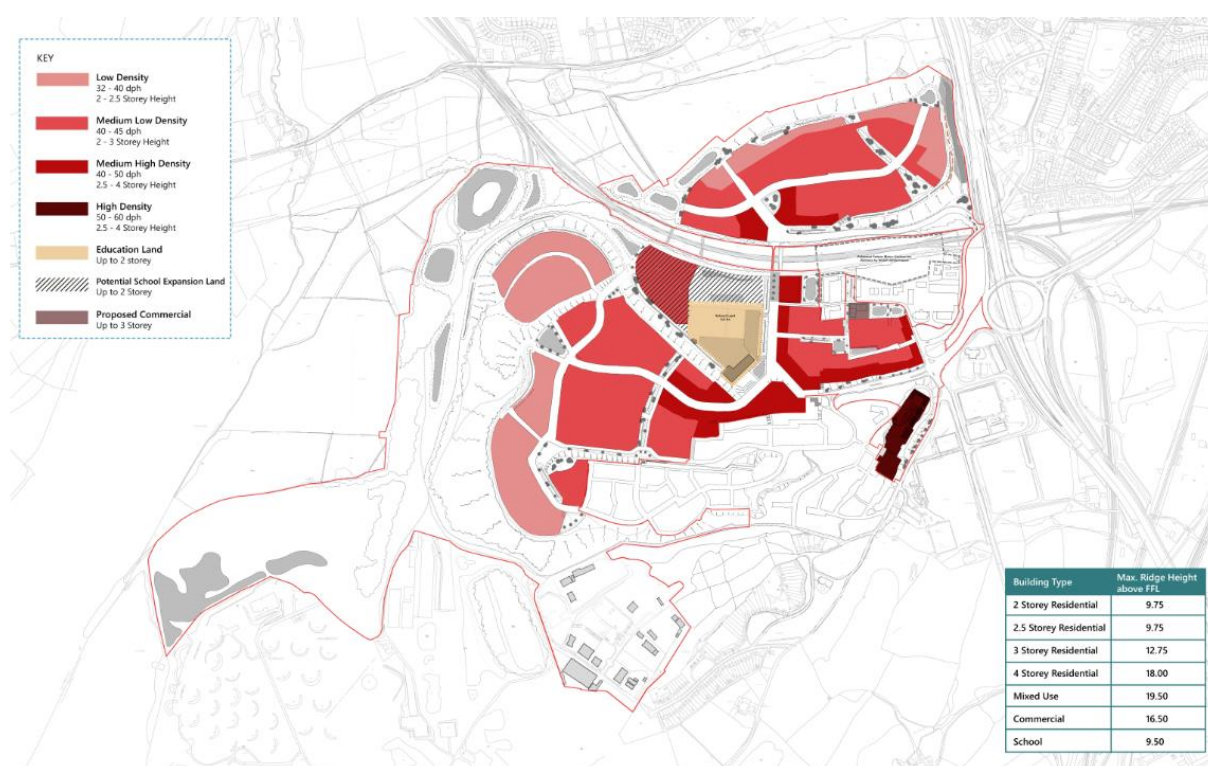
Figure 3 - Land Use parameter plan



Table 1 – Parameter Plans

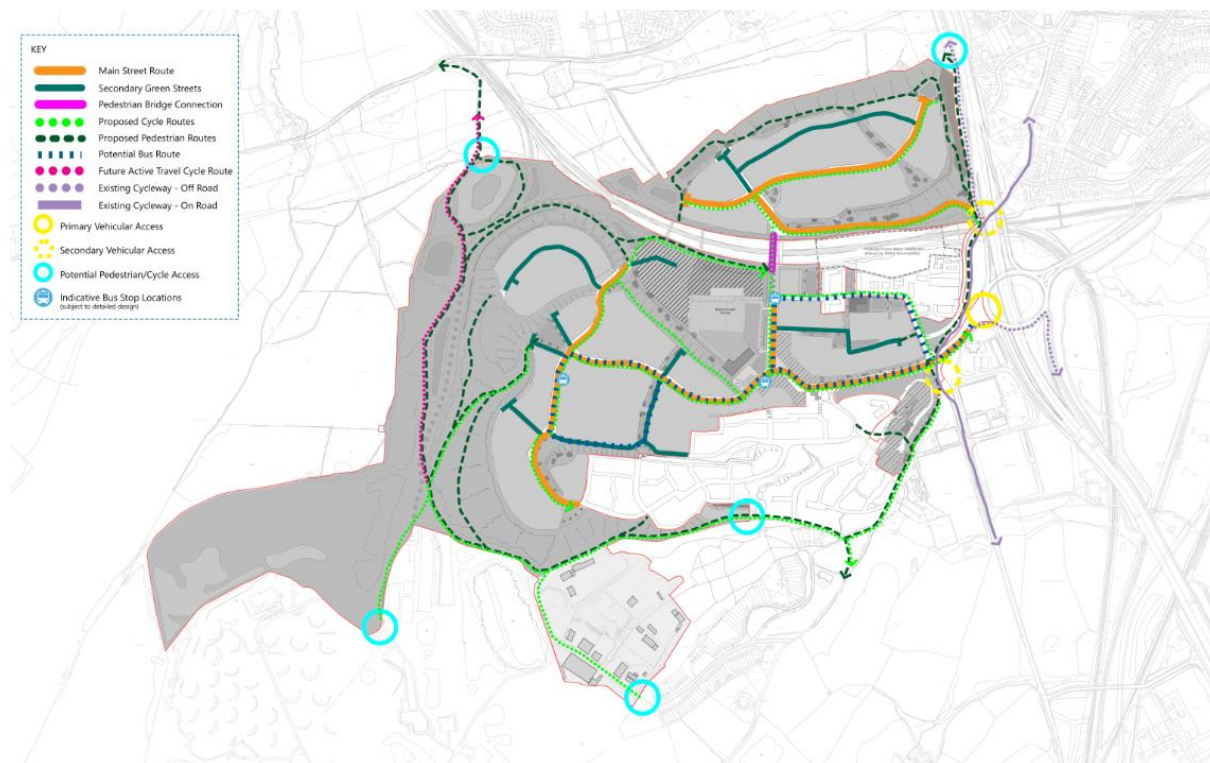
Parameter	Figure	Status
Land Use Plan	3.1	For approval
Scale & Massing	3.2	For approval
Movement	3.3	For approval

Figure 4 - Scale & Massing parameter plan



The parameter plans define the parameters of the Proposed Development which have been the subject of the EIA. The detailed design of these elements for which outline permission is sought should therefore evolve within these parameters to the extent that they do not give rise to any significant un-assessed effects.

Figure 5 - Movement parameter plan



Alternatives and Design Evolution

In identifying the information to be included in the ES, the Regulations specify, in paragraph 2, part 1, schedule 4, a requirement that “an outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for this choice, taking into account the environmental effects”.

The Site’s allocation in the NPTC LDP promotes the principle of the Site’s development for the proposed form of development (residential), there is no further necessity at this point to consider alternative locations for the Proposed Development.

An alternative design

The scale and nature of development is defined within the NPTC LDP on the basis of meeting the housing needs of the County Borough area.

The total allocation for the ‘Coed Darcy Strategic Regeneration Area’ is 4,000 units (2,400 within the Plan period) and with 41,200 sq. m. of business floorspace. This application is for part of the area allocated within the LDP and it is proposed to develop up to 2,000 new homes.

As identified above the site is subject to an allocation for residential-led mixed use development in the adopted LDP. This indicates that the site should be developed for a broad mix of uses including housing, education, retail and commercial. Given this policy position, it is not considered appropriate to consider any options for alternative uses.

It is noted that the LDP allocation for the site includes the potential to deliver 41,200sqm of B1 office space. Justification for not delivering this amount of B1 office space will be provided in the Planning Statement which accompanies the planning application.

Transport & Travel

The Transport & Travel Chapter identifies and assesses the impacts of increased road traffic which is predicted to arise as a result of the construction, and operation of the Proposed Development. The accompanying Transport Assessment (TA) provides full details of the impact of the Proposed Development on the local and strategic highway network.

The methodology adopted in assessing the likely traffic and transport impacts is based upon the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993), and in accordance with Department for Transport, 2019 Design Manual for Roads and Bridges (DMRB), LA 104 Environmental assessment and monitoring (formerly HA 205/08).

The Proposed Development has good access to the strategic road network (SRN). The Site is located adjacent to M4 Junction 43 which connects to the A465, and the M4. Access to Swansea is either via routes along the M4 to adjacent motorway junctions, or along the B4290 through Jersey Marine and onto A483 Fabian Way.

The Proposed Development is accessible by all modes of travel (walking, cycling, and public transport). The assessment found that the impact of construction traffic on key road links is generally considered negligible. Further consideration has been given to two links where there is a change in flow of over 30% and where there is a change in flow of over 10% on sensitive receptors. The significance of effect assessment for these two links found a neutral or slight effect across all of the specific effects which have been assessed.

Assessment of the development traffic flows (during the operational phase) generally indicates that there would be a negligible impact on the road links. The review of these links has identified that four links exceed the IEMA threshold of 30% for assessment for non-sensitive links, and one link exceeds the IEMA threshold of 10% for sensitive links. The significance of effect assessment for these links found a neutral or slight effect across all of the specific effects which have been assessed.

The review established that there are unlikely to be any significant effects resulting from the construction or operation of the Proposed Development. No significant residual environmental effects with respect of traffic and transport are considered likely.

Whilst the Proposed Development impacts are considered negligible, a range of measures are proposed to reduce the impact of the Proposed Development on the surrounding highway network. These measures include a range of physical (junction and non-motorised user improvements) and Travel Planning and Construction Management Planning measures.

Air Quality

The air quality assessment has consisted of examining the existing baseline conditions in the vicinity of the Proposed Development, identifying potential constraints to the Proposed Development, and

assessing the effects of the Proposed Development during construction and once complete and operational.

The Proposed Development is located in an area of relatively good air quality. The Site is not in or near to an Air Quality Management Area, and the nearest monitoring sites show that concentrations of nitrogen dioxide, one of the key air pollutants considered in the assessment, in 2018 and 2019 were well below the national objectives. All road links in the study area are projected to be compliant with the annual mean nitrogen dioxide air quality limit value in 2021 onwards.

During construction there is the potential for the generation of dust and particulate matter emissions. The construction dust assessment showed that in terms of the expected dust risk, the Proposed Development is considered to be high risk. With appropriate mitigation measures in place, secured in a Construction Environmental Management Plan, there should not be a significant adverse effect at nearby receptors, such as people and vegetation.

Additional traffic travelling to and from the Site during construction is not expected to exceed assessment criteria, indicating that any effect will be negligible and not significant.

Once the Proposed Development is complete and operational, there could be an impact on local air quality at receptors near to roads affected by the additional traffic. A detailed air quality assessment was undertaken to examine concentrations of the key pollutants associated with road traffic: nitrogen dioxide and fine particulate matter. The assessment showed that estimated concentrations of these pollutants were below the national air quality objectives at all receptors included in the assessment, both with and without the Proposed Development. Changes in concentrations with the Proposed Development were shown to be negligible, and the effect would not be significant. No mitigation measures would be required.

Noise

The Noise & Vibration Chapter of the ES considers both the suitability of the Site for residential development, taking into account the existing noise levels on the Site, as well as the temporary construction and permanent operational impacts the proposed development may have on existing sensitive receptors.

An environmental noise survey of the Site was undertaken, and existing noise levels have been modelled across the Site using this data. The majority of the Site was found to have relatively low ambient noise levels and a positive Soundscape featuring natural noise sources. Ambient noise levels were higher nearer the M4 Motorway in the north eastern area of the Site where constant road traffic noise becomes a dominant source of existing noise.

Due to the high levels of road traffic noise in this area, an indicative 3m high noise screen (comprising either a landscaped earth bund, noise barrier or combination of the two) has been included in the design of the Site as inherent mitigation to reduce road traffic noise levels as far as reasonably practicable and improve the Soundscape in areas of the Site affected by higher levels of road traffic noise.

With the inherent mitigation, daytime noise levels in the majority of proposed residential plots are below the design criteria for outdoor garden/amenity areas. Only a small number of plots will experience noise

levels marginally higher than the design criteria. It is recommended that noise levels in these areas can be further reduced through consideration of building/garden orientation to provide additional screening to outdoor spaces.

Indoor daytime and night-time noise levels across the majority of the Site would be below the indoor design criteria with windows open. Suitable daytime and night-time indoor noise levels in the higher noise areas of the Site can be achieved using standard double glazing and an appropriate alternative means of ventilation to enable windows to remain closed (e.g. standard trickle vents).

The full acoustic specifications of glazing, ventilation and noise screening will be confirmed during the detailed design of the development.

Site surveys and subsequent assessments have determined that the proposed development is not adversely affected by any noise of a commercial or industrial nature. Any new commercial or industrial noise sources proposed by the development, including any fixed building services plant, will be assessed at the detailed design stage to ensure they achieve the relevant design criteria.

Noise levels from the construction of the development are expected to result in no impacts at distances greater than approximately 100m from sensitive receptors. Any impacts will be temporary in duration and the majority of construction activities will occur at distances much greater than 100m from sensitive receptors. It is also expected that noise and vibration from construction works will be adequately controlled using standard best practicable means to minimise impacts.

Upon completion of the development, road traffic noise increases from operational traffic on existing roads are predicted to be negligible, with the exception of the entrance to the Site (Ffordd Coed Darcy), which could experience minor noise increases. However, these increases are not expected to result in adverse impacts at any existing sensitive receptors.

Soils, Hydrogeology & Ground Conditions

Potential impacts and effects associated with soils, hydrogeology and ground conditions have been assessed in the EIA, including physical effects, mineral resources and sources of contamination.

Made Ground is present across the majority of the Site associated with historical cycles of development, and subsequent demolition and earthworks. A notable exception is the fields in the north east of the Site which are understood to have never been developed.

Glacial Till has been recorded across the majority of the Site, comprising a heterogeneous mix of clay, silt, sand and gravel, although it is noted to be absent in areas where bedrock outcrops at or close to current ground level. Peat encroaches on the south western part of the Site, beyond the area proposed for development.

The Site is underlain by bedrock of the Pennant Sandstone Formation. A Category 1 Aggregates Safeguarding Area associated with the sandstone bedrock encroaches on the north eastern, north western and south western areas of the Site. The regional bedrock geology forms part of the South Wales Upper Coal Measures Formation. Coal seams sub-cropping in the far south of the Site have historically been mined and abandoned mine entries are recorded by the Coal Authority in the south of

the Site. Coal seams located within a 'Tertiary Zone' for mineral extraction sub-crop at the southern extent of the Site.

The Site is characterised by varied topography which is partly attributable to the underlying geology, and partly to the series of terraces that were formed to facilitate construction of the former oil refinery.

Groundwater receptors include a Secondary (Undifferentiated) Aquifer associated with the Glacial Till and a Secondary A Aquifer associated with the sandstone bedrock.

Surface water receptors include South Site Reservoir and Tal-y-Wedu stream in the west of the Site. North Site Reservoir and Crymlyn Bog are located directly to the north and west of the Site respectively. The Tennant Canal is located 680m to the east of the Site and the River Neath lies approximately 880m to the east of the Site. Crymlyn Bog is a Site of Special Scientific Interest of international significance, a Special Area of Conservation and Ramsar site.

Human receptors considered in the assessment include future on-Site residents, current and future uses of on-Site commercial properties, residents and occupants of off-Site properties, and users of areas of public open space.

Residual contamination is present at the Site as a result of its historical use as an oil refinery. Significant intrusive ground investigation has been undertaken at the Site since 1998, followed by targeted remediation across much of the Site and at Site boundaries to remove gross contamination such as oil and other hydrocarbons. Work is ongoing to remediate and ultimately surrender the Environmental Permit for Crymlyn Tip which is located in the far south west of the Site, beyond the developable area.

Without mitigation, construction of the Proposed Development has the potential to result in effects of neutral to moderate adverse significance. Significant adverse effects are predicted during construction without mitigation associated with soil erosion and compaction, and with risks from contamination to on-Site and off-Site human receptors and surface water in Crymlyn Bog SSSI.

Without mitigation, the Proposed Development has the potential to result in operation effects ranging from moderate adverse to moderate beneficial significance. Significant effects during operation are predicted associated with soil erosion and compaction (moderate beneficial significance) and risks from contamination to on-Site human receptors (moderate adverse significance).

Additional mitigation is proposed to reduce the identified impacts and effects in accordance with current statutory guidance and best practice for development of brownfield sites. Where required, additional intrusive ground investigation and risk assessment will be carried out to supplement the existing dataset, taking account of the indicative masterplan and proposed finished ground levels of the Proposed Development. Remediation will be designed, completed and validated to mitigate unacceptable risks. Further assessment of coal mining legacy will be carried out. Design of foundations and ancillary infrastructure will be based on the recorded engineering properties of the ground. A Construction Environmental Management Plan will be prepared to set out the protocols to be implemented during construction of the Proposed Development to reduce risks to the identified receptors and to mitigate physical effects during construction such as soil erosion.

With mitigation, physical effects associated with the Proposed Development, such as changes in topography, ground stability, are generally assessed to be of neutral significance during construction and operation. There is considered to be a permanent effect of minor adverse significance associated with soil erosion and compaction during construction, and a permanent effect of minor beneficial significance associated with improving the stability of localised areas of steep topography during construction at the Site. Permanent effects of moderate beneficial significance are assessed in relation to soil erosion and compaction by the time of operation of the Proposed Development.

Permanent effects of minor adverse significance are assessed in relation to the aggregates safeguarding area which encroaches on parts of the Site. The aggregates safeguarding area is regionally extensive and the Proposed Development will result in sterilisation of a small portion of the aggregate resource. Earthworks required to prepare development plateaus at the Site will generate surplus arisings of aggregate. Although the surplus will originate from outside of the aggregates safeguarding area, this is considered to balance the localised sterilisation of the safeguarded aggregate resource.

Assuming all additional mitigation is implemented, effects associated with contamination are assessed as being of temporary neutral significance during construction. The effects associated with contamination by the time of operation of the Proposed Development are assessed to be of permanent moderate beneficial to neutral significance.

Depending on the findings of ground investigation and risk assessment that will be carried out in the next stages of the planning process, and the requirement to satisfy relevant planning conditions, it may be necessary for longer term monitoring such as gas monitoring or groundwater monitoring to be carried out at the Site as a precautionary measure.

Water & Flood Risk

This Chapter assesses the significance of effect of the Proposed Development on the water environment. A supporting Flood Consequence Assessment and Sustainable Drainage Strategy has also been developed which is available appended to the EIA document.

A number of primary water receptors have been identified for the Site, including two reservoirs (the South Site Reservoir which is within the Site boundary and the North Site Reservoir which forms the northern boundary of the Site), the River Neath which lies approximately 650m east of the Site and the Crymlyn bog which lies immediately west of the Site.

From review of publicly available Natural Resources Wales (NRW) mapping, the Site boundary lies outside any areas identified as 'at risk of flooding from Rivers and Seas', with all built development being located within Zone A on the NRW Development Advice Mapping (DAM). In addition, all built development is also proposed outside the maximum flood extents associated with reservoir flood risk on the publicly available NRW mapping.

From review of the NRW Water Watch Wales mapping, the Site falls within the Tawe to Cadoxton Management Catchment and the waterbody Crymlyn Brook - HW to conf with Tennant Canal. The

overall water quality status of this body was assessed as 'Moderate', according to the NRW Water Watch Wales mapping.

NRW's Water Watch Wales mapping identifies the underlying groundwater body as Swansea Carboniferous Coal Measures which covers an area of 758.38km² and has an overall classification of 'Poor'.

The Site falls within NRW's Swansea Bay Abstraction Licensing Strategy area. This has identified that the Site lies in an area where the "Groundwater unit balance shows groundwater available for licensing. New licences can be considered depending on impacts on other abstractors and on surface water".

The following receptors have been identified and assessed as part of this Chapter; the Crymlyn Bog; the River Neath; Secondary A bedrock aquifer; Secondary Undifferentiated superficial aquifer; North Site Reservoir; and the South Site Reservoir/

Through the Construction Phase of development the possible water pollution from construction activities has been identified as a potential risk however inherent mitigation, including a CEMP and monitoring throughout the proposed works will be implemented.

Furthermore, risks from the Site Compound, where materials and equipment will be stored have also been identified as a Construction Phase risk. These will be managed through the existing, and any additional Site security if required.

Other Construction Phase Risks that have been identified include piling for foundations and de-watering and over-pumping excavations, mitigations measures for which will be outlined in the CEMP.

Risks arising from the Proposed Development include an increase to flood risk due to the increased impermeable area proposed across the Site, which will be inherently mitigated through the implementation of a surface water drainage strategy. At this stage, this has been developed in accordance with the Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems in Wales and will be reviewed by the SuDS Approval Body (SAB) as each phase of the design is brought forwards. This will ensure water quality is maintained and flood risk is not exacerbated due to the increase in hardstanding.

There will also be an increase on the volume of foul drainage in the network within the vicinity of the Site from the Proposed Development. Discussions have therefore been held with DCWW to ensure that adequate upgrades are made to the foul network downstream of the Site to enable the development to be brought forwards.

Assuming all inherent mitigation is implemented, effects associated with contamination are assessed as being of temporary minor adverse to neutral significance during construction. The effects associated with contamination by the time of operation of the Proposed Development are assessed to be of no significant effect. No cumulative significant effects were also identified.

Biodiversity

Ecology Solutions (Manchester) Limited were commissioned by St. Modwen Developments Ltd to undertake Ecological Assessment work of land at Coed Darcy, Llandarcy, Skewen, Neath, hereafter referred to as 'the Site', and to undertake a detailed assessment of the proposed development.

The ecological assessment is based on results from field surveys undertaken by Ecology Solutions in 2020 and 2021, alongside historic survey data collected in support of the previous OPP consent. Specific surveys for invertebrates were led by Richard Wilson Ecology Limited in 2020. Habitat surveys were undertaken to ascertain the general ecological value of the land contained within the boundaries of the Site, and to identify the main habitats and associated plant species.

Specific protected species surveys have been undertaken for Badgers, bats, reptiles, GCN (and common amphibians), breeding birds, Dormouse, Otter and Water Vole, and invertebrates. Further information has been obtained through consultation with the recognised bodies involved in nature conservation in the local area.

The Site supports a diverse range of habitats including secondary woodland, waterbodies, and a mosaic of early successional habitats which include for substantial sparse and dry grassland. Together, these habitats form a valuable open mosaic within the Site.

The value of the ecological features identified through both field surveys and desk-top studies have been interpreted within the context of recognized methodologies, and also within the planning policy context, both on a regional and local level.

The potential ecological impacts of the Proposed Development are largely focused on the Site and its immediate surroundings. However, given the Site's location within a wider network of green space (including a number of statutory and non-statutory sites) consideration has also been given to the potential impacts and opportunities that arise at a landscape scale.

Following the employment of mitigation and enhancement measures as set out in this ES Chapter, there are predicted to be no significant adverse impacts on any statutory and/or non-statutory sites, either alone or in combination with any other plans or projects. Indeed, the provision of new educational resources will offer a mechanism through which potential new residents can positively interact with the wider green space network within which the Site sits, providing ecological connectivity in the long-term.

Habitats of relatively higher ecological value within the context of the Site include the early successional re-colonising vegetation, localised areas of wet grassland, secondary woodland, waterbodies and tree belt. In addition, and notwithstanding that many of the individual component habitats are of very limited value in isolation, the mosaic of early successional habitats on Site would qualify as the additional habitats on previously developed land.

The Site supports several protected and notable faunal species/groups.

A small number of trees associated with the woodland in the west of the Site support features of potential value to roosting bats, albeit no evidence of roosting has been recorded within the Site (including through specific climbing surveys). Bat activity surveys confirmed the Site to be subject to a generally low level

of activity. Unsurprisingly, relatively higher levels of bat activity are associated with the larger waterbodies, in association with areas of woodland and along the Site's vegetated boundaries, particularly the southern edge of the Site. Typically, very low levels of bat activity were recorded across open habitats. Activity was found to be dominated by Pipistrelle bats (these including for the UK's most common bat species).

Small populations of two common reptile species are also present within the Site, with this including for Common Lizard (peak count of eight individuals) and Grass Snake (peak count of 11 individuals). The locations of findings indicate populations may be re-establishing from pockets of retained (previously un-impacted) habitats within the Site, or otherwise from off-site habitats.

Breeding bird surveys confirmed the Site to support a diverse breeding bird assemblage, with 76 species recorded across the wider Coed Darcy landholding, including 42 species within the Site. The greatest interest was found across the open habitats, not least on account of breeding Lapwing, Ringed Plover, Little Ringed Plover and Skylark, whilst good assemblages were also recorded in wetland and woodland areas.

GCN surveys confirmed the presence of a 'medium' population of GCN, alongside valuable populations of common amphibians, with these populations sustained within the north of the Site (north of the railway) as well as in the south-west of the Site. Regarding the ponds to the north of the railway, noting their apparent suitability for GCN, the smaller size of the population is considered a reflection of the recent origin and establishment of habitats. On the evidence available, and noting the western 'bias' to the findings, it is concluded GCN (and other amphibians) are likely to have only recently colonised this area of the Site, likely from suitable off-site habitat to the west of the Site.

Specific surveys for invertebrates confirmed the Site to be of regional importance for terrestrial invertebrates, with 380 species recorded, 6.6% of which are Key Species. The habitats within the Site identified to be of the highest value to invertebrate assemblages include short sward and bare ground habitats (particularly those with dry soils, varied topography, and diverse floral communities). Whilst noting the early successional habitats within the Site are not of equal qualitative value to invertebrates, it is nonetheless concluded it is the overall mosaic of habitats, and the combination of habitat characteristics, which attribute the Site its value, rather than the presence of specific high value features or localised habitat areas within the Site.

Specific surveys found no evidence for the presence of Dormouse, Water Vole, Otter or Badger within the Site.

Given the location of the Site, the habitats present, and their presence in data search information, the Site is considered likely to provide a degree of suitable opportunities for small mammal species including Hedgehog. However, there is nothing to indicate the Site as being of heightened significance for this or any other mammal species.

The proposals include for the establishment of an extensive green infrastructure network, including for a significant area (approximately 12ha) to be set aside specifically for biodiversity, and with no formal public access permitted. In addition, further habitat creation is to be delivered within the main

development footprint, not least including for the provision of extensive living roof habitat on the proposed school.

The provision of the Site wide green infrastructure will seek to retain, enhance and create an extensive and diverse mosaic of habitats during the construction and operational phase of the proposals, with careful consideration to be given to early construction phasing (in order to ensure retention of OMH resource).

Of particular importance, the proposals will secure the establishment of appropriate, biodiversity led management across the ecology area (and other areas of green infrastructure within the Site) in the long-term. This management will seek to control ecological succession within the Site, ensuring the structural and botanical diversity of habitats is enhanced in the long-term. A draft LEMP is provided as an Appendix to this ES Chapter and it is proposed for a final version of this document to be secured by an appropriately worded planning Condition, should the scheme be successful.

Careful consideration has been given to the potential for adverse impacts to arise on protected and notable faunal species (or assemblages) and appropriate avoidance, mitigation, and enhancement measures are identified within this ES Chapter. Further details on mitigation, including for detailed conservation strategies, are proposed to be secured by Condition, including within the proposed LEMP.

The retention and creation of a diverse mosaic of habitats as part of the proposals and the implementation of long-term, biodiversity led management for the Site's green infrastructure, will ensure significant qualitative enhancements for biodiversity in the long-term. Indeed, the adoption of the measures set out in this ES Chapter will ensure any residual impacts will be positive, with no adverse residual impacts predicted for any ecological receptors.

Indeed, securing a legacy of biodiversity led management regime, not least for extensive areas of OMH, is assessed as a significant benefit. It is only through the instigation of such management that semi-natural habitats can be expected to retain or attain good ecological condition in the medium to long term. For early successional habitats and OMH, the timeframes for loss and/or decline can be particularly short-term and therefore the benefit of management all the more stark.

Retaining or recreating substantial OMH within the Site will contribute positively to long-term ecological resilience in the local area, safeguarding a resource that is not only of high quality in its own right, but which also functions as an essential dispersal corridor (both as seed banks and for faunal species) within the landscape and which, in future years, will provide a vital role in species movement as OMH in the wider landscape is fluctuates in extent and quality (be it through succession or anthropogenic pressures). Similar benefits to resilience can be expected through creation of other habitats, not least ponds and wetland habitats which can equally be vulnerable to succession and which are often of high value to faunal species.

As such, no adverse cumulative impacts have the potential to arise and, indeed, the proposals would contribute positively to biodiversity and nature conservation objectives in the local area, as is clearly desired by relevant legislation and planning policy.

Landscape & Visual Impact

The Landscape and Visual Impact Assessment (LVIA) was prepared by Soltys Brewster Consulting, a Chartered Landscape Architecture practice who has considerable experience in preparing assessment work for a wide range of development types.

The landscape and visual impact assessment included a study area which extends up to 3km radius from the centre of the proposed development site. The landscape assessment included a desk study, site visits, visual envelope analysis and illustrative photographs indicating the extent of the proposed development in the landscape from key viewpoints around the site.

The methodology applied to the assessment was developed by Soltys Brewster Consulting and follows an accepted approach derived from the current published 'best practice' guidance.

The assessment looked at both the physical effects on the landscape and the effects on visual amenity within the defined study area, during the construction phase and once the development is complete.

A total of 25 Landscape Character Areas (LCAs) were identified within the 3km study area, of which visual analysis showed that all or part of the development will be visible from only 11 of the 25 LCAs and where in theory effects on landscape character may occur.

During the construction phase of the works, any effects on landscape character will predominantly be restricted to within the site itself, where construction activity including site clearance and the removal of scrub vegetation will result in a change to the existing character.

From other locations surrounding the proposed site the character of the landscape is predicted to remain unchanged. Therefore, effects arising from the construction phase of the development are predicted to be of minor significance.

Following construction work, site assessment work concluded that significant effects are likely to only occur within the site itself. The character within this LCA is currently defined by the scrub vegetation following the remediation works associated with the former BP oil refinery site and the new housing development to the south eastern boundary of the LCA. Following completion of the development, the character of the landscape will be defined by modern housing development, although the retention of existing boundary vegetation, the implementation of new planting and a management regime are all seen to positively contribute to the landscape character.

A small parcel of land within Crymlyn Bog lies within the proposed development site boundary. Within this area there will be also be effects on landscape character as a result of the implementation of a habitat mitigation area. Consequently, any effects on landscape character are considered to be positive.

From the remainder of the land within Crymlyn Bog and all other surrounding LCAs within the study area, it is predicted that effects on landscape character will not be significant, as the proposed development will be accommodated in to the existing landscape without changing the existing features that currently define its character.

The LVIA assessed the effects of the proposed development on visual amenity from four locations within the 3km study area, which are listed below:

- Drumau Road, Skewen;
- Crymlyn Bog Car Park, Dinam Road, Bon-y-maen;
- Old Road/Wheathely Road, Neath;
- Crymlyn Gardens, Skewen.

During the construction phase of the works that it is anticipated to be from 2025 to 2036, it is predicted that the main effects on visual amenity will be from site activity associated with the development. This will include site compounds, site machinery, including the movement of vehicles/plant/construction workers, silos used for mixing cement, cranes, scaffolding etc.

Construction activity is likely to be most prominent from locations within close proximity to the proposed development site, such as Crymlyn Gardens, where activity on the site will be an immediately apparent feature of view. However, due to the screening from adjacent housing, any views will be restricted to the phase of works associated within the western parts of the site only. Therefore, effects while may be long in duration, they will be temporary and not extend over the full construction period.

Construction activity may also be prominent from the site entrance, where increased vehicle movement into and out of the site will be noticeable and also from elevated locations to the north of Skewen, however due to existing vegetation and built form any views will be glimpsed views only

Following construction works, the assessment concluded that from Crymlyn Gardens, Skewen there will be significant effects on visual amenity. Existing views are however, from a modern housing estate, with views towards the existing housing and also the scrub vegetation of the former BP oil refinery site. Therefore, although effects on visual amenity are predicted to be significant, they are considered to result in a slight positive effect on visual amenity, as views of the derelict industrial land will be replaced by development that is more in keeping with the surrounding landscape.

From the remaining 3 viewpoints effects on visual amenity are considered to be not significant. From these locations it is considered that the proposed development could be visually absorbed together with the existing features that define the view and therefore the overall characteristics of the view will not change.

Climate Change

The construction of the Proposed Development will result in greenhouse gas emissions from the raw materials required, transport and land use changes. The materials used for the buildings make up the largest proportion of construction emissions.

Although the construction emissions represent 0.0005% of the UK's carbon budgets per annum and 0.06% of the Welsh Government's target per annum for which the construction phase

currently spans and which have been set the methodology for the assessment of greenhouse gas emissions assumes that any such emissions are significant.

At this outline design stage there is currently very little construction information to inform GHG emission reduction, as such several recommendations have been given which should inform the next stage of design.

During operation, greenhouse gas emissions will increase primarily from the maintenance and repair of the buildings. For assessment purposes a 60 year period of operation is taken and emissions from the proposed development are assumed to be constant, with no allowance made for technological or regulatory changes (in particular likely moves to use electric vehicles and the decarbonisation of the National Grid). The assessment identifies the operational emissions represent 0.001% of the UK's carbon budgets per annum and 0.029% of the Welsh Government's target per annum for which the operational phase currently spans.

St Modwen have committed to building energy efficiency mitigation that will reduce the energy demand from the electricity grid from 19,916,000kWh (business as usual) to 1,256,000kWh per year. This equates to a reduction in GHG emissions from buildings from 84,085 tCO₂e to 5,303 tCO₂e over the operational lifespan of the Proposed Development.

Where detail is available the Proposed Development has also been designed to be resilient to impacts arising from projected future weather events and climatic conditions such as locating buildings outside of the flood zones and using the flood risk assessment to incorporate climate change into design decisions.

To improve climate change resilience of the Proposed Development in the next stage of design the following assessments are recommended:

As there is a significant amount of time proposed between phases of development there is the potential for climate change risks to occur during construction relating to high temperatures, high precipitation and extreme weather events. These should be considered within a CEMP at the detailed design stage when information becomes available.

A Green Infrastructure Management Plan should be developed to incorporate the requirements of the landscaping, flood attenuation and ecological features.

A detailed CEMP should be completed for each plot of land during detailed design and pre-construction, that considers the existing ground contamination and how to mitigate this risk for the existing occupants and Crymlyn Bog SAC and SSSI.

As the residential dwellings have not been designed yet, it is suggested that these consider the future climate baseline by designing them to adapt to:

- Higher summer temperatures.
- Increased frequency of extreme weather.

- Stronger winds.

Socio-Economics

This chapter considers the socio-economic issues associated with the Scheme and the potential effects that it may have on social infrastructure and the local economy. The socio-economic assessment considers the current (baseline) situation. The assessment reviews potential impact effects, both positive and negative, arising from the Scheme and then identifies, where appropriate, any necessary mitigation measures.

As there are no standard criteria for assessing a receptors sensitivity, this has been determined by using professional judgement and engagement with the LPA. The assessment is objective and quantifies impacts, where possible. Where quantification has not been possible, qualitative assessments have been made and justified.

The baseline is structured around the following subjects. These provide context for the impact assessment: Population demographics; Economic profile; Deprivation; Housing need; Health care infrastructure; Education infrastructure; and Access and availability of open space.

Due to the increase in employment from the Scheme, the GVA anticipated being generated between £3.94 - £5.20 million per annum. In addition, the worker expenditure from on-site jobs is expected to total £0.43 - £0.57 million per annum, which could generate a further 11-13 food and beverage jobs, and 7-9 retail jobs.

The Scheme is expected to deliver 1,134 sq. m of office floorspace. The Neath Port Talbot City Council Economic Assessment and Employment Land Provision Report (2012) estimated an additional need of 12,000 sq. m of office floorspace. Therefore, the Scheme is anticipated to have a moderate beneficial effect in supporting local businesses and high growth sectors.

It was also identified that Neath Port Talbot had a higher unemployment rate than surrounding areas. Thus, the Scheme is anticipated to have a major positive impact on the Neath Port Talbot employment market.

The Proposed Development includes land for the development of a primary school or a through school. Whilst details of this are to be confirmed, this will likely identify the existing shortfall and additional pupils, resulting in a major positive impact on education.

There is no on-site provision of healthcare infrastructure proposed at this stage. While overall, the population arising from the Proposed Development will place pressure upon the existing health care infrastructure, as the baseline conditions suggest that there is existing capacity within GP surgeries. As such, the Proposed Development will likely result in a negligible/minor adverse effect.

The proposed provision of open space and green space is largely in line with, and exceeds, the standards set out in the SPD. Whilst the Proposed Development does not propose any allotments, it is assessed that the quantum of other open and green space types will result in a minor positive effect.

Non-Technical Summary

Coed Darcy



Proposed Mitigation & Residual Effects

Topic	Mitigation measures
Construction Phase	Standard mitigation measures detailed in IAQM Construction Guidance for high risk sites
Operational Phase	Application of good design and good practice measures
Construction Noise	BPM and control measures
Existing noise affecting the new development	Noise bund/barrier screening for plots adjacent the M4 Motorway
Existing noise affecting the new development	Acoustic glazing and ventilation specification for new dwellings
Operational road traffic noise	N/A
Crymlyn Bog SAC/SSSI/ Ramsar, Pant-y-Sais SSSI	CEMP, proposed SuDS design, proposed foul drainage strategy
Crymlyn Burrows SSSI	Dedicated green infrastructure design and habitat creation and management. Provision of CEMP and LEMP

Non-Technical Summary

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Topic	Mitigation measures
Non-statutory designated sites.	CEMP/LEMP
Compacted Clay Soils with a Mosaic of Recolonising Vegetation	Dedicated green infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Wet Grassland and Mixed Scrub	Dedicated green infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Secondary Woodland	Dedicated Green Infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Dense and Scattered Scrub	Dedicated green infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Waterbodies / Ponds	Dedicated Green Infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Ditches	Dedicated Green Infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Rush Pasture	Dedicated Green Infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Railway Embankment	Dedicated green infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Tree Belts / Lines	Dedicated green infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Open Mosaic Habitat	Dedicated green infrastructure design and, habitat creation and management. Provision of CEMP and LEMP
Badger	Construction safeguards within CEMP. Dedicated Green Infrastructure design and, habitat creation and management. Provision of LEMP.

Non-Technical Summary

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Topic	Mitigation measures
Bats	Construction safeguards within CEMP. Precautionary approach to tree felling. Dedicated Green Infrastructure design and, habitat creation and management. Provision of LEMP.
Reptiles	Construction safeguards within CEMP. Dedicated green infrastructure design and, habitat creation and management. Provision of LEMP.
Wintering Birds	Construction safeguards within CEMP. Dedicated Green Infrastructure design and, habitat creation and management. Provision of LEMP.
Breeding Birds	Construction safeguards within CEMP. Precautionary approach to habitat clearance. Dedicated green infrastructure design and, habitat creation and management. Provision of LEMP.
Invertebrates	Construction safeguards within CEMP. Dedicated Green Infrastructure design and, habitat creation and management. Provision of LEMP.
Amphibians	Construction safeguards within CEMP. Dedicated green infrastructure design and, habitat creation and management. Provision of LEMP. NRW licence(s) to be secured in due course.

Non-Technical Summary

Coed Darcy



Topic	Mitigation measures
Otter and Water Vole	Pre-commencement surveys prior to works commencing. Dedicated green infrastructure design and, habitat creation and management. Provision of LEMP.
Other Species	Construction safeguards within CEMP. Dedicated green infrastructure design and, habitat creation and management. Provision of LEMP.

Topic	Residual Impact
Transport & Travel	The assessment has identified that all effects from the Proposed Development are considered to be negligible.
Air Quality	Any adverse effects resulting from the construction works would be minimised such that there would not be any significant residual effect on the existing residential receptors. The operational assessment has shown that the effect on air quality at existing receptors is not expected to be significant.
Noise	There would be no residual temporary or permanent adverse significant effects associated with the Proposed Development
Soils, Hydrogeology & Ground Conditions	Residual permanent effects of minor adverse significance are predicted on geology. Physical effects range from temporary minor adverse to permanent minor beneficial. Permanent effects of neutral significance are generally anticipated during operation, however permanent effects of moderate beneficial significance are anticipated in relation to soil erosion and compaction. Temporary effects of minor adverse to neutral significance are predicted during construction in relation to contamination. Permanent effects associated with contamination ranging from moderate beneficial to neutral significance.

Non-Technical Summary

Coed Darcy



Topic	Residual Impact
Water & Flood Risk	Any impacts likely to arise as part of the construction and operational phase will be negligible or neutral.
Biodiversity	There are predicted to be no adverse residual effects associated with the Proposed Development with most of the identified habitats and species predicted to have a minor positive residual impact.
Landscape & Visual Impact	Any impacts likely to arise as part of the Proposed Development will be neutral or positive.
Climate Change	The Proposed Development will result in an increase of greenhouse gas emissions which will have a significant adverse impact
Socio-Economics	Residual impacts are either minor positive or negligible.