



Baglan Way, Baglan

**Ecological
Appraisal**

Prepared by:
**The Environmental
Dimension
Partnership Ltd**

On behalf of:
Glass Systems Ltd

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Executive Summary

- S1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Glass Systems Ltd (hereafter referred to as 'the Client'), in relation to land at Baglan Way, Port Talbot (hereafter referred to as 'the Application Site'). The proposed development will comprise construction of a glass manufacturing facility with associated access, car park facilities and drainage infrastructure.
- S2 To establish the ecological baseline of the Application Site and subsequently inform a detailed planning application for proposed industrial development, a desk study, Extended Phase 1 Habitat survey, botanical assessment and further detailed surveys for bats, badger (*Meles meles*), common reptiles and terrestrial invertebrates were completed by EDP during 2021.
- S3 With respect to habitats onsite, the Application Site comprises a mosaic of habitat types including plantation woodland, scrub, species-rich neutral and marshy grassland, bare ground and ephemeral/short perennial vegetation. Such habitats, whilst of varying botanical diversity and ecological importance in themselves (negligible to County level importance), contribute to the Panasonic Site of Importance for Nature Conservation (SINC) which covers the entirety of the Application Site and additional land to the south-east. Such habitats are considered suitable for a local bat assemblage, breeding birds, badger, common reptiles, notable mammals and terrestrial invertebrates. With respect to designated sites, the Application Site is located within 3.8km of Crymlyn Bog Ramsar Site and Special Area of Conservation (SAC) 8.5km north-west of Kenfig SAC.
- S4 Accordingly, EDP has contributed to the design of a masterplan assessed by this report. Specific proposals for the avoidance, mitigation and compensation of any predicted impacts include, where possible, the retention, protection and enhancement of those features of ecological importance as far as possible combined with the long-term management of retained habitats predominantly across the southern extents of the Application Site and creation of new habitat features. Further specifications regarding sensitive working methodologies and best working practices during the construction phase should also be incorporated to avoid impacts upon retained habitats and ensure the avoidance of harm/injury and disturbance to protected species present/potentially present.
- S5 Provided those design recommendations detailed within this report in respect of mitigation and sensitive working methodologies are implemented, it is considered that the proposals could proceed lawfully and in line with planning policy requirements whilst maintaining the overall biodiversity interests of the Application Site despite a reduction in extent.

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Section 1

Introduction, Purpose and Context

- 1.1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Glass Systems Ltd (hereafter referred to as 'the Client'), in relation to land at Baglan Way, Port Talbot (hereafter referred to as 'the Application Site').
- 1.2 EDP is an independent environmental planning consultancy with offices in Cirencester, Cardiff and Cheltenham. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website www.edp-uk.co.uk.

Site Context

- 1.3 The Application Site is centred approximately at Ordnance Survey Grid Reference (OSGR) SS 74886 91547, within the Local Planning Authority (LPA) of Neath Port Talbot County Council (NPTCC). Located adjacent to the north-west corner of Baglan Industrial Estate, the Application Site comprises a roughly square brownfield area totalling circa 10.7 hectares (ha) in size. Much of the Application Site has become colonised by a mosaic of habitats including neutral grassland, marshy grassland, scrub and ephemeral/short perennial vegetation. The boundaries of the Application Site are delineated by semi-mature tree lines and scrub/shrub planting. The outer periphery of this vegetation located offsite is characterised by amenity grassland and a mix of native/ornamental hedgerows.
- 1.4 The northern and western boundaries of the Application Site are delineated by Baglan Way and Moor Road respectively. The eastern boundary is bordered by an industrial unit whilst the southern boundary is bordered by an extension of Moor Road with a school and residential housing beyond.
- 1.5 The Application Site is located within the settlement of Baglan. The M4 motorway lies circa 40m to the north whilst the wider landscape to the south, east and west is characterised by residential, commercial and industrial development.
- 1.6 The location and extents of the Application Site are illustrated at **Plans EDP 1 - 3**.

Development Proposals

- 1.7 In brief, development will comprise construction of a glass manufacturing facility with associated access, car park facilities and drainage infrastructure. A Proposed Site Layout is provided at **Appendix EDP 1** whilst a Detailed Soft Landscape Design is provided at **Appendix EDP 2**.

1.8 To inform the detailed planning application for the Application Site, this Ecological Appraisal describes the current ecological interest within and around the Application Site, which has been identified through standard desk- and field-based investigations. This Ecological Appraisal then considers the potential ecological impacts and opportunities for ecological enhancement based on the masterplan for the Application Site, in the context of relevant legislation and planning policy. Finally, this assessment identifies likely necessary measures to avoid, mitigate or provide compensation for potential ecological impacts.

1.9 The remainder of this report is structured as follows:

- **Section 2** summarises the methodology employed in determining the baseline ecological conditions within and around the Application Site (with further details provided within Appendices and on Plans where appropriate);
- **Section 3** summarises the baseline ecological conditions (with further details also provided within Appendices and on Plans where appropriate) and identifies and evaluates any pertinent ecological features/receptors;
- **Section 4** describes the development proposals, how the design has been influenced by ecological factors, EDP input to the design process and key components of inherent mitigation;
- **Section 5** considers the potential impacts of the proposal on pertinent ecological features in the context of legislative, planning policy and biodiversity action planning considerations. Recommended mitigation and enhancement measures are provided for the current and possible future planning stages; and
- **Section 6** summarises the inherent and recommended additional mitigation measures and provides the overall conclusions of the Appraisal.

Section 2

Methodology (Baseline Investigations)

- 2.1 This section of the Ecological Appraisal summarises the methodologies employed in determining the baseline ecological conditions within and around the Application Site. The appraisal has been undertaken by appropriately qualified ecologists using relevant best practice methodologies wherever possible. Reasons for any departure from best practice methodology are given and normally relate to the timing of EDP's commission and/or the availability of access to parts of the site or wider study area. Full details of the techniques and process adopted are, where appropriate, provided within Appendices and on Plans to the rear of this report.

Desk Study

- 2.2 The desk study is an important element of establishing the ecological baseline of a site proposed for development, enabling the initial collation and review of contextual information, such as designated sites, together with known records of protected and priority species¹.
- 2.3 A desk study was undertaken by EDP during July 2021 and involved collating biodiversity information from the following sources:
- South East Wales Biodiversity Records Centre (SEWBRc); and
 - Multi-Agency Geographic Information for the Countryside (MAGIC) website².
- 2.4 The desk study involved obtaining the following information:
- International statutory designations (10km radius around the Application Site);
 - National statutory designations (2km radius);
 - Non-statutory local sites (2km radius);
 - Annex II bat species³ records (6km radius); and
 - All other protected/notable species records (2km radius).

¹ Species of Principal Importance for the purpose of maintaining and enhancing biodiversity in Wales, as listed under Section 7 of the Environment (Wales) Act 2016.

² www.magic.gov.uk

³ Bat species listed in Annex II of the EC Habitats Directive, namely greater horseshoe, lesser horseshoe, barbastelle and Bechstein's bats.

- 2.5 The above listed search areas are considered sufficient to cover the potential zones of influence⁴ of the proposed development in relation to designated sites, habitats and species.

Pre-app Consultation

- 2.6 In addition to the above, a pre-application meeting was held with Neath Port Talbot Council on 14 December 2021. During the meeting the Planning Officer, Kathryn Williams gave comments regarding ecology and following on from this, liaison with Laura Palmer, the Biodiversity Officer at Neath Port Talbot Council, was undertaken regarding the scope of the surveys undertaken at the Application Site, and the provisions regarding mitigation of the loss of the Site of Importance for Nature Conservation (SINC).
- 2.7 Full copies of the aforementioned meeting notes, pre-app advice and follow up correspondence are enclosed within **Appendix EDP 3**.

Extended Phase 1 survey

- 2.8 The Extended Phase 1 survey was undertaken by a suitably experienced ecologist on 14 June 2021, during which the weather was dry, 22°C with no wind and 40% cloud cover.
- 2.9 The survey technique adopted for the habitat assessment was at a level intermediate between a standard Phase 1 survey technique⁵, based on habitat mapping and description, and a Phase 2 survey, based on detailed habitat and species surveys. The survey technique is commonly known as an Extended Phase 1 survey. This level of survey does not aim to compile a complete floral and faunal inventory for the Application Site.
- 2.10 The level of survey involves identifying and mapping the principal habitat types and identifying the dominant plant species present in each principal habitat type. In addition, any actual or potential protected species are identified and scoped. Further details are provided at **Appendix EDP 4**.

Detailed (Phase 2) Surveys

- 2.11 The scope of Phase 2 Surveys undertaken within the Application Site was defined following the initial studies described above (desk study and Extended Phase 1 survey).
- 2.12 The surveys 'scoped in' based upon the findings of the Extended Phase 1 survey are summarised in turn below, with reference to sources of further detailed information where applicable.

⁴ Zone of Influence - the areas and resources that may be affected by the proposed development.

⁵ Joint Nature Conservation Council (2004) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (reprinted with minor corrections for original Nature Conservancy Council publication).

Detailed Botanical Survey

- 2.13 Given the presence of species-rich habitats identified during the Extended Phase 1 survey combined with the Application Site's designation as a Site of Importance for Nature Conservation (SINC), a botanical assessment of those habitats was undertaken on 31 August 2021 to provide a more robust assessment of their botanical diversity and condition. Further details of the methodologies employed are provided at **Appendix EDP 4**.

Bat Surveys

- 2.14 A number of habitats present within the Application Site, including mature trees, plantation woodland and grassland were identified as having the potential to support foraging and commuting bats. The following surveys for bats were undertaken with reference to national best practice guidelines⁶:

1. Bat Roosting:
 - a) Visual assessments of mature trees for bat roosting potential.
2. Bat Foraging/Commuting Activity:
 - a) Manual transect surveys; and
 - b) Automated detector surveys.

- 2.15 Full details of survey effort undertaken with respect to roosting and commuting/foraging bats are provided in **Appendix EDP 5**.

Badger Survey

- 2.16 Badger activity within the Application Site was recorded during the Extended Phase 1 survey on 14 June 2021. During the survey, any signs of badger activity such as holes, latrines, trails, snuffle holes and hairs on fencing or vegetation were recorded. Where holes of a size and shape consistent with badgers were identified, the following signs of badger activity were searched for in order to determine whether they were currently in use:

- Fresh spoil outside entrances;
- Bedding material (typically dried grass) outside entrances;
- Holes being cleared of leaf litter/other debris;

⁶ Collins, J. (ed.) (2016). *Bat Surveys: for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conservation Trust, London

- Badger guard hairs; and
- Fresh tracks leading to/from the holes.

Limitations

- 2.17 Badger surveys can be undertaken at any time of year and are, therefore, not limited by seasonal or climatic factors.
- 2.18 Dense scrub around the peripheries of the Application Site precluded a thorough search for badger such that evidence of this species may have been missed in these areas. Nevertheless, the majority of the Application Site was accessible such that some evidence of mammal presence including mammal paths and foraging pits would have been identified, if present.

Reptile Surveys

- 2.19 Areas of scrub and grassland habitat across the Application Site provide potential basking, foraging, dispersal and hibernation opportunities for common and widespread species of reptile, although existing development surrounding the Application Site is considered a barrier to dispersal of this species between the site and suitable habitat within the wider landscape.
- 2.20 To confirm the presence or likely absence of common reptile species and the extent of their usage of the Application Site, refugia-based reptile surveys were undertaken throughout the Application Site between August and October 2021. Full details of the methodologies employed are provided at **Appendix EDP 6**.

Invertebrate Surveys

- 2.21 Invertebrate surveys of the Application Site were undertaken on two occasions during 2021 - 24 August and 8 September by an experienced entomologist on behalf of EDP. Each survey was conducted during dry and sunny conditions, when invertebrates are generally most active, particularly pollinating insects. Terrestrial invertebrates were sampled using several different active sampling techniques including:
- Aerial netting – a lightweight 40cm diameter net mounted on a meter long pole was used to catch flying insects as and when encountered;
 - Beating – a white sheet is held/placed below branches of a bush or tree. Then a suitable stick or pole used to tap the branches to dislodge invertebrates onto the white sheet. Target invertebrates are then selectively removed using an aspirator;
 - Hand searching – this involved sieving plant litter, looking under stones, debris etc. for invertebrates that may be feeding, resting or sheltering;
 - Suction-sampling (i.e. vacuum sampling) – a modified leaf-blower was used to collect invertebrates from habitats that would otherwise be difficult to sample from using a

sweep net (e.g. very short or very long vegetation). This method is particularly effective at catching species which do not fly readily, or which live in deep vegetation. Samples were emptied into a large white tray and target taxa selectively removed using an aspirator;

- Sweep netting – a sturdy 40cm diameter net mounted on a meter long pole was moved vigorously through long vegetation to dislodge invertebrates. Target invertebrates were then selectively removed from the sweep net using an aspirator; and
- Visual searching – insects were observed foraging, basking, nesting, hunting, mating etc. in their associated habitats without the need to deploy other sampling techniques.

2.22 Full details of the methodologies employed are provided at **Appendix EDP 7**.

Surveys Scoped Out

2.23 **Table EDP 2.1** summarises other survey types which, while commonly required as part of an Ecological Appraisal for development sites, were not considered necessary/appropriate in this case.

Table EDP 2.1: Ecology surveys scoped out.

Survey Type	Reasons for Scoping Out
Breeding Birds	Plantation woodland and dense scrub offers suitable habitat for a breeding bird assemblage likely to comprise generalist and widespread species. Grassland habitat is of further potential value for ground nesting species but is considered unlikely to support notable populations given the relatively small size of the Application Site and prevalence of tall tree lines and buildings immediately adjacent, in addition to disturbance from unsympathetic public access, which would deter many ground nesting species. No further survey is, therefore, proposed. Instead, precautionary measures of clearance during the pre-construction phases of future development are instead proposed, to ensure no harm/disturbance to nesting birds potentially present.
Dormouse (<i>Muscardinus avellanarius</i>)	No records of this species were identified during the desk study. Although plantation woodland provides suitable habitat of value as a breeding, hibernation and foraging resource, the Application Site is fragmented from suitable habitat in the wider landscape by main roads and existing development. This species is thus presumed absent from the Application Site and no further survey is proposed.
Otter (<i>Lutra lutra</i>)/Water Vole (<i>Arvicola amphibius</i>)	No suitable habitat for either species was identified within or adjacent to the Application Site such that both otter and water vole are presumed absent.

Survey Type	Reasons for Scoping Out
Great Crested Newt (<i>Triturus cristatus</i>)	No records for great crested newt were returned during the desk study whilst there are no waterbodies onsite. Main roads and existing residential development which borders the Application Site is considered a significant barrier to dispersal of great crested newt between the Application Site and any suitable breeding ponds located within the immediate landscape. Of further note, Neath Port Talbot and Swansea are located at the edge of this species range within the UK. This species is therefore presumed absent from the Application Site.

Section 3

Results (Baseline Conditions)

- 3.1 This section of the Ecological Appraisal summarises the baseline ecological conditions determined through the course of desk-based and field-based investigations described in **Section 2**. In particular, this section identifies and evaluates those ecological features/receptors that lie within the Application Site's potential zone of influence, and which are pertinent in the context of the proposed development. Further technical details are, where appropriate, provided within Appendices and on Plans to the rear of this report.

Designated Sites

- 3.2 Information regarding designated sites was obtained during the desk study from the MAGIC website and local records centre (SEWBRc). Statutory designations (those receiving legal protection) and non-statutory designations (those receiving planning policy protection only) are discussed in turn below.

Statutory Designations

- 3.3 Statutory designations represent the most significant ecological receptors, being of recognised importance at an international and/or national level. International designations include Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites. National designations include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs).
- 3.4 No part of the Application Site is covered by any statutory designations. However, there are two such designations within the Application Site's potential zone of influence, as summarised in **Table EDP 3.1** and illustrated at **Plan EDP 1**.

Table EDP 3.1: Statutory designations within the Application Site's potential zone of influence.

Designation	Distance from Application Site	Interest Feature(s)
Crymlyn Bog Ramsar Site & SAC	3.8km north-west	Largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain. The site supports a substantial population of the nationally-rare slender cotton-grass (<i>Eriophorum gracile</i>), 199 vascular plant species including 17 regionally-uncommon and one nationally rare and a rich invertebrate fauna including many rare and highly localised species.
Kenfig SAC	8.5km south-east	SAC supporting a diverse range of Annex I habitats including humid dune slacks, fixed coastal dunes with herbaceous vegetation, dunes with <i>Salix repens</i> spp. <i>argentea</i> , and hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. The SAC also supports Atlantic salt meadows. Kenfig is one of two sites selected for petalwort (<i>Petalophyllum ralfsii</i>) in south Wales and also supports large populations of fen orchid (<i>Liparis loeselii</i>).

Non-Statutory Designations

- 3.5 Non-statutory designations are also commonly referred to in planning policies as 'local sites', although in fact these designations are typically considered to be of importance at a county level. In Neath Port Talbot, such designations are named Sites of Importance for Nature Conservation (SINCs). Additional designated sites which should be considered at this level include Ancient Semi Natural Woodland (ASNW), where these are not covered by other designations.
- 3.6 Panasonic SINC, designated for post-industrial habitats, encompasses the Application Site in its entirety. In addition, there are several non-statutory designations within the Application Site's potential zone of influence. A summary is provided **Table EDP 3.2**, with locations illustrated at **Plan EDP 2**.
- 3.7 Several occurrences of ASNW units were returned during the desk study. All units were, however, located north of the Application Site beyond the M4 motorway.

Table EDP 3.2: Non-statutory designations within the Application Site's potential zone of influence.

Designation	Distance from Application Site	Interest Feature(s)
Panasonic	Onsite	An area of post-industrial land adjacent to and south of the M4 at Baglan. The site supports a mosaic of various habitats, including scrub communities, neutral grassland, fen, reedbed and ponds. The site previously supported breeding lapwing (<i>Vanellus vanellus</i>) and continues to support a variety of bird species.
Baglan Wildlife Trust Reserve	731m north-east	No information available.
Baglan Brownfield Slack SINC	741m north-west	An area of former sand fields overlain by crushed industrial base-rich slag, parts of which are subject to winter flooding. The vegetation is very diverse and includes a rich suite of sand dune species with several rare and scarce taxa. The site supports the counties only extant colony of hook-beak tufa-moss (<i>Hymenostylium recurvirostrum</i>), which is abundant over approximately 1500 square metres. Distant sedge (<i>Carex distans</i>) is present which is a primary species. Recorded taxa include 76 vascular plants, 13 bryophytes, 20 birds and 3 invertebrates.
Jaffa Land Baglan SINC	865m north-west	A brownfield area of open mosaic habitat which is succeeding rapidly towards birch (<i>Betula</i> sp.)/willow (<i>Salix</i> sp.) scrub. A small population of Deptord Pink (<i>Dianthus armeria</i>) occurs in an area of coarse grassland (MG1) near the northern perimeter fence. Central areas support some interesting wet habitat with brown sedge (<i>Carex brunnescens</i>) and distant sedge, both of which are local and scarce in South Wales. These communities may represent fragments of the much larger area of wetland communities of Baglan Moor that once existed here. A patch of the nationally scarce moss inclined dischtium occurs in the vicinity of some hard standing ground near the eastern perimeter.
Baglan Penhandle SINC	887m west	An area of remnant dune on the coastal plain, lying between the former BP site at Baglan and the Sandfields Estate. The soils comprise blown sands from the Quarternary Period, with a few patches of modern disturbance and slag deposition. Brown banded carder bee (<i>Bombus humilis</i>) is known from this site.

Designation	Distance from Application Site	Interest Feature(s)
Marden Park Baglan SINC	1.1km north-west	The site mainly comprises a mosaic of secondary post-industrial habitats which have developed on the cleared and levelled substrate of gravelly crushed hardcore and sand. All of the open post-industrial habitats of the site meet the guidelines for SINC designation through the presence of 3 priority plant species (threshold is 1) and 7 contributory species (threshold is 5) and under the guidelines for Open Mosaic Habitats on Previously Developed Land.
Triangular Pond	1.2km north-west	A man-made pond, triangular in shape, with steep re-enforced sides, scored high in the National Pond Survey. Some emergent vegetation with occasional trees around the bank. Thin soils on the bank edge support Deptford pink and twiggly mullein (<i>Verbascum virgatum</i>).
Baglan Bay	1.6km south-west	Baglan Bay is a large expanse of mobile dune system and saltmarsh adjacent to heavily contaminated post-industrial land which is subject to remediation and regeneration. Baglan Bay is thought to be the location of the first recorded <i>Matthiola sinuata</i> plant, back in 1773. The site also includes an area of previously developed land managed for one of the largest populations of lapwing in Wales.
The Quays Car Park Bunds	1.9km north-west	Small area of previously developed land and a mitigation bund with a range of pioneering and neutral/calcareous grassland plants. Small blue butterflies (<i>Cupido minimus</i>) and brown-banded carder bees are present and a feature of the SINC. Birds such as linnets (<i>Carduelis cannabina</i>) feed in the taller plants. One vascular plant primary species - wild liquorice (<i>Astragalus glycyphyllos</i>), and 2 contributory species - hoary plantain (<i>Plantago media</i>) and viper's bugloss (<i>Echium vulgare</i>) are also present.
Neath Port Talbot (NPT) Watercourses	Multiple locations	Generic designation covering all watercourses that retain a generally natural form (i.e. not culverted etc.) in NPT. Mapping available from SEWBrEC illustrates this as a blanket cover designation across the County.

Habitats

- 3.8 Information on habitats within and around the Application Site was obtained during the Desk Study, Extended Phase 1 survey and subsequent, detailed botanical survey of grassland habitats.
- 3.9 The distribution of different habitat types within and adjacent to the Application Site is illustrated at **Plan EDP 3** and further described at **Appendix EDP 4** alongside illustrative photographs and a species list. A summary and qualitative assessment of these habitats is provided in **Table EDP 3.3** below.

Habitat Overview and Assessment against SINC Criteria

- 3.10 The five habitat types present within the Application Site, which have been assessed against the 'Guidelines for the Selection of Local Sites in Wales' (GSLSW) prepared by the Wales Biodiversity Partnership⁷, and a description of qualifying criteria for designation as a SINC, are provided below:
- Marshy Grassland: 26 indicator species in total. The GSLSW requires that a minimum of 12 indicator species are required to consider Marshy Grassland as a candidate for SINC status;
 - Neutral Grassland: 18 indicator species. The GSLSW requires that species-rich Neutral Grassland be considered a candidate for SINC status;
 - Calcareous Grassland: 19 indicator species in total of which 11 are shared Neutral Grassland Indicators. The GSLSW requires a minimum of 8 species to consider a Calcareous Grassland to be a candidate for SINC status; and
 - Previously Developed Land: 5 characteristic species in total. The SINC guidance handbook doesn't give a minimum threshold number of Previously Developed Land characteristic species required *per se*, however, it does state that the following sites should be considered for selection:

"It is considered that substantive nature conservation value can be demonstrated, and thus the site is eligible for Wildlife Site selection, if 20 or more plant species from the combined lists of grassland species (Tables 3-5) and the following list of characteristic (but not ubiquitous) additional species in Table 7 are present."
- 3.11 In addition to the above, the notable plant brookweed (*Samolus valerandi*) is also present here but is not used as an indicator for any important habitat in the SINC guidance handbook.

⁷ Wales Biodiversity Partnership (2008). Guidelines for the Selection of Local Sites in Wales. Available at: <https://www.biodiversitywales.org.uk/File/53/en-GB>. [Accessed on 10 January 2022].

- 3.12 As such, the Application Site continues to qualify as a SINC, designated under its Previously Developed Land status or as Marshy Grassland or Neutral Grassland as these latter two habitats are extensive across the Application Site and are frequently recorded here together as mosaic habitat.
- 3.13 The Application Site also supports sufficient indicator species to be designated as calcareous grassland. However, calcareous grassland is primarily recorded in one small area in the north of the Application Site and thus is not a realistic habitat to use with regard to assessing the whole botanical value of this SINC. The calcareous grassland recorded here is likely to be present over a substrate of crushed cement or other lime-rich anthropogenic material.
- 3.14 The extensive area of cut scrub in the centre of the Application Site suggests that scrub encroachment onto this site is considerable, and particularly so in those (particularly damp) areas where many of the notable plant species are recorded. The most species-rich areas are, therefore, highly susceptible to being lost to scrub invasion should management here cease. It is also possible that without management, common reed (*Phragmites australis*) present onsite will form dense stands at the expense of the species-rich plant assemblage currently present.

Table EDP 3.3: Summary of habitats within the Application Site.

Habitat or Feature	Distribution within Application Site	Intrinsic Ecological Value
Broadleaved Plantation Woodland	Northern, southern and western boundaries.	Site – low distinctiveness and diversity.
Dense and Scattered Scrub	Scattered across Application Site and in association with margins.	Site – small extent and low distinctiveness.
Semi-improved Grassland	Forms a mosaic with marshy grassland across the Application Site.	County – botanically species-rich and designated as a SINC.
Marshy Grassland	Forms a mosaic with semi-improved grassland across the Application Site.	County – botanically species-rich and designated as a SINC.
Ephemeral/Short Perennial Vegetation	Predominantly in association with areas of bare ground.	Negligible – owing to limited extent and diversity.
Tall Ruderal	In association with each habitat.	Negligible – low distinctiveness and diversity.

Protected and/or Notable Species

- 3.15 The likelihood of presence, or confirmed presence, of protected/and or notable wildlife species within the Application Site is summarised below, with reference to desk study records, habitat suitability and detailed surveys where relevant. Further details are made available within the Appendices and Plans where referenced.
- 3.16 Where a particular species or taxonomic group has been confirmed to be present, or presence is inferred based on habitat suitability, the ecological value or significance of the population or assemblage is assessed on a geographical scale.

Breeding Birds

- 3.17 SEWBRc returned several records of bird species within 2km of the Application Site including those listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), and/or the Birds of Conservation Concern (BoCC) red/amber list⁸.
- 3.18 Records for Schedule 1 species include merlin (*Falco colanbarius*), Mediterranean gull (*Ichthyaetus melanocephalus*), little gull (*Hydrocoloeus minutus*), little ringed plover (*Charadrias dubius*), kingfisher (*Alcedo atthis*), black redstart (*Phoenicurus ochruros*), peregrine falcon (*Falco peregrinus*), barn owl (*Tyto alba*), common firecrest (*Regulus ignicapilla*), snow bunting (*Plectrophenax nivalis*), crossbill (*Loxia curvirostra*), Cetti's warbler (*Cettia cetti*), brambling (*Fringilla montofringilla*) and goshawk (*Accipiter gentilis*) amongst others.
- 3.19 Of pertinence to the Application Site in particular the following records for red listed bird species were returned: lapwing (*Vanellus vanellus*), herring gull (*Larus argentatus*), linnet (*Linaria cannabina*), greenfinch (*Chloris chloris*), skylark (*Alauda arvensis*), mistle thrush (*Turdus viscivorus*) and starling (*Sturnus vulgaris*).
- 3.20 Desk study records of amber listed species returned from within the Application Site include: black-headed gull (*Chroicocephalus ridibundus*), willow warbler (*Phylloscopus trochilus*), whitethroat (*Sylvia communis*), lesser black-backed gull (*Larus fuscus*), song thrush (*Turdus philomelos*), common gull (*Larus canus*), dunnoek (*Prunella modularis*), common reed bunting (*Emberiza schoeniclus*), meadow pipit (*Anthus pratensis*) and snipe (*Gallinago gallinago*).
- 3.21 Dense shrub and semi-mature trees bounding the Application Site have the potential to support nesting birds including garden variety and woodland species, whilst grassland habitat across the Application Site provides suitable vegetation for ground nesting birds in addition to foraging habitat more generally.
- 3.22 Variable vegetation cover and proximity of tall tree lines and buildings adjacent to the Application Site, in addition to encroaching scrub across grassland and ephemeral habitats would, however, serve as some deterrent to the establishment of a significant population of ground nesting birds which typically rely on large expanses of open habitat devoid of vertical features which would otherwise attract predators.
- 3.23 Of further note, an Extended Phase 1 survey of the Application Site noted evidence of motorbike scrambling and informal access in parts of the Application Site, disturbance from which would similarly deter ground nesting birds from establishing nests. No evidence of ground nesting birds was identified during the Extended Phase 1 survey. The

⁸ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747. Available online at <https://britishbirds.co.uk/content/status-our-bird-populations>.

bird assemblage supported by the Application Site is considered to be of likely **Local** level importance.

Bats

- 3.24 SEWBRc returned multiple records of bat species within 2km of the Application Site including records for brown long-eared bat (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygaemus*), Daubenton's (*Myotis daubentonii*), Natterer's (*Myotis nattereri*), noctule (*Nyctalus noctula*), whiskered (*Myotis mystacinus*) and *Myotis* sp. bats.
- 3.25 A desk study also returned records for several roosts of common pipistrelle, noctule, soprano pipistrelle, long-eared and Natterer's bat, the closest of which was a pipistrelle roost approximately 150m north of the Application Site.
- 3.26 Records for Annex II species were limited to lesser horseshoe bat (*Rhinolophus hipposideros*), including foraging/commuting individuals and several roosts comprising low numbers of this species, the closest within 3.5km of the Application Site.

Investigations of Bat Roosting - Trees

- 3.27 With respect to semi-mature and mature trees present in association with the Application Site boundaries, no trees with suitable bat roosting features were identified during the ground level bat roost inspection. No buildings or structures are present within the Application Site. The Application Site is thus considered to be of negligible importance for roosting bats.

Investigations of Bat Foraging/Commuting Activity

- 3.28 With respect to foraging and commuting bats, tree line boundaries provide suitable linear features for commuting bats whilst grassland habitat across the Application Site provide a suitable foraging resource. The Application Site is, however, delineated by main roads and existing commercial and residential development subject to frequent disturbance and lighting, likely to deter a significant bat assemblage. Highways planting along the M4 corridor circa 40m north does, however, provide some connectivity between the Application Site and suitable habitat within the wider landscape.
- 3.29 Full details of bat foraging and commuting activity recorded during the transect and automated detector surveys undertaken between July 2021 and September 2021 are provided within **Appendix EDP 5**.
- 3.30 A minimum of four bat species/species groups (Myotis bat species were not identified to species level), were confirmed to be present foraging and/or commuting within the Application Site during the course of the automated detector surveys. During the automated detector surveys, the vast majority of recorded behaviour (average 83.9% of recordings) related to common pipistrelle bat whilst soprano pipistrelle accounted for

14.9% of all anabat recordings. Other species representing less than 1% of automated detector recordings include noctule and Myotis species.

- 3.31 Only three species of bat were confirmed to be foraging and/or commuting within the Application Site during the course of the manual transect surveys undertaken between July and September 2021. The low levels of bat activity recorded were dominated by common pipistrelle with occasional registrations of soprano pipistrelle bat. A single registration for Nathusius' pipistrelle was recorded during September 2021.
- 3.32 Overall, the low levels of bat activity recorded across the Application Site are considered typical for what is predominantly an urbanised area of Port Talbot. Based on results of the manual bat transect and automated detector surveys, the overall bat population supported by the Application Site is considered to be of **Site** level importance.

Badger

- 3.33 Several records of badger were returned by SEWBReC during the desk study, predominantly road kills along the M4 motorway.
- 3.34 No badger setts or evidence of this species was recorded onsite during the Extended Phase 1 survey. Grassland habitat and dense scrub does, however, provide suitable foraging and sett building habitat for badger such that this species may pass through the Application Site or colonise the Application Site in future. In the current absence of any active badger setts, this species is considered to be of no more than **Site** level importance.

Dormouse

- 3.35 During the desk study, no records for dormouse were returned within 2km of the Application Site. Dense scrub and treelines around the peripheries of the Application Site provide some suitable, albeit limited, habitat for this species. The Application Site is, however, fragmented from suitable habitat within the wider landscape whilst main roads (including the M4 motorway) and residential housing is considered a significant barrier to the dispersal of this species. Dormouse is thus considered absent from the Application Site.

Otter and Water Vole

- 3.36 Several records for otter were returned during the desk study, the majority of which are road mortalities along the M4 corridor whilst remaining records were associated with the River Afan circa 2km east of the Application Site. A single record for water vole dating from 2002 was returned in association with Margam Forest circa 1.6km north-east of the Application Site.
- 3.37 No suitable waterbodies are present onsite or adjacent to the Application Site, whilst main roads and existing residential development is considered a barrier to dispersal such that both species are considered to be absent from the Application Site.

Great Crested Newt

- 3.38 No records for great crested newt were returned during the desk study within 2km from the Application Site. Records were, however, returned for palmate newt (*Lissotriton helveticus*), the closest within 1km, with records for common toad (*Bufo bufo*) also returned within 500m. Records for common frog (*Rana temporaria*) were returned for the Application Site itself.
- 3.39 No waterbodies are present within the Application Site. A single waterbody was recorded in association with Baglan Industrial Estate, circa 315m south-east of the Application Site whilst a land drain lies parallel to the M4 motorway and receives surface water runoff from this road.
- 3.40 Terrestrial habitats within the Application Site, comprising dense scrub, tree lines and species-rich grassland are considered optimal habitat for great crested newts (and other amphibians). Nevertheless, main roads and existing residential development which borders the Application Site is considered a significant barrier to dispersal of great crested newt between the Application Site and any suitable breeding ponds located within the immediate landscape. Of further note, Neath Port Talbot and Swansea are located at the edge of this species range within the UK. Combined with the absence of desk study records, this species is presumed absent from the Application Site.

Common Reptiles

- 3.41 SEWBRc returned several records for slow-worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*), the majority recorded along the A4286 circa 430m south of the Application Site. This is in addition to a single record for adder (*Vipera berus*), circa 1.8km east.
- 3.42 Dense scrub, boundary tree lines and species-rich grassland is considered optimal habitat for common reptiles, whilst populations of common lizard and slow-worm are known to occur in the wider landscape.
- 3.43 Reptile surveys of the Application Site confirmed the presence of slow-worm within the Application Site. A peak survey count of three slow-worm was recorded on the third, fifth, sixth and ninth reptile survey visit, indicating the presence of a low common reptile population supported by the Application Site. Full survey results are provided within **Appendix EDP 5** and illustrated on **Plan EDP 5**.
- 3.44 In respect of the low population, combined with limited suitable habitat in immediate landscape and the absence of connectivity between the Application Site and suitable offsite habitat, the Application Site is therefore considered to be of **Local** level importance for reptiles.

Invertebrates

- 3.45 The desk study returned a large number of records for invertebrates with the majority relating to non-statutory designations in the wider landscape as well as Baglan Moors to the south of the Application Site. Several records of small blue, a species listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) were returned. This is in addition to the following red data species: small heath (*Coenonympha pamphilus*), wall (*Lasiommata megera*), dingby skipper (*Ernnis tages*), grayling (*Hipparchia semele*) and shrill carder bee (*Bombus sylvarum*). The following records were also returned for the Application Site itself: *Rugilis siilis*, *Chartoscirta cocksii* and *Ishnura pumilio*. Such species are typically associated with wetland habitats and thus likely favour areas of waterlogged ground across the northern and southern extents of the Application Site.
- 3.46 Species-rich grassland across the Application Site is noted for its suitability to support populations of various invertebrate species including those of local importance and which have been identified within the wider landscape. Although the Application Site is relatively homogeneous in terms of its topography, the mosaic of habitats and variable grassland structure across the Application Site is likely to offer diverse opportunities to a local assemblage. Indeed, a total of 211 invertebrate species were identified during the surveys of the Application Site completed in August and September 2021. As anticipated (being the target groups), Araneae (spiders), Coleoptera (beetles) and Hemiptera (true bugs) were fairly well represented with a total of 25 species, 57 species and 42 species recorded respectively. However, fewer Hymenoptera (bees, wasps and ants) were encountered than what would have been expected given the flower-rich conditions (17 species); this is probably explained by the absence of sampling during the spring period, during which time most ground-nesting solitary bees are active.
- 3.47 Of the 211 invertebrate species recorded, 31 (~15 %) are deemed to be of 'conservation interest' (i.e. species considered to be Nationally Local, Scarce or Rare, and/or are listed under Section 7 of the Environment (Wales) Act 2016 as species of 'principal importance for the conservation of biological diversity in Wales'. Full lists of those species identified are provided within **Appendix EDP 7**, alongside accounts concerning distribution and habitat requirements of those species of conservation concern.
- 3.48 Of particular interest, the broken-belted bumblebee (*Bombus soroeensis*) was identified within flower-rich areas comprising the Application Site during survey effort. A nationally local species, its populations have declined over recent years although it is not currently considered scarce or threatened.
- 3.49 Given the respectable diversity identified during the survey effort, it is considered that the Application Site provides important habitat for a number of scarce and local invertebrate species as well as suitable habitat for a wide range of widespread invertebrate species more generally. Species identified were noted to have diverse habitat associations which include: arboreal, brackish pools and ditches, marshland, decaying wood, lake, peatland, shaded woodland floor, short sward and bare ground and tall sward and scrub. As such, the Application Site is considered to be of vice-county importance for invertebrates, and potentially of greater importance for broken-belted bumblebee.

Other Species Potentially Supported

- 3.50 Records of other species within 2km of the Application Site include a record for weasel (*Mustela nivalis*), stoat (*Mustela erminea*) and harvest mouse (*Micromys minutus*). A large number of records were also returned for European hedgehog (*Erinaceus europaeus*) and brown hare (*Lepus europaeus*) from within 2km of the Application Site. Boundary features including scrub and semi-mature tree lines provide suitable cover and foraging habitat for weasel, stoat and hedgehog. Grassland also provides suitable habitat for brown hare but given the small extent of the Application Site in respect of this species and relative isolation from large areas of suitable habitat in the wider landscape, brown hare is considered likely absent from the Application Site.

Notable Plant Species

- 3.51 With respect to notable plant species, the desk study returned records for several species of notable plants from within 2km of the Application Site, including basil thyme (*Clinopodium acinos*), prickly saltwort (*Salsola kali* subsp.), sea stock (*Matthiola sinuate*) and cornflower (*Centaurea cyanus*), all red data book species associated with Baglan Burrows, circa 700m west of the Application Site. Additional records for red data species within 2km of the Application Site include roof plait moss (*Hypnum cupressiforme*), bent crisp moss (*Tortella inclinata*), charlock (*Sinapsis arvensis*), flowering rush (*Butomus umbellatus*), sharp rush (*Juncus acutus*), heath dog-violet (*Viola canina*) and eyebright (*Euphrasia* sp.). This is in addition to records for Deptford pink (*Dianthus armeria*) and bluebell (*Hyacinthoides non-scripta*), both listed under Schedule 8 of the Wildlife and Countryside Act (1981, as amended). There are additionally records for the following species within the Application Site: yellow starry feather moss (*Campylium stellatum*), common feather moss (*Kindbergia prelonga*), swamp feather moss (*Amblyegium radicale*) and Nicholson's beard-moss (*Didymodon nicholsonii*) comprising locally important species and/or red data species of least concern.
- 3.52 The desk study also included several invasive non-native species listed under Schedule 9 of the Countryside Act (1982, as amended) including wall cotoneaster (*Cotoneaster horizontalis*) and Himalayan cotoneaster (*Cotoneaster simonsii*) records of which were returned for the Application Site. Indeed, varieties of cotoneaster were identified onsite during the Extended Phase 1 survey.
- 3.53 A botanical assessment for grassland areas inherent within the Application Site was undertaken during August 2021, the results of which are provided at **Appendix EDP 4**. Occurrences of notable species were limited to the uncommon brookweed. Bryophyte species were predominantly recorded in association with marshy grassland habitat particularly where common reed was dominant, albeit a community was species-poor and dominated by spear moss (*Calliergonella cordifolium*). Given the post-industrial nature of the site subject to previous disturbance, presence and establishment of a diverse and significant bryophyte community is considered unlikely although small pockets of those species which favour conditions provided by contaminated/post-industrial land may occur.

Summary of Key Issues Arising from Survey Findings

- 3.54 Based on the survey findings described above, the key ecological features/receptors pertinent to the development proposals are set out in **Table EDP 3.4**.

Table EDP 3.4: Key ecological features pertinent to the development proposals.

Important Ecological Feature	Key Attributes	Nature Conservation Value
Designated Sites		
Crymlyn Bog Ramsar Site & SAC	Located 3.8km north-west of the Application Site, this is the largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain.	International
Kenfig SAC	Located 8.5km south-east of the Application Site, this SAC supports a diverse range of Annex I habitats including humid dune slacks, fixed coastal dunes with herbaceous vegetation, dunes with <i>Salix repens</i> spp. <i>argentea</i> , and hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	International
Panasonic SINC	This designation covers the entirety of land within the Application Site. It comprises an area of post-industrial land adjacent to and south of the M4 at Baglan. The site supports a mosaic of various habitats, including scrub communities, neutral grassland, fen, reedbed and ponds. The site previously supported breeding lapwing and continues to support a variety of bird species.	County
NPT Watercourses	Generic designation covering all watercourses that retain a generally natural form (i.e. not culverted etc.) in NPT.	County
Habitats		
Broadleaved Plantation Woodland	Northern, southern and western boundaries of the Application Site.	Site
Dense and Scattered Scrub	Scattered across Application Site and in association with margins.	Site
Semi-improved Grassland	Forms a mosaic with marshy grassland across the Application Site.	County
Marshy Grassland	Forms a mosaic with semi-improved grassland across the Application Site.	County
Species		
Breeding Bird Assemblage	Habitats likely to support an assemblage of common and widespread bird species utilising the Application Site for nesting and foraging with suitable vegetation for ground nesting species, albeit subject to disturbance and scrub encroachment.	Local

Important Ecological Feature	Key Attributes	Nature Conservation Value
Foraging/Commuting Bat Assemblage	Low activity dominated by common pipistrelle, predominantly in association with vegetated boundaries	Site
Badger	Suitable habitat for badger.	Site
Common reptiles	Low population of slow-worm identified onsite	Local
Terrestrial Invertebrates	Total 211 species identified across the Application Site including 31 species of conservation concern.	Vice-County

Section 4

Details of Proposed Development

- 4.1 Having reviewed the baseline conditions, this section of the Ecological Appraisal provides pertinent details of the proposed development, in particular those aspects which have potential implications for the ecological features/receptors identified in **Section 3**. Where relevant, reference is made to the influence that ecological considerations have had in the scheme's design and any inherent mitigation which avoids or reduces the severity of potential ecological impacts.
- 4.2 The proposed development will comprise construction of a glass manufacturing facility with associated access, car park facilities and drainage infrastructure. Car parking areas are proposed to the north and east of the building with a loading bay to the south. A Proposed Site Layout is provided at **Appendix EDP 1** whilst a Detailed Soft Landscape Design is provided at **Appendix EDP 2**.

Proposed Habitat Loss

- 4.3 Land take associated with built development will encompass circa 4.5ha of marshy and semi-improved grassland, ephemeral/short perennial vegetation, scattered scrub and tall ruderal vegetation across the northern extents of the Application Site. This is in addition to the temporary loss/degradation of additional habitat (c. 1.5ha) along the north-eastern and northern boundary of the Application Site to accommodate sustainable drainage features and a bund along the southern boundary.
- 4.4 In addition, a section of plantation woodland and scrub around the peripheries of the Application Site will be removed to facilitate construction of two access roads, one through the northern boundary of the Application Site and a second through the western boundary. This is in addition to the erosion of plantation woodland along the boundary of the Application Site to accommodate sustainable drainage features.

Proposed Habitat Retention, Creation and Enhancement

- 4.5 Inherent within development proposals is the proposed retention of land comprising the southern half of the Application Site, accounting for circa 6ha, which will be subject to sensitive long-term habitat management to maintain the biodiversity interests of such areas as part of the wider mitigation package for habitat loss.
- 4.6 Of further pertinence, proposed open space along the north-eastern boundary of the Application Site will incorporate landscape areas comprising newly created species-rich grassland habitat and tree and shrub planting to be integrated with sustainable drainage features which will include a sequence of vegetated detention basins connected by swales and a pond. Additional proposals include:

- The retention of the majority of plantation woodland and scrub around the peripheries of the Application Site;
 - Proposed infill planting of gaps within plantation woodland to strengthen wildlife corridors and deter unauthorised public access to sensitive habitat features;
 - The provision of new tree, shrub and grassland planting across the built development footprint to soften the edges of development and provide further benefits to biodiversity, visual amenity and climate regulation;
 - The provision of new tree planting along the eastern boundary of the Application Site and adjacent development;
 - The creation of a green roof measuring circa 720m² to incorporate new habitat features including bare ground, wildflowers and tussocky grassland of value to birds and invertebrates; and
 - The inclusion of rain gardens within the fabric of built development providing additional opportunities of new planting and habitat creation.
- 4.7 Furthermore, the development footprint will be offset away from retained plantation woodland boundaries adjacent through the provision of habitat buffers incorporating the full root protection zones of retained trees and shrubs.
- 4.8 In summary, EDP has provided input throughout the design process such that the Proposed Site Plan and Detailed Soft Landscape Design to provide measures to avoid, mitigate or compensate for ecological impacts. Measures proposed to avoid or mitigate potential impacts, and to provide long-term ecological enhancements, are discussed further in **Section 5** of this report.

Section 5 Predicted Impacts and Mitigation

- 5.1 This section of the Ecological Appraisal considers the likely impacts of the Proposed Site Plan included as **Appendix EDP 1** on the existing ecological resource. Where impacts cannot be avoided by inherent mitigation alone, additional mitigation or enhancement measures are recommended which, if implemented, would as a minimum enable the proposed development to meet legislative and/or planning policy requirements.
- 5.2 EDP's overall summary and conclusions, based upon the above, are given in **Section 6**.

Designated Sites

Statutory Designations

- 5.3 Statutory designations receive legal protection under various international and national legislative instruments. This protection is also reflected in policies included within Planning Policy Wales (PPW) and Technical Advice Note 5 (TAN5), which are given material consideration during the planning application process.
- 5.4 At the local level, the Neath Port Talbot County Borough Council (NPTCBC) Local Development Plan (LDP) (2011-2026) was adopted in January 2016 and sets out planning policy for the region. Of relevance to statutory designations, Strategic Policy SP15 (Biodiversity and Geodiversity) states:

'Important habitats, species and sites of geological interest will be protected, conserved, enhanced and managed through the following measures:

- 1 *The identification of the following Internationally and Nationally designated sites within the County Borough to enable their protection:*
 - a) *Special Areas of Conservation (SACs) and Ramsar Sites;*
 - b) *Sites of Special Scientific Interest (SSSIs); and*
 - c) *National Nature Reserves (NNRs).*
- 2 *The identification and protection of sites of regional and local importance; and*
- 3 *The protection of important natural heritage features.'*

- 5.5 As described in **Section 3**, there are two statutory designations within the potential zone of influence of the Application Site: Crymlyn Bog Ramsar Site/SAC and Kenfig SAC.

- 5.6 In accordance with Part 6 of the Conservation of Habitats and Species Regulations 2017 (as amended), a Habitat Regulations Assessment (HRA) is required where a plan or project may give rise to significant effects upon any European site designated to conserve natural habitats and species that are rare, endangered, vulnerable or endemic within the European Community. This includes SACs designated for their habitats and/or species of European importance, and SPAs classified for rare, vulnerable and regularly occurring migratory bird species. Such requirements also apply to those sites going through the formal designation process, including candidate SACs (cSACs) and Sites of Community Importance (SCIs). Additionally, Government policy also affords the same level of protection to internationally important wetlands (Ramsar sites), potential SPAs (pSPAs), possible SACs (pSACs) and proposed Ramsar Sites, requiring such sites to also be treated as European sites for planning purposes.
- 5.7 NPTCBC LDP was previously subject to a Habitat Regulations Assessment (HRA) in 2012⁹, which considered the likely significant effects to arise through implementation of the LDP and in particular housing and employment allocations, on European sites within the zone of influence.
- 5.8 The HRA identified several potential effects of allocated sites on the Crymlyn Bog Ramsar Site/SAC and/or Kenfig SAC including
- Atmospheric pollution;
 - Changes in water quality;
 - Changes in water quantity and hydrological regime;
 - Spread of invasive species;
 - Natural coastal processes; and
 - Urban pressure including increase in population and therefore recreation levels, leading to disturbance/degradation of habitats and species.
- 5.9 In particular, it was noted that habitats associated with these designated sites are sensitive to increased atmospheric pollution arising from traffic, heating emissions, point sources of pollution and/or contaminated surface water runoff in addition to changes in water level following increase discharge of surface water runoff from new development and/or water abstraction, particularly from the Tennant Canal.
- 5.10 Overall, however, the HRA report determined that there would be no likely significant effects on the above designated sites subject to implementation of development in accordance with those policies of the LDP.

⁹ NPTCBC (2013). Local Development Plan 2011-2026: Habitats Regulations Assessment. Available at https://www.npt.gov.uk/PDF/ldp_hra_august13.pdf [Accessed on 10 January 2021]

- 5.11 At the site level, the Crymlyn Bog Ramsar Site/SAC and Kenfig SAC is considered sufficiently distant from the Application Site, such that no direct impacts associated with habitat degradation or land take are anticipated. In addition, development proposals concern construction of a commercial properties such that impacts associated with an increase in population and thus recreational pressures and degradation from the spread of invasive species can be ruled out.
- 5.12 With respect to changes in water quality/water levels, the Application Site is located outside of the catchment for the Crymlyn Bog and Kenfig, with the River Tawe separating the Application Site from the Crymlyn Bog and the River Afan separating the Application Site from Kenfig SAC. Both of these main waterbodies discharge directly into Swansea Bay.
- 5.13 Lastly, the development is not anticipated to create harmful air emissions during its operation, whilst traffic generated during the construction and operational phase will be localised and unlikely to impact roads within 200m of either designation such that negative effects upon qualifying habitats associated with air quality can be scoped out.

Non-Statutory Designations

- 5.14 Non-statutory designations do not receive any formal legal protection. However, they do receive planning policy protection, as reflected in TAN5. At the local level, the NPTCBC LDP Policy NE6 (Important Biodiversity and Geodiversity Sites) states:

'Development proposals that would affect Regionally Important Geodiversity Sites (RIGS), Local Nature Reserves (LNRs), Sites of Interest for Nature Conservation (SINCs), sites meeting SINC criteria or sites supporting Local Biodiversity Action Plan (LBAP) or S42 habitats or species will only be permitted where:

*They conserve and where possible enhance the natural heritage importance of the site;
or*

The development could not reasonably be located elsewhere, and the benefits of the development outweigh the natural heritage importance of the site. Mitigation and/or compensation measures will need to be agreed where adverse effects are unavoidable.'

- 5.15 As described in Section 3, the Application Site overlaps within the Panasonic SINC. Measuring approximately 14.5 ha in total, this SINC is primarily designated for its mosaic of habitats, including scrub communities, neutral grassland, fen, reedbed and ponds. Approximately 11.9 ha of this SINC overlaps with the Application site. The remainder of this SINC extends eastwards, encompassing a parcel of land south of adjacent industrial units.
- 5.16 With respect to anticipated impacts upon this SINC, the proposals will result in the loss of marshy and semi-improved grassland, ephemeral/short perennial vegetation, scattered scrub and tall ruderal vegetation across the northern extents of the Application Site to facilitate development including access roads, car parking areas and sustainable drainage

systems (SuDS) amounting to circa 6ha. Impacts upon this designation as a result of the proposals, therefore, relate to the reduction in the overall size of the SINC equating to 41%. Whilst total habitat loss also encompasses areas of limited botanical interest *per se*, such habitats still contribute to the wider mosaic of habitats across the Application Site.

5.17 To compensate for the loss of habitats associated with Panasonic SINC, arising as a result of the development proposals, remaining habitats within the Application Site accounting for circa 6ha of the SINC, will be subject to enhancement and long-term management to maximise their biodiversity value and contribution to the designation. Such measures will include:

- The sensitive management of retained grassland areas to maximise the value of foraging, dispersal, breeding and hibernation resources for protected/notable species through the implementation of a sensitive hay cutting regime, so as to promote a structurally diverse and species-rich grassland sward whilst ensuring the control of scrub encroachment. Such measures will benefit the local bat assemblage, in addition to common reptiles, birds and invertebrates;
- The offsetting of the development from retained boundary features through the provision of habitat buffers. Such buffers will accommodate retained grassland habitat and trees, and be extended further where necessary to accommodate larger root protection areas associated with plantation woodland present along the peripheries of the Application Site;
- The provision of new tree and shrub planting across the construction footprint and in association with retained boundary features to compensate for tree loss whilst strengthening wildlife corridors around the peripheries of the Application Site;
- The utilisation of native thorny species to infill gaps within plantation woodland to deter unauthorised public access to retained habitats thus protecting them from damage/degradation in the long-term whilst providing an undisturbed refuge to promote establishment of ground nesting bird species across the Application Site; and
- The control of invasive plant species present onsite through implementation of a suitable treatment regime following the advice of a specialist contractor.

5.18 This will be combined with the creation and/or reinstatement of habitats within landscaped areas of proposed development including:

- The re-creation of species-rich meadow grassland around the peripheries of the development footprint including across the proposed earth bund, albeit leaving areas of south facing bare ground of value to invertebrates;
- The inclusion/integration of wetland areas, reedbeds and scrapes with a SuDS providing suitable foraging habitat for birds;

- The creation of a permanent pond as part of the proposed SUDS to be planted with wetland species providing new habitat features overprotected/notable species;
- The inclusion of rain gardens around the edges of the proposed building to further manage surface water runoff. Such features will be planted with flowering species to enhance biodiversity whilst also providing benefits to visual amenity; and
- The provision of tree and shrub planting utilising fruiting and flowering species within the fabric of built development to soften development edges and provide an additional foraging resource for birds and pollinating invertebrates.

5.19 In addition to the above, habitat loss across the SINC will further be compensated for through the provision of a green roof across accommodation areas associated with the proposed industrial building measuring 90m in length by 8m in width. In general, a green roof should be designed with reference to guidelines prepared by Buglife¹⁰. A green roof should incorporate a range of habitat features and promote structural diversity within vegetation cover, thus creating a patchwork of niches to attract various species. Features recommended for inclusion with a green roof design include:

- Areas of bare ground with south facing banks of value to solitary bees and wasps;
- Flower-rich grassland habitats of value as a foraging resource to pollinators;
- Taller, tussocky grassland providing suitable shelter to ground nesting birds and their chicks;
- Shorter vegetation types including sedum species;
- The creation of varying substrate depth and slight undulations with shallow hollows to collect rainwater (although, given the weight constraints of such a system, it is important to ensure that large volumes of water are channelled off the roof);
- The encouragement of moss growth thus creating invertebrate microhabitats and provide further foraging areas for birds as well as nesting material. This can be achieved by leaving patches of bare substrate to enable moss colonisation from retained habitats and growth;
- Inclusion of bare, shingle-based substrates of value as potential habitat for such species as little ringed plover which favours shingle banks and gravel pits for nesting; and

¹⁰ Buglife (2012). Creating Greenroofs for Invertebrates: A Good Practise Guide. Available at: https://cdn.buglife.org.uk/2019/07/Creating-Green-Roofs-for-Invertebrates_Best-practice-guidance.pdf [Accessed on 10 January 2021]

- Inclusion of log/deadwood piles to provide areas for shelter and nesting sites for saproxylic invertebrate species.
- 5.20 A Biodiversity Management Plan (BMP) will be prepared detailing those habitat creation, enhancement and management measures recommended for the Application Site, to ensure its continued ecological functionality and contribution to the maintenance of local biodiversity.
- 5.21 With respect to other non-statutory designations within the zone of influence of the Application Site, there remains the potential for impacts to arise upon NPT Watercourses SINC such as the Baglan Brook to the east of the Application Site and retained wetland habitats associated with Panasonic SINC following a deterioration in water quality and increase in suspended solids during the construction and operation phase of development. Pollution incidents could also arise as a result of leaks and spills from construction activities, resulting in the introduction of hydrocarbons and other contaminants from demolition activities, site plant or of sediment loads arising from dust deposition or spoil movement.
- 5.22 However, adverse impacts associated with site drainage, including surface water run-off and ground water contamination, are considered unlikely subject to implementation of a sensitive drainage strategy in accordance with relevant planning policy. Of further pertinence, it is proposed to utilise an active attenuation system to store surface water runoff on site for re-use within the glass manufacturing process that will take place, thus recycling natural resources.
- 5.23 The SuDS strategy proposed will include rain gardens in addition to permeable paving located within car parking areas as well as a sequence of detention basins which will be connected via swales along the north-eastern boundary of the Application Site. Such features will be planted with native marginal and aquatic species including those species inherent in the Application Site (such as common reed of potential value to birds including such species as Cetti's warbler). Where possible, it is recommended that some of these detention basins be designed as wetland scrapes to seasonally hold water, thus providing a foraging resource for a bird assemblage, including lapwing which typically seek out damp pastures which attract a rich diversity of invertebrates so as to provide a rich food source for their chicks.
- 5.24 Furthermore, it is recommended that appropriate pollution control measures will be employed in accordance with the relevant Environment Agency standards¹¹ relating to: GPP1 *Good Environmental Practises*, GGP55 *Works and maintenance in or near water*; PPG6 *Pollution prevention guidance for working at construction and demolition sites*; GPP8 (safe storage and disposal of used oils); and GPP21 *Pollution incident response planning* to ensure that detrimental impacts to aquatic features on, and immediately adjacent to the Application Site, as a result of surface run-off arising during the pre-construction and enabling works phases, are fully avoided.

¹¹ Available at Guidance for Pollution Prevention (GPPs) - Full list | NetRegs | Environmental guidance for your business in Northern Ireland & Scotland

Habitats

- 5.25 There are several mechanisms through which habitats receive protection without the statutory and non-statutory designated site frameworks. Priority habitats comprise those listed by the Welsh Government as being of key significance to sustain and improve biodiversity in Wales, as defined under Section 7 of Part 1 of the Environment (Wales) Act 2016. Priority Habitats receive protection as identified within policies set out in TAN5.
- 5.26 Additionally, the Local Development Plan includes a number of relevant policies requiring consideration including Policy PN7 (Important Natural Features) which states:
- ‘Development proposals that would adversely affect ecologically or visually important natural features such as trees, woodlands, hedgerows / field boundaries, watercourses or ponds will only be permitted where:*
- 1 Full account has been taken of the relevant features in the design of the development, with measures put in place to ensure that they are retained and protected wherever possible; or*
 - 2 The biodiversity value and role of the relevant feature has been taken into account and where removal is unavoidable, mitigation measures are agreed.’*
- 5.27 Further details are provided within Biodiversity and Geodiversity Supplementary Planning Document adopted May 2018 which seeks to provide further information and guidance to development proposals to protect, conserve, enhance and manage important habitats, species and sites of geological interest.
- 5.28 Habitats within and immediately adjacent to the Application Site have been assessed through an Extended Phase 1 survey and detailed botanical assessment. The Application Site is characterised by a mosaic of habitat types including plantation woodland, scrub, species-rich neutral and marshy grassland, tall ruderal and ephemeral/short perennial vegetation.
- 5.29 As discussed above in relation to non-statutory designations, the proposals will result in the loss of circa 6ha to facilitate development including access roads, car parking areas and SuDS. In compensation for the loss of such habitats, the scheme includes the provision of newly created habitat features within the development footprint integrated with a SuDS; sensitive long-term management of retained habitats across the wider Application Site; and provision of a green roof in accordance with those design principles discussed and recommended above.
- 5.30 There does remain the potential for physical damage/degradation of retained habitat features during the construction phase of development. Protective fencing will be erected as recommended within *BS5837: 2012 Trees in relation to design, demolition and construction* to physically protect retained habitats on-site (namely scrub, plantation woodland and associated mature trees) with establishment of Ecological Protection Zones (EPZs). Protective fencing will incorporate the full root protection area of the

feature to be retained and will be protected and maintained throughout the duration of all site enabling and construction activities.

- 5.31 No works (other than planting), including the storage of materials, plant and machinery, should be carried out within or immediately adjacent to all areas of protective fencing/areas marked for protection as described above, so as to ensure no detrimental impacts to sensitive features arising from physical damage and/or pollution. The digging of trenches and pits for new tree and scrub planting adjacent to areas of protective fencing, where this lies inside root protection areas, should be carried out by hand only, in accordance with best practice guidance as stipulated within BS 5837:2012.
- 5.32 In addition, the scheme should also ensure the implementation of a sensitive lighting strategy to ensure no/limited light spill occurs within close vicinity of boundary woodland features and retained SINC habitats to the south. Where lighting is required along road/pedestrian routes adjacent, lighting columns should be sited within the development footprint itself and directed away from habitat edges to minimise disturbance and light spill. Lighting should include directional, timed and/or low-lux lighting, utilising shields and/or hoods where required. Such measures could be secured via planning condition attached to any future consent.

Protected and/or Notable species

- 5.33 Certain species receive legal protection in the United Kingdom and are commonly known as 'protected species'. In reality, the level of protection for different species varies considerably, from protection solely against 'killing and injury' to full protection of the species and their places of refuge. Where pertinent, details of legal protection afforded to species/species-groups are provided below.
- 5.34 In addition to protected species, there are other species/species-groups that do not receive legal protection, but which are notable owing to their conservation status as priority species or other status. Details of any actual or potential notable species within the Application Site are identified below. With respect to planning policy, protected and notable species are also afforded policy protection at a national level by TAN5, which requires planning authorities to ensure that such species are protected from the adverse effects of development.
- 5.35 Baseline investigations have identified protected species implications for the Application Site relating to foraging/commuting bats, breeding birds, badger, common reptiles, notable mammals and terrestrial invertebrates. These are discussed in turn below.

Bats

- 5.36 All species of British bat are afforded protection under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence to:
- (i) Deliberately capture, injure or kill a bat;

(ii) Deliberately disturb bats wherever they are occurring, in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, to affect significantly the local distribution or abundance of the species to which they belong, or in the case of hibernating or migratory species, to hibernate or migrate; or

(iii) Damage or destroy a breeding site or resting place of a bat.

5.37 Additional protection for bats is also afforded under the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place. In addition, eight of the eighteen species of bat resident in the UK (greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe, barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), soprano pipistrelle, common pipistrelle, brown long-eared and noctule are also listed as Priority species.

Foraging/Commuting Bats

5.38 Manual transect and automated bat activity surveys have confirmed that the Application Site supports relatively low levels of foraging and commuting activity dominated by common and widespread species considered to be of Site level importance.

5.39 The proposals will result in the loss of circa 4.5ha of mosaic habitat to accommodate built development, in addition to temporary loss/disturbance of a further circa 1.5ha of land to accommodate sustainable drainage features. Although such land provides a suitable foraging resource for a bat assemblage, given the limited activity identified onsite, such impacts are considered negligible. Furthermore, proposed enhancement and sensitive long-term management of retained habitats combined with compensatory tree and shrub planting along the peripheries of the Application Site, as detailed above in relation to non-statutory designations and habitats will serve to provide adequate compensation for proposed habitat loss.

5.40 There remains the potential for degradation and/or loss of linear features (treelines), coupled with potential disturbance impacts associated with increased lighting during both the construction and operation phase of development, which are likely to disrupt a bat assemblage utilising such features for dispersal between their roosts and foraging habitat in the wider landscape. However, the provision of compensatory tree planting combined with inclusion of habitat buffers to offset development from retained vegetative boundary features will serve to maintain and strengthen wildlife corridors and facilitate continued dispersal of a local bat assemblage.

5.41 Implementation of a sensitive lighting strategy is also advised so as to ensure no/limited light spill occurs within close vicinity of boundary hedgerows and proposed open green space. Where lighting is required along road/pedestrian routes, lighting columns should be sited within the development footprint itself and directed away from habitat edges to minimise disturbance and light spill. Lighting should include directional, timed and/or

low-lux lighting, utilising shields and/or hoods where required. Such measures could be secured via planning condition attached to any future consent.

- 5.42 In addition, construction should be limited to daylight hours as far as possible, with the use of temporary, artificial lighting avoided during the hours between dusk and dawn, to mitigate effects relating to increased use of artificial lighting during construction.
- 5.43 Subject to the implementation of those key mitigation measures detailed above with respect to bats and previously with respect to non-statutory designations and habitats, no significant detrimental impacts upon the foraging/commuting bat assemblage utilising the Application Site are considered likely to arise.
- 5.44 It is, however, recommended that roost features (such as bat tubes/bat boxes) are incorporated into the exterior of the new building and/or on retained semi-mature/mature trees to enhance roosting provision within the Application Site.

Breeding Birds

Legislation

- 5.45 All wild birds, their nests and eggs are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:
- (i) intentionally kill, injure or take any wild bird;
 - (ii) take, damage or destroy the nest of any wild bird while it is in use or being built;
 - (iii) take, damage or destroy the egg of any wild bird; or
 - (iv) to have in one's possession or control any wild bird (dead or alive), or egg or any part of a wild bird or egg.
- 5.46 In addition, further protection is afforded to those wild bird species listed on Schedule 1, prohibiting any intentional or reckless disturbance to these species while it is nest building, or at a nest containing eggs or young, or to recklessly disturb the dependent young of such a bird. A number of species are also included as Priority species.
- 5.47 Those measures detailed above in relation to non-statutory designations, habitats and bats are considered sufficient to minimise impacts upon a breeding bird assemblage associated with the Application Site whilst management of the site including control of public access to minimise disturbance to retained habitats in addition to control of encroaching scrub may serve to promote re-establishment of a ground nesting bird population.
- 5.48 It is further recommended that bird boxes be installed upon suitable retained trees across the Application Site, in addition to the inclusion of fruit-bearing and flowering

native tree, shrub and grassland species to provide additional enhancements for a bird assemblage.

- 5.49 Given the protection afforded to all breeding birds, their nests, eggs and young, sensitive vegetation clearance required during the pre-construction and construction phases of development should be timed to avoid the main bird breeding season (i.e. March to August inclusive). Should this seasonal constraint prove impracticable, then vegetation clearance outside of this period should only commence following the advice and under supervision of a suitably qualified ecologist. Pre-commencement checks for active nests will be required prior to any vegetation clearance occurring during the main bird breeding season. Where an active bird nest is identified, a 5-10m buffer (dependent on individual species requirements, and potentially greater, as specified by the ecologist at the time) will be established around the active nest, with no clearance works permitted within this buffer until all young have fledged and the nest confirmed inactive by the Ecological Clerk of Works (ECoW). Thereafter, all vegetation requiring removal should be cut to ground level and subsequently maintained at 20mm or as bare ground so as to discourage the establishment of nests.

Badger

- 5.50 Badgers and their setts receive protection under the Protection of Badgers Act 1992, which protects badgers from deliberate harm and injury. The protection afforded to badgers is primarily due to animal welfare issues and not due to concerns over their nature conservation status. Restrictions under this act which apply to development include any killing, injuring, possession or cruel treatment to badgers, any interference to a sett through damage or destruction, any obstruction of access to any entrance of a sett, or any disturbance to a badger whilst it is occupying a sett.
- 5.51 No setts were recorded within the Application Site during baseline survey such that no impacts associated with disturbance and/or damage of active setts will arise. However, owing to the suitability of habitat and to the mobility and widespread nature of this species, a badger survey of the Application Site by a suitably qualified ecologist prior to the commencement of development is recommended, to determine whether any setts have been established during the interim period.
- 5.52 If identified, development should avoid direct impacts to, and disturbance of, active badger setts through establishment of an appropriate working buffer (typically 10m-30m, as advised by a suitably qualified ecologist), in which no vegetation clearance or movement of machinery will be permitted. Where this is not possible, sett closure will be required with under licence from Natural Resources Wales, with such works restricted to between the months July and November.
- 5.53 In addition to the above and in respect of the presence of badgers more generally, the following measures will apply throughout the construction phase of the development:
- All machinery will be operated by trained personnel only;

- There will be no working at night; and
- All trenches/excavations will be covered up overnight or a means of escape provided to avoid wildlife becoming trapped.

5.54 Land take associated with the development proposals will, furthermore, result in the permanent loss of grassland and scrub habitat which provide a foraging resource to badger. However, those measures for habitat retention, enhancement, creation and management discussed above will ensure the availability of a foraging resource in the long-term, in the unlikely event badger were found to be present.

Common Reptiles and Other Notables Species

5.55 All species of common reptile (including common lizard, slow-worm, grass snake and adder) receive at least limited protection from harm under the Wildlife and Countryside Act 1981 (as amended), making it an offence to cause intentional killing and injuring of these species. In addition, these species are also listed as Priority species.

5.56 The proposals will result in the loss of circa 4.5ha of mosaic habitat to accommodate built development, considered optimal habitat for a common reptile population, in addition to temporary loss/disturbance of a further circa 1.5ha of land to accommodate sustainable drainage features. In addition, the removal of scrub/trees to facilitate construction of access roads will result in the loss of additional habitat of value for foraging, hibernation and dispersal.

5.57 In compensation for this loss, the remainder of the Application Site will be enhanced and managed in the long term for wildlife, including reptiles. Given the low population of slow-worm identified onsite, combined with the availability of suitable retained habitat adjacent to the proposed development footprint, no formal translocation of a reptile population is proposed. Instead, the following strategy for displacement of the reptile population will apply:

- Enhancement of retained habitats within the Application Site for common reptiles through construction of formal hibernacula;
- Full site clearance under ecological watching brief with displacement of reptiles to offsite habitats via habitat manipulation and sensitive vegetation clearance during the reptile active season; and
- Long-term management of retained and newly created habitats for reptiles.

5.58 The clearance of grassland habitat located across the construction footprint will be undertaken between April and October (when temperatures are above 9°C) so as to avoid the main hibernation period of common amphibians and reptiles and other mammals.

5.59 As such works will coincide with the bird breeding season (typically March to August inclusive), a pre-commencement check for active bird nests, particularly with respect to

ground nesting birds, will be undertaken by a suitably qualified ecologist/ECoW immediately prior to the commencement of works. Where an active bird nest is identified, a 5-10m buffer (dependent on individual species requirements, and potentially greater, as specified by the ecologist at the time) will be established around the active nest, with no clearance works permitted within this buffer until all young have fledged and the nest confirmed inactive by the ECoW.

- 5.60 Grassland habitat will be subject to directional cutting over two phases. Specifically, an initial cut of grassland habitat will be undertaken using hand-held machinery, reducing vegetation height down to a minimum of 175mm. With respect to land outside the translocated footprint, clearance will be directed towards adjacent retained habitat (i.e. retained vegetative boundaries). A second cut of the proposed footprint areas will be undertaken immediately thereafter, with vegetation cut to ground level and no greater than 30mm in height.
- 5.61 During clearance, any potential refugia located within the construction footprint suitable for common reptiles as well as small mammals will be carefully dismantled using hand tools, hand-held machinery or untracked, light machinery to facilitate efficient supervision and relocated to retained reptile habitat to ensure suitable refuge/hibernation opportunities are retained across the Application Site.
- 5.62 All arisings will be removed from the construction footprint and vegetation will be maintained thereafter at a height no greater than 20mm through regular mowing or as bare ground to discourage common amphibians and reptiles from returning.
- 5.63 In the event any notable species are identified during site clearance these will either be captured by hand by the attending ECoW and immediately released into retained habitat adjacent, or when working outside the translocated footprint, left to disperse of their own accord.
- 5.64 Upon completion of initial phased cutting, it is recommended exclusion fencing is installed along the southern boundary of the construction footprint to further deter recolonisation of the development footprint from retained habitats adjacent during its construction. Installation of exclusion fencing will require the selective clearance of grassland vegetation along the proposed fencing alignment. Prior to selective vegetation clearance, the fence alignment route will be inspected by the ECoW for the presence of potential refugia. Any suitable refugia identified during clearance works will be subject to a fingertip search with any reptiles identified relocated to the receptor site. Upon completion of the fingertip search the refugia will be dismantled by hand.
- 5.65 Fencing should be erected by a suitably qualified fencing contractor immediately following the completion of the phased vegetation clearance and prior to the commencement of construction works.

Terrestrial Invertebrates

5.66 In respect of the importance of an invertebrate assemblage, the following recommendations to ensure the conservation of a diverse invertebrate community, including the broken-belted bumblebee identified on site, include:

- The management of retained grassland habitat across the Application Site with small areas of grassland cut every 3-5 years in alternate sections of the site, ensuring that early successional conditions are always present for the species that require them;
- The further management of grassland to maintain rough grassland areas where leaf dieback and leaf matter is left *in-situ* to provide a foraging resource for saproxylic species;
- The creation of shallow scrapes across the Application Site with such features integrated within SuDS where possible to provide varied habitats for those species favouring wet conditions including the pill beetle (*Cytilus sericeus*) and the bog snail killer whose larvae relay on water snails as their host. Such features can be planted with marginal and aquatic flowering species to further promote botanical diversity and provide an additional food source for invertebrates including the fleabane tortoise beetle which favours the flowering plant common fleabane;
- Provision and/or maintenance of areas of bare ground and/or sparsely vegetated habitat including south-facing banks and slopes where possible to provide locations for invertebrates (particularly solitary bees for nesting, hunting and basking). Indeed, a bund is proposed along the southern boundary of the construction footprint which can be designed to provide such habitat. This bund should be created from low-nutrient substrate removed from the construction footprint to ensure it remains sparsely-vegetated. Such 'bee banks' should be dry, free-draining and situated in sunny situations (i.e. south-facing);
- Further management of created and/or enhanced grassland habitat across the Application Site to promote species (flower)-rich grassland for foraging, utilising translocated sub-soil from the construction footprint wherever possible to ensure soil nutrient levels remain low. Newly created and/or enhanced grassland areas should seek to include/maintain a diversity of native plant species of local provenance including: Apiaceae such as wild carrot, hogweed, wild angelica, pignut; asteraceae including oxeye daisy, rough hawkbit, mouse-ear hawkweed, hawkweed oxtongue, common fleabane, yarrow, knapweeds, ragworts, and thistles; brassicaceae such as hairy bitter-cress, and garlic and hedge mustard; fabaceae including common bird's-foot-trefoil, white clover, black medick, and tufted vetch; and hypericaceae, such as perforate St John's wort. Such habitats will continue to provide suitable habitat for notable bee species including the broken-belted bumblebee;
- The provision of 'bee bricks' within the fabric of the new building providing additional nesting habitat for aerial-nesting insects such as solitary bees and wasps. These 'bee bricks' should be placed in warm, sheltered locations (i.e. a southerly aspect);

- The inclusion of new shrubby planting within the scheme to compensate for tree and shrub removal elsewhere across the Application Site. In particular, spring blossoming trees and scrubs such as willows, blackthorn, hawthorn and wild cherry are recommended for pollinating insects; and
- The creation of hibernacula constructed from brash, logs and stones/rubble to create suitable habitat for saproxylic species.

5.67 Such habitats and features can be further incorporated into the green roof in compensation for loss of habitat from the construction footprint.

Summary of Predicted Impacts and Principal Mitigation Measures

5.68 The potential impacts on valued ecological features (accounting for inherent mitigation), and recommended additional mitigation measures, in line with legislative and planning policy requirements, are summarised in **Table EDP 5.1**.

Table EDP 5.1: Summary of Ecological Impacts and Proposed Mitigation Measures.

Feature	Impacts in Absence of Inherent Mitigation	Inherent Mitigation	Additional Mitigation and/or Enhancement
Panasonic SINC	Partial loss of Panasonic SINC. Disturbance impacts arising from elevated lighting and noise during construction and operation. Continued degradation of retained habitats following occupation.	Habitat retention, protection, enhancement and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint.	Habitat creation, enhancement and management of on-site habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary.
NPT Watercourses	Deterioration in water quality.	Implementation of a sustainable drainage strategy.	Implementation of pollution prevention measures during construction.
Plantation woodland	Partial loss to facilitate site access. Potential damage of retained features and root protection zones during the construction phase. Continued degradation of habitats following proximity of occupied development.	Habitat retention and buffering.	Installation of protective fencing and signage along retained trees. Habitat creation, enhancement and management of onsite habitats. Maintenance and management where necessary.

Feature	Impacts in Absence of Inherent Mitigation	Inherent Mitigation	Additional Mitigation and/or Enhancement
Bats	Loss of potential foraging habitat. Loss of a sections plantation woodland of value for commuting. Disturbance impacts arising from increased lighting and noise during both the construction and operation phase.	New tree/shrub planting to enhance retained boundary features. Habitat retention, protection, enhancement and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint.	Habitat creation, enhancement and management of onsite habitats. Maintenance and management where necessary. New planting will use native species preferably of local provenance. Implementation of a sensitive lighting strategy.
Breeding birds	Killing/injury during the construction phase. Disturbance during both construction and operation. Disturbance impacts arising from increased lighting and noise during both the construction and operation phase. Loss of foraging and nesting habitat.	Habitat retention, protection, enhancement and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint. Creation of a green roof.	Habitat creation, enhancement and management of on-site habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary. Management of unauthorised public access.
Badger, Common Reptiles & Notable Mammals	Killing/injury during the construction phase. Disturbance during both construction and operation. Disturbance impacts arising from elevated lighting and noise during both the construction and operation phase. Loss of foraging habitat.	Habitat retention, protection, enhancement and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint	Adoption of precautionary working measures during construction. Habitat creation, enhancement and management of on-site habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary.

Feature	Impacts in Absence of Inherent Mitigation	Inherent Mitigation	Additional Mitigation and/or Enhancement
Terrestrial Invertebrates	Loss of habitats of value to an assemblage.	Habitat retention, protection, enhancement and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint. Creation of a green roof.	Habitat creation, enhancement and management of on-site habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary.

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Section 6

Summary and Conclusions

- 6.1 This section of the Ecological Appraisal summarises the Ecology Strategy for the proposed development, in terms of inherent and recommended additional mitigation measures, and then provides the overall conclusions of the Appraisal.

Summary of Ecology Strategy

Inherent Avoidance, Mitigation and Enhancement Measures Proposed and Further Recommended Detailed Design Measures

- 6.2 Proposed inherent avoidance, mitigation and enhancement measures incorporated within the development proposals include the following:
- Proposed retention of circa 6ha of SINC habitat associated with the southern half of the Application Site combined with the retention of plantation woodland around the peripheries as far as possible with the exception of total 30m length at two locations to accommodate construction of access roads;
 - The offsetting of retained plantation woodland from the development footprint through inclusion of habitat buffers encompassing as a minimum the root protection zone of retained trees and shrubs;
 - The infill planting of gaps within plantation woodland to manage authorised public access whilst enhancing wildlife corridors across the Application Site and providing compensation for tree and shrub loss elsewhere;
 - The provision of new tree, shrub and grassland planting across the built development footprint to soften the edges of development and provide additional habitat to protected and notable species whilst enhancing the visual amenity value of the development to site users;
 - Provision of sustainable drainage features designed to benefit biodiversity whilst managing, remediating and recycling surface water runoff from the Application Site;
 - The creation of species-rich wildflower grassland habitats and shrub planting subject to sensitive management across landscape areas associated with the development footprint;
 - The sensitive long-term management of retained SINC habitats to ensure their value to biodiversity is maintained in the long term; and

- The provision of a green roof incorporating a variety of habitats and substrate types of value to bird and invertebrate assemblages in compensation for habitat loss.

6.3 Additional design measures recommended include:

- Incorporation of a range of bat and bird boxes upon suitable trees and for integration within built form where appropriate so as to provide new roosting and nesting opportunities across the Application Site;
- The use of native species of local provenance within a planting scheme; and
- Minimising the spillage of artificial lighting on retained and new roosting, foraging and commuting/dispersal habitats for wildlife through a sensitive lighting strategy.

Construction Measures

6.4 Additionally, it is recommended that the following precautionary working measures are followed during the construction phase of the development:

- Installation of protective fencing and appropriate signage along/around trees to be retained prior to commencement of works, with no storage of material, plant or spoil adjacent to or within such protection zones;
- Measures to prevent adverse changes to water quality on and immediately adjacent to the Application Site during the pre-construction and construction period, with reference to the Environment Agency's Pollution Prevention Guidelines, including PPG1 'General guide to the prevention of pollution', PPG5 'Works and maintenance in or near water', PPG6 'Pollution prevention guidance for working at construction and demolition sites', and PPG21 'Pollution incident response planning';
- Given the protection afforded to all breeding birds, their nests, eggs and young, it is advised that any vegetation clearance required during the construction phases of development be timed to avoid the main bird breeding season as far as possible (i.e. March to August inclusive). Should this seasonal constraint prove impracticable; however, then a prior check for active bird nests should be undertaken by a suitably qualified ecologist with their advice followed thereafter with respect to the extent of clearance allowable; and
- Adherence to precautionary working measures with respect to badger, common reptiles and other mammals.

Overall Conclusions

6.5 EDP's desk- and field-based baseline investigations have demonstrated that the habitats and species present within and around the Application Site are not considered to pose an 'in principle' constraint to the proposed development that is the subject of this Appraisal.

- 6.6 However, significant negative impacts will arise upon key ecological receptors present onsite as a result of the proposals, particularly the erosion of habitats comprising parts of Panasonic SINC as a result of the proposed loss to the development footprint. Such losses are to be compensated for through the creation of new habitats in association with landscape areas of the development footprint; creation of a green roof in association with the new building; and long-term management of retained SINC habitats across undeveloped areas of the Application Site.
- 6.7 Additionally, and not unexpectedly for those habitats inherent within the Application Site, EDP's surveys have identified assemblages of protected/notable species that will need to be respected within development proposals. Accordingly, from the outset of the design process, EDP has contributed to the design of the masterplan assessed by this report which accompanies the planning application. Specific proposals for the avoidance, mitigation and compensation of any predicted impacts are considered in this report and summarised above. These measures include: those already embedded within the Proposed Site Plan; measures which should be incorporated at the construction stage; those which should be designed and specified within the landscaping scheme; and management measures to ensure that the design vision is achieved in the long term.
- 6.8 Overall, therefore, and subject to implementation of proposed mitigation measures, the scheme is capable of compliance with relevant planning policy for the conservation of the natural environment at all levels.

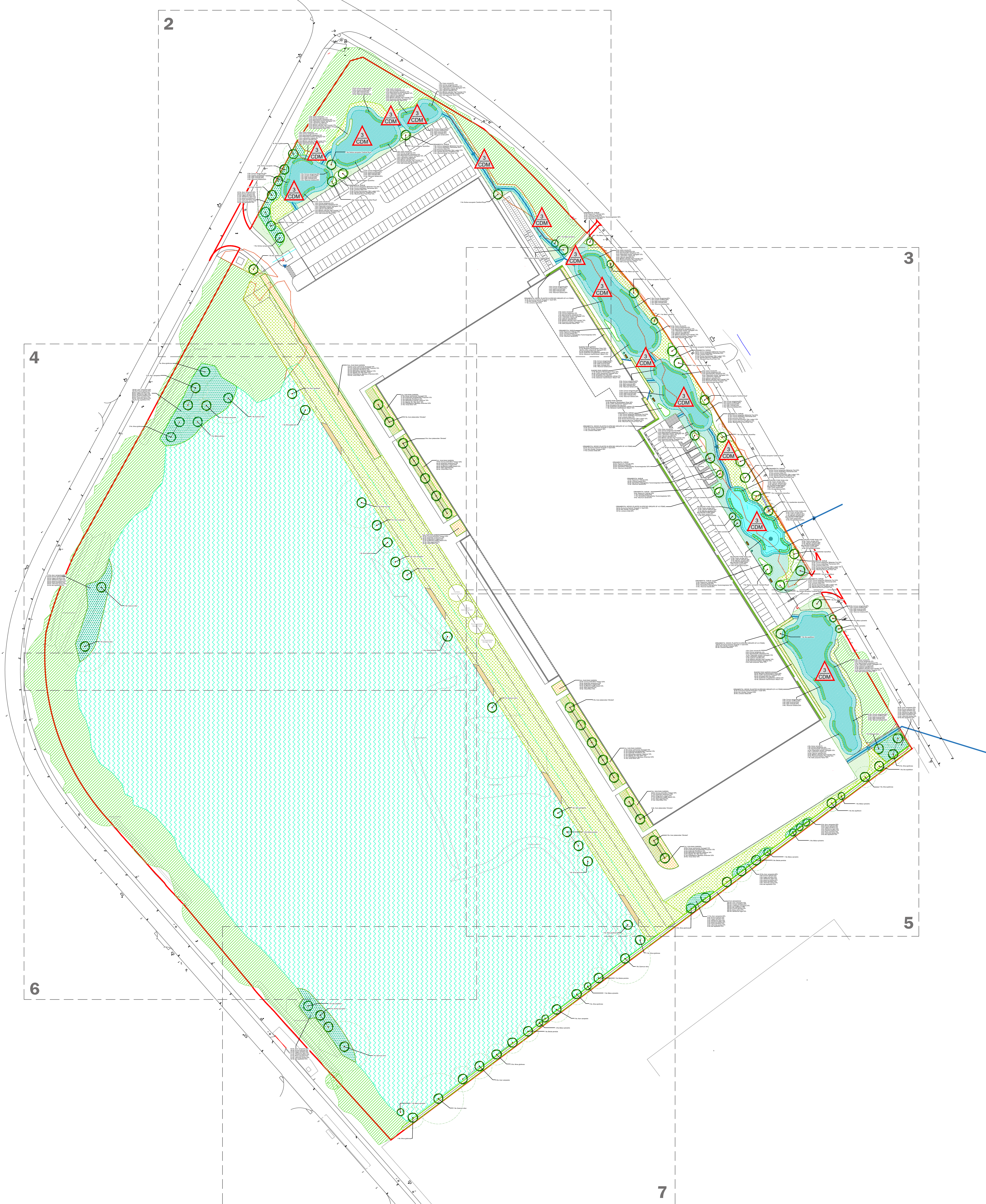
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Appendix EDP 1
Proposed Site Plan
(James & Nicolas, A03, 10.08.21, Rev I)

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Appendix EDP 2
Detailed Soft Landscape Design
(edp7017_d023a 05 April 2022 EB/LH)

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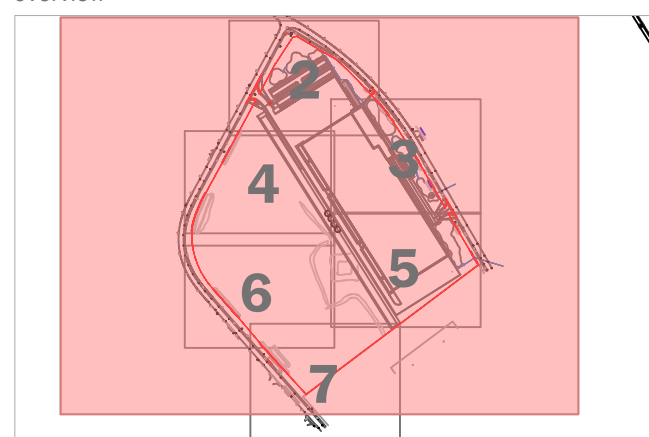


A risk assessment has been carried out on this design. Residual risks following this process are listed below. A copy of the full Design Risk Register is also available on request from EDP.

1. Soft landscaping implementation within a construction environment (across the site);
2. Installing trees (across the site);
3. Water bodies (proposed attenuation basins, pond and swales) presents risk of falling in and drowning; and
4. Works adjacent to existing/proposed highways (across the site)

For further guidance, refer to HSE Construction Design and Management Regulations 2013.

overview



This drawing is to be read in conjunction with all other drawings and specifications within the package. These drawings have been prepared for design development and are not for construction. All dimensions are in millimeters unless otherwise specified. All dimensions are to the center of the element unless otherwise specified. All dimensions are to the center of the element unless otherwise specified. All dimensions are to the center of the element unless otherwise specified. All dimensions are to the center of the element unless otherwise specified.

purpose of issue **PLANNING**

a	Update to address revised layout and drainage features	05-05-2022	EB
-	Original	04-03-2022	EB

rev	description	date	by
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client
Glass Systems Ltd

project title
Baglan Way, Port Talbot

drawing title
Detailed Soft Landscape Design - Overview
Sheet 1 of 7

date	05 APRIL 2022	drawn by	EB
drawing number	edp7017_0023a	checked	LH
scale	Refer to scalebar @ A0	QA	RB