



Chapter Thirteen ECOLOGY

INTRODUCTION

13.1 This chapter of the ES assesses the potential effects that may arise within the study area as a result of implementing the proposed development. The assessment presents a summary of the current conditions within the study area, describes the changes predicted as a result of the proposals and, where appropriate, identifies mitigation measures to address any significant negative effects that are identified. This chapter of the ES assesses the likely significant effects of the Proposed Development in terms of Ecology and incorporates a summary of the ecological survey reports which are included in Appendix 13.1.

13.2 The chapter describes the assessment methodology; the baseline conditions currently existing at the Application Site and surroundings; the predication of potential impacts; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed. This chapter has been prepared by Middlemarch Environmental Ltd.

METHODOLOGY

13.3 The ecological assessment included:

- A Desk Study and an Extended Phase 1 Habitat Survey combined with an assessment of the potential for legally protected species and species included in the UK BAP (badgers, bats, breeding birds, great crested newt, marsh fritillary, reptiles, otters and water voles) to occur within and adjacent to the Application Site;
- Results of further surveys for legally protected species and habitats and species included in the UK BAP;
- Data gathering of existing information and evaluation of any previous ecological survey work;
- Evaluation of the Application Site in terms of its nature conservation value;
- An assessment of the effects of construction and operation of the Proposed Development on the Application Site's existing ecological features;
- Requirement for mitigation measures in respect of potential adverse effects; and;
- Identification of residual effects taking into account the proposed mitigation measures.

13.4 Information was requested with respect to details of statutory and non-statutory designated sites of importance for nature conservation occurring within 2km of the Application Site. Information was also requested about any known occurrences of the legally protected species listed below and species included in the UK BAP and Local Biodiversity Action Plans ('Our Natural World' – a Biodiversity Action Plan for the Brecon Beacons



National Park and 'Action for Nature' - the Local Biodiversity Action Plan for Rhondda Cynon Taff) occurring within 2km of the Application Site (or 10km for bat species), such as: badgers; bats; birds; great crested newts; water vole; otter; reptiles; and; species and habitats included in the UK BAP.

13.5 The following organisations were consulted:

- Countryside Council for Wales web site for Protected Sites and Landscapes map;
- Biodiversity Information Service for Powys and Brecon Beacons National Park;
- South East Wales Biodiversity Records Centre; and,
- National Biodiversity Network (NBN) Gateway website.

13.6 The locations of statutory and non-statutory designated sites of nature conservation in relation to the Application Site are shown on Figure 13.1.

13.7 During development of this ES consultations were carried out with the following organisations with respect to ecology:

- Countryside Council for Wales; and
- Environment Agency Wales.

13.8 A walkover survey of the Application Site was undertaken in June 2008 and broadly followed the 'Extended Phase 1 Habitat Survey' methodology as set out in Guidelines for Baseline Ecological Assessment (Ref. 13.1). This method of survey provides information on habitats present within the Application Site and assesses the potential for legally protected species to occur in and adjacent to the Application Site.

13.9 Plant names follow New Flora of the British Isles (Ref 13.2) and are quoted as common names within the text of the ecology chapter. The reader is referred to the relevant report in Appendix 13.1 for Latin names.

13.10 Figure 13.3 shows colour-coded habitat maps with records of protected and notable species recorded at the Application Site during the surveys. Full survey reports are included in Appendix 13.1.

13.11 With respect to legally protected species, the following features were recorded:

- Locations of any mature trees that could offer suitable roosting sites for bats;
- Locations of any mature trees that could offer suitable roosting sites for barn owls;
- Signs of badger activity including setts, tracks, snuffle holes and latrines on the Application Site;
- Habitats for nesting birds;
- Habitat suitable for great crested newt;
- Habitat suitable for water vole;
- Habitat suitable for otter;
- Habitat suitable for reptiles;
- Habitats and species included in the UK BAP; and;
- Location of any weeds, which are subject to statutory controls e.g. Japanese knotweed and giant hogweed.



13.12 The Extended Phase 1 Habitat Survey identified the need for further surveys in respect of a range of animals to be undertaken in order to satisfactorily evaluate the nature conservation importance of the Application Site. A list of the surveys undertaken is provided below. Full details of the survey methodologies, results and conclusions from each survey are presented in Appendix 13.1. A summary of the findings of each survey is provided together with an evaluation of the survey results in the 'Baseline Conditions' section of this chapter. Where likely significant effects are identified, these are discussed in detail in the 'Potential Impacts' section of the chapter and where appropriate, recommendations for mitigation are provided in the 'Potential Mitigation and Enhancement' section.

13.13 Further surveys undertaken as part of the ecological assessment were:

- Badger survey;
- Bat activity survey;
- Breeding bird survey;
- Great crested newt assessment;
- Marsh fritillary survey;
- Otter survey;
- Reptile survey; and,
- Water vole survey.

13.14 The ecological surveys have not tried to produce a comprehensive list of plants and animals for the Application Site as any ecological surveys will be limited by factors which affect their presence. These factors include: weather; time of year; migration patterns; and, behaviour. However, it is considered that the results of the surveys, together with the information from the data gathering exercise, have enabled an assessment of the nature conservation interest of the Application Site to be made in sufficient detail for the potential effects of the Proposed Development on features of importance for nature conservation to be adequately defined. All surveys were completed at the appropriate times of year and in accordance with best practise. Further details of all survey methodologies, timings and result are provided in Appendix 13.1.

13.15 As a result of the field surveys and ecological data gathered for the Application Site and adjacent habitats, the ecological features were evaluated in terms of their nature conservation value using the criteria set out in The Institute of Ecology and Environmental Management (IEEM) 'Guidelines for Ecological Impact in the United Kingdom' (Ref. 13.3).

13.16 With respect to the assignment of a value for habitats and species within the Application Site, the guidelines state that tabulated boundaries between different values become difficult to define with precision due to the range of factors influencing the definition of value e.g. habitat quality, geographic location, size of populations etc. Thus the guidelines suggest an approach involving professional judgement based on available guidance and information and expert advice.

13.17 The value of an ecological resource has been determined within a defined geographical context. The following frame of reference has been used: International; UK; National (e.g. Wales); Regional (e.g. South-Wales); County (e.g. Powys); District (e.g. Rhondda Cynon Taff); Local; and, within Zone of Influence (e.g. project site or immediate



area). Using this geographical context the value of habitats or species can be assessed using the criteria outlined in Table 13.1.

13.18 Once the value of an ecological resource has been determined the significance of the effect on the resource can be assessed. The IEEM guidelines define a significant impact in ecological terms as

'...an impact (adverse or positive) on the integrity of a defined site or ecosystem(s) and / or the conservation status of habitats or species within a given geographical area, including cumulative impacts.'

Table 13.1: Guidance on Determining the Nature Conservation Value of Features (after IEEM Guidelines for Ecological Impact Assessment, 2006)

<i>Value</i>	<i>Scale</i>	<i>Criteria</i>
Very high	International	High importance and rarity. International scale and limited potential for substitution. E.g. Special Areas of Conservation, Special Protection Areas, Ramsar Sites.
High	UK / National	High importance and rarity, national scale, or regional scale with limited potential for substitution. E.g. Sites of Special Scientific Interest, National Nature Reserves.
Medium	Regional / County	High or medium importance and rarity, local or regional scale and (limited) potential for substitution. E.g. Local Nature Reserves, County Wildlife Sites.
Lower	District / Local	Low or medium importance and rarity, local scale. E.g. old hedges, woodlands and ponds.
Negligible	Within Zone of Influence	Very low importance and rarity, local scale. E.g. areas of built development, active mineral extraction or intensive agricultural land.

13.19 Following collation of the ecological baseline information, the likely effects of the Proposed Development were assessed, based on the existing knowledge of the design and against the criteria provided in Table 13.2.

13.20 The assessment of the potential effects of the Proposed Development takes into account both on-site and off-site effects, such as those that may occur on adjacent areas of ecological value. Effects can be permanent or temporary and can include direct loss of wildlife habitats, fragmentation and isolations of habitats, disturbance to species, changes to key features and changes to the local hydrology and/or water quality.

13.21 The significance of an adverse effect (or a beneficial result) is the product of the magnitude of the effect and the value or sensitivity of the ecological feature affected (see Table 13.1). High levels of significance are generally ascribed to large effects on features of high nature conservation value. Low levels of significance are ascribed to small effects on features of high nature conservation value or large effects on features of lower nature conservation value as shown in Table 13.2.



13.22 The effects can be either beneficial, where there is an advantageous or positive effect on the environmental resource or receptor, or adverse, where there is a detrimental or negative effect on the environmental resource or receptor. Using the terms outlined above and in Table 13.2 the criteria presented in Table 13.3 has been used to assess the significance of adverse and beneficial effects on ecological resources or receptors.

Table 13.2: Significance Matrix

		<i>Magnitude of Effect</i>		
		HIGH	MEDIUM	LOW
Value of Receptor	Very High to High (International/UK/England)	Major	Major / Moderate	Moderate
	Medium (County/Regional)	Major / Moderate	Moderate	Moderate / Minor
	Low (Local/District)	Moderate	Moderate / Minor	Minor
	<i>Zone of Influence</i> (Site or Immediate Area)	Minor / Negligible	Negligible	Negligible

Table 13.3: Likely Significance Effects Criteria

<i>Effect</i>	<i>Criteria</i>
Major adverse	Loss of, permanent damage to or adverse impact on integrity of any part of a site of international or national importance; Loss of a substantial part or key feature of a site of county importance; Loss of favourable conservation status (FCS) of a legally protected species; Loss of or damage to a population of nationally rare or scarce species.
Moderate adverse	Temporary disturbance to a site of international or national importance, but no permanent damage; Loss of or permanent damage to any part of a site of county importance; Loss of a key feature of local importance; A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable; Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.
Minor adverse	Temporary disturbance to a site of county value, but no permanent damage; Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation; A minor impact on legally protected species but no significant habitat loss or reduction in FCS; A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.
Negligible	No effects on sites of international, national or county importance; Temporary disturbance or damage to a small part of a feature of local importance; Loss of or damage to land of negligible nature conservation value; No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional/county level) species on the site or its immediate vicinity.
Minor beneficial	A small but clear and measurable gain in general wildlife interest, e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area the habitats lost.
Moderate beneficial	Larger scale new habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.
Major beneficial	Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the Habitats Directive or Annex I of the Birds Directive.



BASELINE CONDITIONS

13.23 The Application Site is located on Fifth Avenue in Hirwaun Industrial Estate (central National Grid Reference SN 938 068). The site is situated at the northern edge of the industrial estate, with industrial buildings located to the south and east. Penderyn Reservoir forms the northern site boundary, with early-mature sessile oak lining the boundary and over-shading much of the track. A pumping station and an area of pasture with scattered trees forms the western site boundary. Fifth Avenue forms the southern site boundary and Ninth Avenue forms the majority of the eastern site boundary, with the remainder marked by a water treatment works.

13.24 The site is dominated by an area of flat, made ground, with incorporated drainage channels. It is understood that the area was previously built upon (within the last 100 years). This central area of the site is dominated by marshy grassland, however occasional gorse and planted scattered trees are present towards the edges of this habitat. This area was grazed by horses and thus subjected to a high level of poaching. Fenced off areas were present along the eastern and western site boundaries, with protected areas of young broad-leaved plantation woodland and scattered trees in marshy grassland.

13.25 A grassy track runs along the northern site boundary, bound between lines of trees (northern side of track) and broad-leaved woodland (southern side of track). A small stream runs along the western edge of the site, with a second shallower brook flowing into this stream forming a triangular area of willow carr, scattered trees and marshy grassland separate from the main area of the site (the third side was formed by a dry ditch which separated this area from the grassy track).

13.26 Details of statutory sites of nature conservation value within 2km of the edge of the Application Site are summarised in Table 13.4 and shown on Figure 13.1. Desk study information has been collated from:

- Countryside Council for Wales Web site for Protected Sites and Landscapes map;
- Biodiversity Information Service for Powys and Brecon Beacons National Park;
- South East Wales Biodiversity Records Centre;
- National Biodiversity Network (NBN) Gateway website.



Table 13.4: Summary of Statutory Sites of Nature Conservation Value Within 2km of Application Site

<i>Site Name*</i>	<i>Distance from Application Site**</i>	<i>Comments</i>
Blaen Cynon SAC	100 m east	This site is considered to be one of the best areas in the United Kingdom for marsh fritillary. This site comprises five geographically separate areas which are also designated as SSSIs.
Cors Bryn-y-Gaer SSSI	100 m east	Part of Blaen Cynon SAC, this site comprises two geographically separate areas.
Woodlands Park and Pontpren SSSI	700 m north-east	Part of Blaen Cynon SAC, this site comprises three geographically separate areas.
Coedydd Nedd a Mellte SAC	1100 m west	This site is considered to be one of the old sessile oak woods with Ilex and Blechnum in the British Isles. It also contains a significant presence of Tilio-Acerion forests of slopes, screes and ravines.
Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI	1100 m west	Parts of the SSSI (which comprises two geographically separate areas) are included within Coedydd Nedd a Mellte SAC.
* SAC: Special Area of Conservation SSSI: Site of Species Scientific Interest ** Distance from Application Site is measured approximately from the edge of the Application Site to the edge of the Site of Nature Conservation Value		

13.27 With respect to non-statutory sites of nature conservation value, the desk study identified seven designated as Ancient Woodland, of which six of these are designated as Ancient Semi-Natural Woodland and one is defined as Ancient Replanted Woodland. The nearest of these was located approximately 350 m west of the perimeter of the Application Site. No further details regarding these woodlands have been provided.

13.28 The desk study identified a number of protected species within a 2km radius of the edge of the Application Site. In addition, records for Annex II bat species were provided within a 10km radius. These are summarised in Table 13.5. Some of these species are also listed within the Local BAP and/or as priority species within the UK BAP (Ref 13.4). Only species recorded within the last 15 years are included within Table 13.5.

13.29 In addition, a number of species of conservation concern including red data book species were recorded, these are summarised below:

- 4 liverwort species: Red data book species;
- 4 moss species: Red data book species;
- 6 lichen species: Red data book species;
- 1 vascular plant: Red data book species;
- 1 beetle (Coleoptera) species: Red data book species;
- 2 bird species (redstart and woodcock): Local BAP, Welsh Amber Bird species.

13.30 The absence of records should not be taken as confirmation that a species is absent from the search area.



Table 13.5: Protected and Notable Species Records within 2km of the Application Site

<i>Species</i>	<i>Record and Date</i>	<i>Level of Protection</i>
Mammals		
Lesser horseshoe bat	1 record from 11 km east*	International: ECH Annexes II & IV, Bonn Convention Annex II, Berne Convention Annex II National: WCA Schedule 5 & 6, S42, UK BAP County: Local BAP
Pine marten	2 records from 700 m north	International: ECH Annexes V, Berne Convention Annex National: III WCA Schedule 5, S42, UK BAP County: Local BAP
Birds		
Pied flycatcher	1 record from 2500 m north	International: Bonn Convention Annex II National: S42 County: Local BAP
Wood warbler	1 record from 2500 m north	International: Bonn Convention Annex II National: S42, RSPB Amber Data List
Song thrush	1 record from 700 m east	National: S42, RSPB Amber Data List, Welsh Amber Birds, UK BAP County: Local BAP
Lapwing	1 record from 1100 m north	International: Bonn Convention Annex II, ECB, National: S42, RSPB Amber Data List, Welsh Red Bird, UK BAP County: Local BAP
Herpetofauna		
Common toad	1 record from 700 m east	International: Berne Convention Annex III National: WCA Schedule 5 (S9(5)), S42, UK BAP County: Local BAP
Viviparous lizard	1 record from 700 m east	National: WCA Schedule 5, S42, UK BAP County: Local BAP
Common frog	1 record from 700 m east	International: Berne Convention Annex III National: WCA Schedule 5 (S9(5)) County: Local BAP
Invertebrates		
Marsh fritillary	37 records from 500 m north or 500 m east	International: Berne Convention Annex II, ECH Annex II National: WCA Schedule 5, S42, UK BAP County: Local BAP
Small pearl-bordered fritillary	1 record from 700 m east	National: S42, UK BAP County: Local BAP
Small heath	1 record from 700 m east	National: S42, UK BAP
Plants		
Bluebell	2 records from 700 m north-east	National: WCA Schedule 8
<p>WCA: Wildlife and Countryside Act 1981 ECH: European Communities Council Directive on the Conservation of Habitats and Fauna ECB: European Communities Council Directive on the Conservation of Wild Birds S42: NERC Act 2006 Section 42 Species (Priority Species in Wales) Local BAP: Our Natural World – a biodiversity action plan for the Brecon Beacons National Park and Action for Nature: The Local Biodiversity Action Plan for Rhondda Cynon Taff UKBAP: UK Biodiversity Action Plan RSPB Red Data List: Globally threatened species with rapid decline in breeding population in last 25 years. RSPB Amber Data List: Species with unfavourable conservation status in Europe, historical population decline and moderate population decline in last 25 years.</p> <p>*Record outside of search area but it is considered likely that the species will be utilising habitat within search area.</p>		



13.31 In addition to ecological data collected by Middlemarch Environmental Ltd, a 'Baseline Ecology' report was produced by ERM in 2007. The ecological summary included in this ES chapter has taken into account the results of this survey. A copy of this report is included in Appendix 13.1.

Phase 1 Habitat Survey – Habitats Occurring Within the Application Site

13.32 Figure 13.2 shows an Extended Phase 1 Habitat Survey Map of the Application Site. The full text of the Extended Phase 1 Habitat Survey undertaken in May 2008 is provided in Appendix 13.1. A summary of the habitat descriptions from the survey is provided below.

13.33 The following habitats were noted at the time of the survey (listed in alphabetical order). The habitats are described in more detail below.

- Bare ground;
- Broad-leaved plantation woodland;
- Broad-leaved semi-natural woodland;
- Dense scrub;
- Dry ditch;
- Fence;
- Hardstanding;
- Introduced shrub;
- Marshy grassland;
- Running water;
- Scattered broad-leaved trees;
- Scattered scrub; and,
- Semi-improved neutral grassland.

13.34 Bare ground - A small area, comprising of large gravel, formed a soakaway into which all the drains on site entered. This area was predominantly clear of vegetation.

13.35 Broad-leaved plantation woodland - Two areas of plantation woodland were recorded within the Application Site. Both areas comprised young trees and scrub planting, with tussocky semi-improved grassland forming the ground flora. All trees were in good condition with no cracks, crevices or hollows noted. These areas were surrounded by fencing which was in good to moderate condition. Tree species included alder, ash, dogwood, blackthorn, gorse, guelder rose, hawthorn, oak and rose. Ground flora included common grass, ruderal and forb species.

13.36 Broad-leaved semi-natural woodland - Along the northern edge of the site was an area of willow woodland, with occasional birch. The trees were all young to semi-mature and the area appears to have been planted. Occasional gorse formed the understorey within this area whilst the ground flora comprised semi-improved neutral grassland (see below). In addition, an area of willow carr was present within the north-western corner of the site, dominated by early mature willows. Marshy grassland formed the ground flora of this habitat



(see below). The ground within this area had been subject to high levels of poaching by horses, leaving areas of bare soil some of which were damp or full of water.

13.37 Dense scrub - A small area of dense gorse scrub was noted in the north-eastern corner of the site.

13.38 Dry ditch - A shallow, dry ditch was present along the northern edge of the area of willow carr in the north-western corner of the site. A second shallow dry ditch was noted in the south-eastern corner of the site. Both ditches were vegetated by semi-improved neutral grassland (see below) suggesting that the ditch does not regularly hold water.

13.39 Fences - Post and wire fencing generally topped by barbed wire, formed the majority of the site perimeter and also separated a number of internal areas within the site. In addition, concrete posts, remnants of a defunct fence line, were noted along parts of the western and northern site boundaries. The fencing supported minimal vegetation, however occasional lichens including *Cladonia* sp. were noted growing on the fence posts.

13.40 Hardstanding - Two small areas of hardstanding were present along the southern and eastern edges of the site, and provided provisional vehicular access points onto the site from the Fifth Avenue and Ninth Avenue respectively. The area off Ninth Avenue was a continuation of the road and was therefore regularly used as a parking area and turning point and the tarmac was predominantly clear of vegetation. The area of hardstanding off Fifth Avenue was blocked by large boulders to prevent vehicular access to the site and consequently this area was subject to less disturbance. Approximately 15% of the surface was covered by a mixture of moss species with occasional grass and composite species.

13.41 Introduced shrub - A small area of fenced shrub was present along the eastern boundary of the site. This was dominated by sea-buckthorn, with *Pyracantha* and dogwood also noted. In addition, a large butterfly bush was noted just to the north of the area of fenced introduced shrub area.

13.42 Marshy grassland - Marshy grassland dominated the Application Site varying in species composition depending on grazing pressure, topography and proximity to the stream. The central area of the site comprised topographically flat, made-ground with concrete drainage channels, and was subject to horse grazing and poaching. The habitat was dominated by patches of hard and soft rush which comprised between 50 and 80% of the vegetation cover. Grasses, sedges and other species were also noted within this area (see Appendix 13.1 for further details) most notably great burnet (a locally important species in Powys and Brecon Beacons) and black knapweed (a Local BAP species). Some small areas of ephemeral standing water were noted within this area.

13.43 Running water - Two small shallow streams ran through the site, the main one flowing from north to south with the other extending from the north-western corner into the main stream. Both streams were predominantly clear of marginal, emergent and floating vegetation. Small patches of bur-reed, marsh-marigold, water horsetail and water mint were noted within the streams. Sections of the main stream were shaded by overhanging scrub vegetation.



13.44 Scattered broad-leaved trees - The majority of the trees on the site were planted, varying between 1 and 4 m high, with many still attached to tree stakes. A number of young scattered trees were also noted along the bank of the main stream. Species included alder, ash, rowan, whitebeam and goat willow. None of the trees on site were suitable for use by bats for roosting.

13.45 Scattered scrub - Areas of scattered scrub were present around the edges of the site (mainly the southern boundary and in the north-eastern corner). Gorse was the most frequent species present, with occasional hawthorn, rose and bramble.

13.46 Semi-improved neutral grassland - The unmown road verges along Ninth Avenue and Fifth Avenue comprised semi-improved neutral grassland. The sward was dominated by grass species with comprised approximately 75% of the cover. Black knapweed (a Local BAP species), tufted vetch, common vetch, and common bird's-foot-trefoil were amongst the more common forb species within this sward. A larger area of semi-improved grassland was noted at the south-eastern corner of the site. Scattered common spotted and southern marsh orchids (c. 25 plants) were present within this area and a single patch of five devil's bit scabious plants were noted on the eastern edge of this area

Protected and Notable Species Surveys

13.47 Surveys for protected and notable species were completed to identify the presence / absence of such species using the Application Site. The protected species included within the survey criteria include:

- Badger;
- Bat species;
- Breeding birds;
- Great crested newt;
- Marsh fritillary;
- Otter;
- Reptile species; and
- Water vole.

13.48 Badgers - Badger surveys consisting of a visual inspection of the site and 30m around the site boundary where access was possible, for signs of badger presence, including setts, latrines, foraging signs and tracks were completed in May 2008. The field survey, which comprised an extensive search of all suitable habitat types within the Application Site identified no signs that the site is currently being used by badgers. As the majority of the site consists of damp and marshy ground this would make it unsuitable for badgers to utilise for building setts. The drier areas in the north-eastern corner of the site may provide suitable areas for badgers to build setts, however these could be thoroughly searched and no setts or evidence of badger activity was noted within this area of the site.

13.49 Bats - A daytime (pre-dusk) walkover survey of the Application Site for bats was conducted. A visual assessment was undertaken of the site for activity and signs of possible bat presence and all likely roosting areas were visually assessed. In addition, a series of targeted nocturnal surveys were conducted (continuing until 1.5 hours after sunset) to determine whether bats are using those areas of the site deemed to exhibit greatest potential. The nocturnal survey was conducted using electronic bat detectors with computer



analysis of bat detector recordings completed. The surveys were undertaken in May, July and August 2008. The initial bat surveys identified that there were no features on site which could be utilised by bats as a roost. Some of the habitats on site provided suitable foraging habitat (scattered trees, broadleaved woodland, dense scrub and running water). With respect to lighting at night, the northern and western boundaries of the site were predominantly unlit, however the southern and eastern boundaries of the site were lit by regularly spaced street lights (approximately 20m intervals) and bright lights were located within the water treatment works at the north-eastern corner of the site. Two separate nocturnal surveys were undertaken, each concentrating on different corners of the site. A single common pipistrelle was detected commuting along the western boundary of the site on only one of the two nocturnal surveys. The limited commuting activity recorded indicates that the Application Site does not contain important commuting features for the local bat populations. Common and soprano pipistrelles were recorded foraging along the edges of the Application Site during the survey period, with the western boundary being most frequently utilised. The timing of the bat activity recorded on site suggests that the bats noted were not roosting in close proximity to the Application Site.

13.50 Breeding birds - The methodology used for the breeding bird survey follows the Common Bird Census (CBC) as utilised by the Royal Society for the Protection of Birds (RSPB) and the British Trust for Ornithology (BTO) (Ref 13.5) and involved walking the entire survey site and passing within 50m of every point. All bird data was recorded onto maps and a final species list is compiled. Particular note was made of any Schedule 1 Species, National and Local BAP Priority Species and those listed as being of Conservation Concern (Red and Amber Listed). The surveys were completed in May and June 2008. Of the 19 species of bird noted using the site during the survey visits, 8 species were recorded to be breeding on the site. The surveys show that the site is of value for a range of National and Local Biodiversity Action Plan Priority Species and RSPB Red and Amber Listed Species of Conservation Concern including:

- Three National BAP Species – skylark and song thrush;
- Two local BAP Species – skylark and song thrush;
- Three RSPB Red Listed Species – skylark, song thrush and starling;
- Eight RSPB Amber Listed Species – green woodpecker, lesser black backed gull, swallow, tree pipit and willow warbler.

13.51 The most valuable features/habitats recorded on site for breeding birds are the areas of marshy grassland within the centre of the site. This area supported one pair of skylark and two pairs of meadow pipit. The presence of skylark is of significance in a local, county and national context. The woodland and scattered trees which form the site's boundary features are also deemed to be valuable for species such as willow warbler, song thrush, blackbird, robin and wren. The presence of song thrush is of significance in a local, county and national context. Concentrations of breeding birds were consistently noted along these boundary features.

13.52 Great Crested Newts - A habitat assessment of the land surrounding the development area (up to 500m from the Application Site) for suitable breeding and terrestrial habitat was undertaken. In order to assess the habitat suitability for amphibians in the development area, including great crested newts, the following criteria were considered: the presence of suitable breeding habitats in the vicinity of the site; the presence of suitable



terrestrial habitats within the development site; and, the presence of habitat corridors allowing newts to commute into the site.

13.53 The land within the Application Site was considered to provide optimal foraging habitat for great crested newts but the site has no areas of permanent standing water, and ephemeral pools of water within the site were less than 0.1m deep, with no areas of open water suitable for great crested newts to undertake breeding displays. The larger stream on site was considered to be sub-optimal for use by great crested newts as it has a significant flow, limited egg laying habitat and numerous small fish were present. The smaller stream had a slower flow and no fish were noted and more marginal and emergent vegetation provided suitable egg laying habitat. The water was however highly turbid which seriously impaired visibility and makes it sub-optimal for use by displaying great crested newts. The marshy grassland and semi-improved grassland habitats which dominate the site provide suitable foraging habitats for great crested newts, and the areas of scrub and woodland may provide suitable foraging habitat and areas of refugia.

13.54 A single water body, Penderyn Reservoir, was identified within a 500m radius of the Application Site. The reservoir is located approximately 50m north of the site with suitable terrestrial habitat connecting the survey area and the reservoir. In addition, the habitat to the north, west and north-east of the site was considered to provide optimal foraging habitat with good connectivity for this species.

13.55 Penderyn Reservoir was approximately 10ha in size, far exceeding the preferred size range for ponds (50-250 m²) which support great crested newt breeding activities (Ref 13.X). The water body contained no aquatic vegetation and therefore lacked suitable egg laying habitat and the water clarity was low which would make it sub-optimal for great crested newt mating displays. The presence of trout within the reservoir further decreases the suitability of this water body. A Habitat Suitability Index (HSI) Assessment of the reservoir was completed which identified that the HSI Score was 0.39 which represented poor suitability for use by great crested newts.

13.56 A total of eight ponds were located within a 1km radius of the development site, the closest of which was located approximately 600m west. Due to the distance of these ponds from the Application Site these ponds were not included within the great crested newt assessment. Whilst great crested newts are known to travel up to 1km from their breeding ponds during the terrestrial phase of their life cycle, they generally only travel between 250 to 500m when the surrounding foraging habitat is optimal. Only one of the ponds, located 800m to the north-east of the site, was connected to the site by continuous suitable terrestrial habitat. The rest of the ponds were separated from the site by at least one road. Whilst these roads are not main roads and therefore are not considered to form impermeable barriers to newts, the lack of habitat connectivity together with the distance would decrease the likelihood of any great crested newts within these ponds utilising the development site.

13.57 Marsh fritillary - Surveys for this species were undertaken in three stages to determine the presence of marsh fritillary within the Application Site. The first stage involved an initial habitat and food plant survey of the site and the surrounding area to provide an assessment of the breeding potential within the site itself and whether there is any potential for dispersal into surrounding habitats. The marsh fritillary is associated with two main habitat



types: damp neutral or acidic grasslands (Rhos pastures); and, dry chalk and limestone grasslands. The main larval foodplant is devil's-bit scabious, with field scabious and small scabious occasionally used. The second stage involved using the Butterfly Monitoring Scheme methodology, to complete a series of counts along a fixed route across the site during given weather conditions. Adults seen within 5m of each side of the transect route were recorded. The final stage of the survey depended on the quantity of food plant across the site, and included survey using quadrats or by examination of the individual plants for the larval form and eggs of the marsh fritillary. No marsh fritillaries (adults, larvae or eggs) were recorded during the surveys. The site provided sub-optimal habitat for marsh fritillary, with only a single small patch of devil's bit scabious (the larval food plant) noted. In addition, the sward height of the grassland was too high as the species prefer intermediate to shorter sward lengths.

13.58 Eleven species of butterfly were recorded during the survey, including three species of conservation concern listed on the UK Biodiversity Action Plan: small heath; small pearl bordered fritillary; and, wood white, which have undergone population decreases of 52%, 70% and 64% respectively over the last 20 to 30 years (Ref 13.6). This indicates that the site provides an important habitat for these species.

13.59 Otter - The field survey for otter consisted of an initial walkover survey assessing the site for habitat suitability, complemented by a detailed search for otter signs within 500m of the site, paying particular attention to all watercourses and water features. The streams and marshy grassland on site provided otters with suitable foraging habitat. The dense scrub at the southern end of the Application Site (outside of the site boundary) may provide a suitable resting area for otters, but the banks within the site were relatively open and provided little opportunities for otters to hide. No evidence of otter usage was noted during the survey. Otters do not always leave evidence of their presence, especially if the population density within an area is low (Ref 13.7) however the lack of evidence suggests that this length of watercourse within the site is not regularly utilised by this species.

13.60 Reptiles - Reptile surveys were completed in May and June 2008. Survey transects were identified on site to ensure that habitats within the Application Site with the potential to support reptiles were sampled. Any important reptile features such as vegetation piles, sunny aspects, log piles; abundant food supply (invertebrates etc) were also noted. Temporary reptile refugia (0.50 x 0.50 m roofing felt tiles) were established along the transect lines. These refugia were checked during 5 inspection visits undertaken in suitable weather conditions. The site provided suitable resources for reptiles which included: woodland and scrub areas providing commuting, foraging and hibernation sites; grassland habitats providing foraging and commuting sites; hardstanding providing basking areas for reptiles; and, running water providing foraging habitat for grass snake. During the survey visits a single juvenile slow worm was recorded at a single point on the western edge of the marshy grassland habitat. No other reptiles were identified during the survey visits.

13.61 Water Voles - The survey methodology involved an assessment of water features running through and around the Application Site (500m upstream and downstream where possible) to determine the presence/absence of, and suitability for water voles. An assessment will be made of the suitability of the habitat, and, where appropriate, a search made for possible burrows and signs of water vole activity such as: droppings; latrine sites;



feeding stations and 'lawns'; footprints and tracks or 'runs'; and, burrows. Water voles are closely associated with fresh water habitats, generally slow-flowing, less than 3m wide and approximately 1 m deep, including rivers, ditches, lakes and canals. They favour steep banks, which need to be suitable for burrowing and well vegetated. Their diet is almost exclusively vegetarian, including grasses, reeds and other herbaceous vegetation. The streams within the Application Site were considered to provide sub-optimal water vole habitat owing to the frequently shaded nature of the channel provided by adjacent scrub and woodland. The streams only contained occasional patches of marginal and emergent vegetation and therefore provide limited food resources for water voles. In addition, the banks were generally either sparsely vegetated where they were shaded by scrub and trees, or were bare where they were eroding away and thus providing sub-optimal cover for water voles. No evidence of water vole presence i.e. burrows, latrines, grazed vegetation was detected along the surveyed watercourses within, and adjacent to, the Application Site.

13.62 Other notable species recorded using the site (but not necessarily breeding) included:

- Common frog, common toad and smooth newt - all Local BAP species;
- Starling - UK BAP species;
- Green woodpecker, swallow and meadow pipit - RSPB Amber Data List species;
- Cinnabar moth caterpillar and wood white butterfly - UK BAP species;
- Four spotted chaser and large red damselfly - Locally Important Species in Powys and Brecon Beacons.

13.63 The results of the field and desk studies were compared against national and appropriate local Biodiversity Action Plans (BAPs). Table 13.6 shows the habitats and species that have been recorded within the Application Site (or are appropriate to the Application Site) and are listed on the Section 74 list of habitats and species of principal importance for the conservation of biological diversity in England. (i.e. National BAP target species and habitats) and/or the local Biodiversity Action Plans: 'Action for Nature: The Local Biodiversity Action Plan for Rhondda Cynon Taff' and 'Our Natural World - the Local Biodiversity Action Plan for the Brecon Beacons National Park' (currently under review).



Table 13.6: Summary of Biodiversity Action Plan Habitats and Species Recorded at the Application Site

Species	UK BAP*	Rhondda Cynon Taff BAP	Brecon Beacons BAP
Habitats	Neutral grassland (b)	-	Neutral grassland
	Rivers and streams (b)	Rivers and streams	Rivers and streams
	Broadleaved, mixed and yew woodland (b)	-	Woodland
Species	Skylark	Skylark	Skylark
	Song thrush	Song thrush	Song thrush
	Slow worm	-	Slow worm
	Common toad	Amphibians	Common toad
	Small pearl-bordered fritillary	Small pearl-bordered fritillary	Small pearl-bordered fritillary
	Small heath	-	Small heath
	Wood white	-	-
	Bats (various species)	All bats	Bats
	-	Black knapweed	-
	(b) Broad habitat, (p) Priority habitat		

POTENTIAL IMPACTS

Nature Conservation Evaluation

13.64 Habitat features described within the Baseline Conditions section were evaluated against the Nature Conservation Evaluation criteria provided in Table 13.1. The evaluation of each habitat feature also took into account the presence (or potential presence) of any populations of protected species, species listed as priority species on the UK BAP and species considered to be scarce or threatened at a national level as this can, depending on the level of use by a particular species, elevate its conservation value.

Statutory Sites of Nature Conservation Importance

13.65 Two Special Areas of Conservation (SAC) sites were noted within 2km of the Application Site: Blaen Cynon; and Coedydd Nedd a Mellte. These sites support internationally rare species and habitats and are considered to be of international importance for nature conservation.

13.66 Three Sites of Special Scientific Interest (SSSIs) were noted within 2km of the Application Site: Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI (which are part of Blaen Cynon SAC) and Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI (which is part of Coedydd Nedd a Mellte SAC). These sites support nationally rare species and habitats and are considered to be of national importance for nature conservation.

Non-Statutory Sites of Nature Conservation Importance



13.67 Seven sites listed as Ancient Woodland were noted within 2km of the Application Site. These sites are considered to be of county importance for nature conservation as they represent areas of habitat that are threatened and declining at a national level.

Habitats

13.68 The marshy grassland and running water habitats within the Application Site are listed on the Local BAPs as habitats of conservation importance. The area and quality of these habitats on the site are relatively limited given the extent and habitat quality of similar habitats within the immediate surrounding area. The marshy grassland however supports a low population of slow worm, and skylark were noted breeding within the grassland. Thus these habitats are considered to have a County importance for nature conservation.

13.69 The remaining habitats noted on site (bare ground, broad-leaved plantation woodland, broad-leaved scattered woodland, dense scrub, dry ditch, fences, hardstanding, introduced shrub, scattered broad-leaved trees, scattered scrub and semi-improved neutral grassland) are all considered to have a negligible importance for nature conservation.

Evaluation of Significance of Impacts

13.70 The activities likely to have an effect on habitats and species can be split into construction effects and operational effects. In this instance construction effects have been assumed to include all works associated with site clearance, land forming/contouring, construction of infrastructure (including services, drainage, roads, car parks etc) and buildings, and landscaping works. Operational effects can be considered as those as a result of on-going anthropogenic use (e.g. lighting, litter generation, habitat damage), vehicle movements, management and maintenance of the infrastructure, buildings and landscaping areas. The activities most likely to have an impact on habitats and species include site clearance, land forming/contouring, all construction works and on-going anthropogenic use of the buildings and infrastructure within the developed site.

Construction

Effects on Statutory Sites of Nature Conservation Importance

13.71 Blaen Cynon SAC (including Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI) - This site is located approximately 100m east of the Application Site and comprises bogs, marshes, fens, heath, scrub, grassland and broad-leaved woodland. The site contains the following Annex I habitats: Northern Atlantic wet heaths (4%), Molinia meadows on calcareous, peaty or clayey-silt laden soils (1.9%), alkaline fens (0.3%) and alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (3.7%). Annex II species listed on the citation include marsh fritillary. Some of the Annex I habitats listed as qualifying features of the SAC are also represented on site but it is not considered that they are contiguous with the habitats on the Application Site due to the lack of habitat connection between the two sites (where habitats exist to the east of the Application Site comprise mainly or closely-mown amenity grassland). Marsh fritillary surveys of the Application Site did not identify any individuals of the species (at any stage in their life cycle) and concluded that the Application Site provided sub-optimal habitat for the species (only one small patch of Devil's bit scabious, the marsh fritillary larval food plant, was noted). Adult marsh fritillary rarely fly



more than 50-100m thus reducing the likelihood of the adults utilising the Application Site which is 100m away at its closest point. Thus it can be concluded that the loss of habitat within the Application Site will not result in a negligible impact on the integrity of the SAC.

13.72 Coedydd Nedd a Mellte SAC (including Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI) - This site is located approximately 1.1km west of the Application Site and is a very large and diverse example of old sessile oak wood. The woods extend along a series of deeply incised valleys and ravines, and contain complex mosaics of sessile oak woodland, ash woodland (some of which is referable to Annex I type Tilio-Acerion forests of slopes, screes and ravines), and transitions to lowland woodland types. The whole site is biologically rich, with many woodland plant communities represented and rich bryophyte and lichen assemblages. Notable higher plant species include wood fescue and the ferns *Dryopteris aemula*, *Hymenophyllum tunbrigense* and *Asplenium viride*. This site is separated from the Application Site by roads and extensive areas of habitat and does not appear to have any habitat connection to the Application Site. The effect of the proposed development on this site can therefore be considered to be negligible with respect to the integrity of the SAC.

Effects on Non-Statutory Sites of Nature Conservation Importance

13.73 Ancient Woodland - The areas of ancient woodland noted within 2km of the Application Site are separated from the application site by Penderyn Reservoir, extensive non-woodland habitats and roads and do not appear to have any habitat connection with the Application Site.

Effects on Habitats

13.74 The proposed development will result in the loss of approximately 0.05ha of bare ground, hard standing and fence habitats. These habitats are of limited ecological value and the effect of the loss of these habitats as a result of the proposed development can therefore be considered to be of negligible significance.

13.75 The proposed development will result in the loss of approximately 0.71ha of broad-leaved plantation, broad-leaved woodland and scattered broad-leaved trees. This area is being utilised by species such as willow warbler, blackbird, robin and wren for breeding. Without mitigation the effect of the proposed development on these habitats can therefore be considered to be a minor adverse effect at a local level.

13.76 With respect to the loss of approximately 0.02ha of dense and scattered scrub and introduced shrubs, these habitats are of limited ecological value and are not specifically providing habitat for protected or notable species. Without mitigation the effect of the proposed development on these habitats can therefore be considered to be of negligible significance.

13.77 The proposed development will result in the loss of approximately 180m of dry ditch. This habitat is of limited ecological value and is not specifically providing habitat for protected or notable species. Without mitigation the effect of the proposed development on this habitat can therefore be considered to be of negligible significance.



13.78 The proposed development will result in the loss of approximately 0.48ha of semi-improved neutral grassland. This habitat is listed on the Local BAP for the Brecon Beacons National Park. Without mitigation the effect of the proposed development on this habitat can therefore be considered to be a minor adverse effect at a local level.

13.79 With respect to the marshy grassland located within the centre of the site, the proposed development will result in the loss of 7.25ha of locally important habitat. This grassland is utilised by amphibians (frogs, toads and smooth newts) and a small population of slow worm for foraging, by a single pair of skylark for breeding and by notable invertebrates for foraging. Without mitigation, the loss of the habitat as a result of the construction activities can therefore be considered to be a minor adverse effect at the County level.

13.80 The proposed development will result in the diversion of a length of running water in the north-western corner of the site. The proposals will not result in the loss of any running water habitat although there will be temporary disturbance to the watercourse while the diversion works take place. Thus this can be considered to be a negligible effect at a site level.

Effects on Species

13.81 Badgers – No badger activity was recorded during the badger surveys. It is therefore anticipated that, without mitigation, the effect of the proposed development on these species will be negligible.

13.82 Bats – No bat roosts were recorded within the Application Site and therefore it can be considered that there will be a negligible impact on roosting bats from the proposed development. Bats were noted foraging along the northern and western boundaries of the site over the broad-leaved woodland areas. Without mitigation it can be considered that there would be a temporary reversible minor adverse impact on foraging bat species.

13.83 Breeding birds – With respect to breeding birds using the Application Site species listed as priority species under the NERC Act 2006 Section 42, UK BAP and Local BAP and as RSPB Red and Amber List, were noted breeding on the site. The most notable of these is skylark and song thrush which both held one breeding territory on the site. Skylark were recorded using the marshy grassland in the centre of the site whilst the song thrush were noted using the semi-improved grassland and scattered scrub along the southern boundary. The majority of the marshy grassland habitat will be lost as a result of the proposed development thus removing the opportunity of this area to be used by breeding skylark. However, given the extent of the similar habitats within the immediate vicinity of the Application Site it is likely that the pair of skylark will find alternative nesting sites within the local area. With respect to the habitats being used by the song thrush, these will be lost from this location as a result of the development. Thus without mitigation it can be considered that there will be a permanent, reversible, minor adverse impact at a county level on breeding bird species using the site.



13.84 Great crested newts – Although the habitats within the Application Site provide suitable foraging habitat, the great crested newt assessment concluded that the waterbodies within 500m of the Application Site are not suitable to support great crested newts and that those waterbodies greater than 500m from the site have minimal habitat connection with the site. Thus it can be concluded that the site is unlikely to support terrestrial phase great crested newts and therefore without mitigation the proposed development can be considered to have a negligible effect on this species.

13.85 Marsh fritillary – The habitats within the site provided sub-optimal habitat for marsh fritillary and no marsh fritillary's were noted during the survey. Thus it can be concluded that the site is unlikely to support marsh fritillary and therefore without mitigation the proposed development can be considered to have a negligible effect on this species.

13.86 Other Butterflies – During the marsh fritillary survey, eleven species of butterfly were recorded using the site. These included small heath, small pearl bordered fritillary and wood white which are all listed as being species of conservation concern of the UK BAP. The small heath butterflies were using the marshy grassland and semi-improved neutral grassland habitats, whereas the wood white and small pearly bordered fritillary were both using the grassland and scattered scrub areas around the edges of the site. There will be loss of habitats being used by these species and therefore without mitigation there can be considered to be permanent irreversible minor adverse effect at a County level.

13.87 Otter – The otter survey did not identify any signs of otter use within the Application Site or within the immediate vicinity. Therefore without mitigation the proposed development can be considered to have a negligible effect on this species.

13.88 Reptiles – A single slow worm was recorded on the Application Site during the survey works. Slow worms will be utilising the marshy grassland and scattered scrub and habitats for foraging and may hibernate within suitable features on the site if these are available. Given the small number of slow worm recorded on site and the suitability of habitat within the immediate vicinity of the site for these species, without mitigation the proposed development can be considered to have a permanent irreversible minor adverse effect on these species at a local level.

13.89 Water vole – The water vole survey did not identify any signs of water vole use within the Application Site or within the immediate vicinity. Therefore without mitigation the proposed development can be considered to have a negligible effect on this species.

Completed Development

Effects on Statutory Sites of Nature Conservation Importance

13.90 Blaen Cynon SAC (including Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI) – With respect to potential effects on the SAC from the completed development the site is separated from the SAC by the sewage works and industrial development and does not appear to have any habitat connection to the site. The main potential effect could be from air pollution created as a result of the operation of the development. Air dispersion modelling has been completed (for full details see Chapter 9:



Air Quality) which shows that the background figure of air pollutants for NO_x and SO₂ far outweighs any process contribution from the proposed development. Thus it can be concluded that there would be no significant effect on the integrity of the SAC from operation of the proposed development.

13.91 The proposed development will likely result in an increase in traffic utilising the A465 road which exists south of the SAC. However, given the likely access route to the site and the distance from the roads to the SAC it is not anticipated that there will be any significant effect on the integrity of the SAC from this.

13.92 The completed development can therefore be considered to have a negligible effect on the SAC.

13.93 Coedydd Nedd a Mellte SAC (including Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI) – With respect to potential effects on the SAC from the completed development the site is separated from the SAC by roads and extensive habitat but does not appear to have any habitat connection to the site given the types of habitats present within the SAC and the development site. The air dispersion modelling did not extend to include this SAC (it fell outside of the grid which was considered), however, the results of the modelling show that there should be no higher concentrations of NO_x and SO₂ outside of the grid. Thus it can be concluded that there would be no significant effect on the integrity of the SAC from operation of the proposed development. Thus the completed development can be considered to have a negligible effect.

Effects on Non-Statutory Sites of Nature Conservation Importance

13.94 Ancient Woodland – With respect to potential effects on the ancient woodland sites from the completed development the site is separated from the SAC by roads and extensive non-woodland habitat and does not appear to have any habitat connection to the site given the types of habitats present within the SAC and the development site. The air dispersion modelling did not extend to include the ancient woodland sites specifically, however, the results of the modelling show that there should be no higher concentrations of NO_x and SO₂ outside of the grid. Thus it can be concluded that there would be no significant effect on the integrity of the ancient woodland sites from operation of the proposed development. Thus the completed development can be considered to have a negligible effect.

Effects on Habitats

13.95 Increases in traffic flow and therefore exhaust-fume pollution may result in the deterioration of habitat quality of the landscaping areas which surround the operational areas of the site. Increased nutrients, such as those produced by exhaust-fumes, will result in the loss of species characteristic of nutrient-poor habitat through being out competed by more robust species, and may cause pollution to the existing ditches and waterbodies. The effects of pollution on such habitats is currently an unknown factor. Without mitigation this can be considered to be permanent, reversible minor adverse effect at a site level.



13.96 Increased human activity and associated issues, e.g. pollution, litter and invasion of non-native species, is considered to be temporary, reversible minor adverse effect at a site level.

13.97 A change of land-use resulting from the proposed development will result in a permanent change in the local ecosystem structure and is considered to be permanent, reversible minor adverse effect at a site level.

13.98 The creation of landscaped habitats within the Application Site is considered to a permanent, irreversible minor beneficial effect at a local level.

Effects on Species

13.99 Depending on the operational requirements of the Developed Site there is the potential for disturbance to bird species which may use the landscape areas for foraging and nesting. This can be considered to be a temporary, irreversible minor adverse effect at a local level.

13.100 Depending on the operational requirements of the Developed Site there is the potential for disturbance to foraging bat species which may still use the landscape area for foraging and, in the future, once trees are suitable matured, roosting. This can be considered to be a permanent, irreversible minor adverse effect at a local level.

13.101 The additional traffic within the Developed Site may result in risks to fauna which exist within the landscape are from crossing access roads within the Application Site. This can be considered to be a permanent, irreversible minor adverse effect at a local level.

MITIGATION

Construction

Statutory Sites of Nature Conservation Importance

13.102 Blaen Cynon SAC (including Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI) – The effect of the proposed development works on this site can be considered to be negligible and therefore mitigation measures are not required.

13.103 Coedydd Nedd a Mellte SAC (including Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI) – The effect of the proposed development works on this site can be considered to be negligible and therefore mitigation measures are not required.

Non-Statutory Sites of Nature Conservation Importance

13.104 Ancient Woodland – The effect of the proposed development works on these sites can be considered to be negligible and therefore mitigation measures are not required.



13.105 With respect to the loss of marshy and semi-improved neutral grassland habitat from beneath the development footprint, within the proposed landscape area to the south of the proposed operational area approximately 0.30ha of grassland habitats will be created surrounding the ponds. It is anticipated that this area will accommodate native species with the potential to enhance the biodiversity value of the area.

13.106 No specific mitigation in respect of the loss of bare ground, hardstanding and fences is required.

13.107 With respect to the loss of broad-leaved woodland, broad-leaved plantation and scattered trees and scrub, the existing habitats areas along the northern and western boundaries (totalling approximately 0.90ha) will be retained and enhanced and in addition, the landscaping areas will provide approximately 0.70ha of woodland and scrub planting, with predominately (but not exclusively) native species used.

13.108 Within the landscape area 0.17ha of open water and associated reedbed/marginal aquatic vegetation will be created within the southern landscape area. These features will not only act as SUDS as part of the drainage scheme for the site but will also provide habitat for use by aquatic and terrestrial invertebrate species, amphibian species, wildfowl and bird species (once the reedbed areas are established). The inclusion of areas of trees and scrub within this environ will provide a mosaic of habitats which would be suitable for use by a range of species.

13.109 The inclusion of a sedum green roof on the visitor centre will provide additional habitats within the site environ. Sedum green roofs have been shown to provide habitat for a range of invertebrate species (Ref 13.8).

13.110 The landscape areas within the Application Site will be designed to enhance the existing and adjacent habitats. Appropriate ecotones (a natural gradation from intensely managed amenity habitat to more natural habitat) from the development to the remaining and adjacent habitats should be implemented. Appropriate native species (or cultivars in the more amenity areas) and species of local provenance should be used.

13.111 To minimise the effects of soil compaction and indirect damage to existing habitats to be retained and hedgerow root systems, the following should take place:

- Ecologically sensitive areas (especially retained habitats within the landscape area) are to be fenced off and no storage/works to take place within the fences; and,
- Where fencing off is not feasible then geotextile material will be used, particularly in areas that will be landscaped.

13.112 Effects resulting from dust and chemical spill will be minimised. Fires will not be permitted on the Application Site and the work force will be made aware of the risks of accidental fires. Appropriate precautions will be instigated.



13.113 Management and enhancement of habitats within the landscape areas will be carried out in accordance with a Management Plan which will be agreed with the relevant authorities prior to implementation. This management plan will ensure the long-term viability of the habitats within the landscape areas and will provide specific measures with respect to the maintenance of identified fauna populations within the site.

Species

13.114 No mitigation is available for habitat loss which will result in the reduction of habitat available for use by skylark. Disturbance to these and other nesting birds can be minimised through avoidance of carrying out vegetation clearance during the nesting bird season, generally accepted to be March – September inclusive. Where this is not feasible the habitats will be checked by a suitably qualified ecologist prior to habitat destruction. If nesting birds are identified then no works will take place that will cause disturbance until the birds have naturally left the nest. Noise disturbance is to be minimised, as discussed in Chapter 10: Noise and Vibration.

13.115 With respect to the butterfly species recorded using the site, the areas of grassland and scrub habitat available for use will be reduced but areas of replacement grassland and scrub habitats will be created within the landscape area.

13.116 Mitigation plans will be developed to minimise the effect on the following species: slow worm. All mitigation plans will be approved by the Countryside Council for Wales prior to implementation. It is anticipated that the mitigation plan will include provision for completion of a trapping and translocation programme to ensure that there is no death or damage to individual slow worms during the construction phase.

13.117 Population levels of slow worm within the receptor area will be monitored on an agreed basis to assess the effect of the proposed development on the species. Species monitoring results will be utilised to feed-back into the Management Plan for the habitats within the landscape area to ensure appropriate management of the habitats in accordance with species requirements.

13.118 To minimise road kill, the majority of vehicle movements will be restricted to be being between 08:00 and 18:00. Thus vehicle movements outside of these hours will be minimal and predominantly associated with operation of the site rather than deliveries.

13.119 To minimise disturbance to nocturnal and roosting wildlife, no night working will be undertaken during the construction phase.



Completed Development

Statutory Sites of Nature Conservation Importance

13.120 Blaen Cynon SAC (including Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI) – The effect of the completed development works on this site can be considered to be negligible and therefore mitigation measures are not required.

13.121 Coedydd Nedd a Mellte SAC (including Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI) – The effect of the completed development works on this site can be considered to be negligible and therefore mitigation measures are not required.

Non-Statutory Sites of Nature Conservation Importance

13.122 Ancient Woodland – The effect of the completed development works on these sites can be considered to be negligible and therefore mitigation measures are not required.

Habitats

13.123 No mitigation is available to minimise the effects of increased traffic flow and therefore exhaust-fume pollution on the habitat quality of the existing adjacent habitats and created habitats within the landscape areas. However, it is likely that stricter national emission control standards would result in reduced levels of exhaust fume pollution from each individual vehicle thus reducing the potential impact of increased traffic flow.

13.124 There is no available mitigation against the effects of increased human activity (particularly around the Visitor Centre) and associated issues. However these can be minimised through education and interpretation of areas being retained or enhanced for wildlife.

Species

13.125 The proposed development will have a landscape buffer strip along these boundaries which will potentially provide foraging opportunities for bats to be retained along these routes. The lighting strategy has been designed to minimize light spill to the northern and western edges of the Application Site. Along the northern boundary there are no lights to be installed at the back of the proposed building thus resulting in the dark commuting corridor being maintained. Along the western boundary the lighting will be associated with the road and therefore focussed to illuminate the road rather than the adjacent landscaping zone.

13.126 The following generic recommendations are made with regard to the development of the site:

- Develop a Mitigation Plan with respect to the presence of slow worm within the Application Site.
- Develop a Construction Ecological Management Plan, once full details and timescales for the development and construction works are known, to minimise risk to the ecology of the site during development.
- Hedge works should be carried out from only one side of the hedge in any one year to retain foraging and nesting sites for birds and other species on the other side.



- The recommendations of BS5837 (2005) and NJUG 10 (as appropriate to operations) should be followed when working close to trees.
- All herbicides should be used in accordance with the manufacturers instructions.
- Avoid vegetation work between March to September inclusive to obviate conflict with the Wildlife and Countryside Act 1981 (WCA) regarding disturbance to nesting birds.
- Environment Agency Pollution Prevention Guidelines, notably PPG1, 5 and 6 should be adhered to throughout works on site.
- Update of protected species surveys if there is a chance the development scheme will be delayed.

13.127 The following generic points in relation to habitat creation and enhancement should be considered:

- Wild/Natural Areas (outer buffer zones around the periphery of the site) - 100% native and local provenance species should be utilised (except in special circumstances).
- Informal Areas (inner buffer zone around the development) - 75% native tree and shrub stock should be used. Non-native stock to be used as landscape features and visual focal points. Of the non-native species used 50% are to be wildlife friendly. A minimum of 60% of the grass seeding is to comprise an appropriate wildflower/grass mix.
- Formal Areas – these areas should comprise 10% native trees and shrubs, 40% ornamental species (wildlife friendly), and, 50% other ornamental species.
- The following points should also be considered:
 - Seed/plant stock to be of local provenance and from a similar ecotone i.e. they should reflect the local site conditions and existing species in each habitat.
 - Wildlife friendly, native cultivars should be favoured wherever possible.
 - Smaller tree/shrub stock to be used whenever feasible.
 - Planting products are to be bio-degradable if possible.
 - Peat-free composts are to be specified.

13.128 Where feasible, the balancing ponds are designed to be wildlife friendly. The inclusion of appropriately designed ponds would support the local BAP in providing habitat for a range of amphibians.

13.129 An appropriate number and type of bird and bat boxes should be erected on the existing / proposed trees and buildings where possible.

13.130 All elements of the mitigation should be monitored throughout the development period and post-development with a view to assessing the efficiency of the proposed strategy and to inform future mitigation strategies/development master planning. The following provides a guideline for monitoring periods:

- | | |
|-------------------------------------|-------------------------------|
| • Nesting/breeding success of birds | three years post-development. |
| • Use of site by reptile species | three years post-development. |
| • Use of site by butterflies | three years post-development. |
| • Monitoring of bat/bird boxes | three years post-development. |



- Tree/hedgerow planting five years post-development.
- Grassland/aquatic vegetation planting five year post-development.
- Health of retained trees/hedgerows five years post-development.

EVALUATION OF RESIDUAL IMPACTS

Construction

Effects on Statutory Sites of Nature Conservation Importance

13.131 Blaen Cynon SAC (including Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI) – The residual effect of the proposed development works on this site can be considered to be negligible.

13.132 Coedydd Nedd a Mellte SAC (including Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI) – The residual effect of the proposed development works on this site can be considered to be negligible.

Effects on Non-Statutory Sites of Nature Conservation Importance

13.133 Ancient Woodland – The residual effect of the proposed development works on these sites can be considered to be negligible.

Effects on Habitats

13.134 The proposed development works within the Application Site will result in the loss of significant areas of marshy grassland. Given the level of mitigation that is available for this loss of habitat the residual effects can be considered to be permanent, irreversible minor adverse effects at a County level.

13.135 The proposed development works within the Application Site will result in the loss of small areas of semi-improved neutral grassland. Given the level of mitigation that is available for this loss of habitat the residual effects can be considered to be temporary, irreversible negligible effects at a local level.

13.136 The proposed development works within the Application Site will result in the loss of areas of broad-leaved plantation, broad-leaved woodland, scattered trees, and scrub habitats. Given the level of mitigation that is available for this loss of habitat the residual effects can be considered to be temporary, irreversible negligible effects at a local level.

13.137 The proposed development works within the Application Site will result in the loss of areas of bare ground, hardstanding and fences. Given the minimal ecological value of these features the residual effects can be considered to be permanent, irreversible negligible effects at a site level.

13.138 The proposed development works within the Application Site will result in the diversion of a section of running water. Given the current minimal ecological value of this



features and the proposed mitigation, the residual effects can be considered to be permanent, irreversible negligible effects at a site level.

13.139 Effects resulting from soil compaction, in addition to those outlined in Chapter 11: Ground Conditions, Drainage and Flood Risk, include alteration of soil structure which may affect the species composition within retained habitats, landscape quality and future reinstatement and planting capabilities in landscape areas. With the mitigation measures detailed above implemented the residual effects of the proposed works can be considered to be a permanent, reversible and negligible effect at the site level.

13.140 Indirect damage to tree root systems during adjacent works is possible. However, with the mitigation measures detailed above implemented the residual effects of the proposed works can be considered to be a permanent, irreversible and negligible effect at the site level.

13.141 A change of land use during the construction phase will result in a temporary change in the local ecosystem structure. No mitigation is available with respect to this effect and therefore this is considered to be a temporary, irreversible minor adverse effect at the local level.

Effects on Species

13.142 The proposed development of the site will result in effects on butterfly species currently using the site. With the mitigation measures detailed above implemented the residual effects of the proposed development on these species can be considered to be permanent, irreversible minor adverse effects at a County level.

13.143 The proposed development of the site will result in effects on breeding bird species including skylark and meadow pipit currently using the marshy grassland within the site. With the mitigation measures detailed above implemented the residual effects of the proposed development on these species can be considered to be permanent, irreversible minor adverse effect at a County level. Clearance of ground in preparation for construction works may result in loss of habitat and disturbance to nesting birds, in particular skylark, if this occurs during the breeding season. With the mitigation measures detailed above implemented the residual effects of the proposed works on this species can be considered to be permanent, irreversible and of negligible significance at a site level.

13.144 The proposed development of the site will result in effects on breeding bird species including song thrush, willow warbler, tree creeper, robin, blackbird and wren currently using the woodland and scrub habitats within the site. With the mitigation measures detailed above implemented the residual effects of the proposed development on these species can be considered to be temporary, reversible negligible effect at a local level.

13.145 The proposed development of the site will result in effects on foraging bat species currently using the woodland and scrub habitats along the northern and western boundaries of the site. With the mitigation measures detailed above implemented the residual effects of the proposed development on these species can be considered to be temporary, reversible negligible effect at a local level.



13.146 The proposed development of the site will result in effects on a small population of slow worm currently using the marshy grassland within the site. With the mitigation measures detailed above implemented the residual effects of the proposed development on these species can be considered to be temporary, irreversible negligible effect at a local level.

13.147 With the mitigation measures outlined above implemented the following residual effects can be considered to be temporary, reversible and negligible effects: dust generation resulting in reduced photosynthetic capacity and palpability of vegetation and therefore a loss of plants and/or invertebrates; accidental fire causing damage to vegetation and habitats; chemical spill resulting in phytotoxicity; increased traffic may result in loss of individuals of protected and/or other species; and disturbance to nocturnal or roosting wildlife.

Completed Development

Effects on Statutory Sites of Nature Conservation Importance

13.148 Blaen Cynon SAC (including Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI) – The residual effect of the completed development works on this site can be considered to be negligible.

13.149 Coedydd Nedd a Mellte SAC (including Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI) – The residual effect of the completed development works on this site can be considered to be negligible.

Effects on Non-Statutory Sites of Nature Conservation Importance

13.150 Ancient Woodland – The residual effect of the completed development works on these sites can be considered to be negligible.

Effects on Habitats

13.151 With the mitigation proposed implemented, it can be considered that the residual effects associated with the following would be permanent, irreversible negligible to minor adverse effects at a site to local level: increases in traffic flow and therefore exhaust-fume pollution resulting in the deterioration of habitat quality of the retained and created habitats within the landscape area; increased nutrients, such as those produced by exhaust-fumes, resulting in the loss of species characteristic of nutrient-poor habitat through being out competed by more robust species; pollution to the existing watercourses.

13.152 With the mitigation proposed implemented, it can be considered that the residual effects associated with increased human activity and associated issues (e.g. pollution, litter and invasion of non-native species) would be permanent, reversible negligible effects at the site level.

13.153 A change of land-use resulting from the completed development will result in a permanent change in the local ecosystem structure. As no mitigation is available for this, it is



considered that the residual effects will be permanent, irreversible minor adverse effects at the local level.

13.154 The residual effect of the creation of landscaped habitats within the Application Site is considered to a permanent, irreversible minor beneficial effect at a local level.

Effects on Species

13.155 Depending on the operational requirements of the developed site there is the potential for disturbance to bird species which may continue to use the landscape areas. With the mitigation measures detailed above implemented the residual effects can be considered to be permanent, irreversible negligible effects at the local level.

13.156 Depending on the operational requirements of the developed site there is the potential for minor disturbance to foraging bat species which are likely to still use the habitats within the landscape areas for foraging. With the mitigation measures detailed above implemented the residual effects can be considered to be permanent, reversible negligible effects at the local level.

13.157 The additional traffic within the developed site may result in risks to fauna which exist within the landscape areas from crossing access roads within the Application Site. With the mitigation measures detailed above implemented the residual effects can be considered to be permanent, irreversible negligible effects at a local level.

SUMMARY

13.158 The Application Site is situated 100m west of Blaen Cynon SAC (which encompasses Cors Bryn-y-Gaer SSSI and Woodlands Park and Pontpren SSSI). In addition, Coedydd Nedd a Mellte SAC (which encompasses Coedydd Nedd a Mellte SSSI and Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI is located within 1.1km west of the Application Site.

13.159 There are seven ancient woodlands within 2km of the Application Site. There are no non-statutory designated conservation sites within 2km of the Application Site.

13.160 Thirteen different habitats were recorded on the Application Site. Of these three are listed as broad habitats on the UK BAP and the Local BAPs: neutral grassland; rivers and streams; and woodland.

13.161 Protected species records from within a 2km radius of the site include nationally scarce invertebrates, various bird species, toad, frog and common lizard, bats, pine martin and bluebell. Species surveys completed within the application site identified that the site supported populations of UK and Local BAP listed butterflies, reptiles (slow worm) and breeding birds, and provided foraging areas for bats.

13.162 With appropriate mitigation, the ecological effects resulting from the Proposed Development will primarily be negligible to minor adverse effects at a site to County level.



The inclusion of habitats within the Landscape Zone will result in predominately minor beneficial effects at a local level.

13.163 Table 13.7 contains a summary of the ecological likely significant effects of the Proposed Development. Appendix 13.2 provides a review of relevant planning policies relating to ecology.

13.164 No details of cumulative schemes were provided and therefore an assessment of the cumulative effects of developments within the area has not been completed as part of this chapter.

Table 13.7: Summary Impacts Table

<i>Proposed Activity</i>	<i>Characterisation of unmitigated impact on the feature</i>	<i>Significance without mitigation and confidence level</i>	<i>Mitigation and enhancement</i>	<i>Residual significance and confidence level</i>
CONSTRUCTION IMPACTS				
Effects on Statutory Sites of Nature Conservation Importance				
Blaen Cynon SAC	None	Probable negligible impact at international level	Not required.	Probable negligible impact at international level
Cors Bryn-y-Gaer SSSI	None	Probable negligible impact at international level	Not required	Probable negligible impact at international level
Coedydd Nedd a Mellte SAC & SSSI	None	Probable negligible impact at international level	Not required	Probable negligible impact at international level
Woodlands Park and Pontpren SSSI	None	Probable negligible impact at national level	Not required	Probable negligible impact at national level
Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI	None	Probable negligible impact at national level	Not required	Probable negligible impact at national level
Effects on Non-Statutory Sites of Nature Conservation Importance				
Ancient Woodland Sites	None	Probable negligible impact at county level	Not required	Probable negligible impact at county level
Effects on Habitats				
Loss of bare ground, hardstanding and fence habitats	None - habitats not being used by any species.	Probable negligible impact at site level	Not required	Probable negligible impact at site level



Loss of broad-leaved semi-natural woodland, broad-leaved plantation woodland and scattered broad-leaved trees	Loss of habitat being used by common invertebrates, and common birds for foraging and nesting and by bats for foraging.	Certain permanent irreversible minor adverse impacts at local level	Retention of existing habitat along northern and western boundaries and creation of broad-leaved woodland/ habitats within landscape zone	Probable negligible impact at local level
Loss of dense and scattered scrub and introduced shrub habitats	Loss of habitat being used by invertebrates, mammals and birds for foraging and nesting	Certain permanent irreversible negligible impact at site level	Creation of scrub habitats within landscape zone	Probable negligible impact at site level
Loss of marshy grassland habitats	Loss of moderate area of Local BAP habitat which supports butterfly and bird species listed on the UK and Local BAPs	Certain permanent irreversible impact at local level	Creation of grassland habitats within the landscape zone	Probable minor adverse impact at the County level
Loss of semi-improved neutral grassland	Loss of small area of Local BAP habitat	Certain permanent irreversible minor adverse impact at local level	Creation of grassland habitats within the landscape zone	Probable negligible impact at the local level
Loss of dry ditch habitats	None - habitats not being used by any species.	Probable negligible impact at site level	Not required	Probable negligible impact at site level
Temporary disturbance to running water habitats	Potential pollution of watercourses as a result of diversion works.	Probable negligible impact at site level	Protection of watercourses during diversion works to ensure no pollution enters watercourse.	Probable negligible impact at site level
Various habitats	Effects of soil compaction on habitats	Probable temporary reversible impacts within site	Delineation of works areas and areas where plant, equipment and storage is not allowed. Use of geotextile over soils within temporary works/storage areas if within the areas of landscaping.	Probable negligible impact at site level
Various habitats	Effects on habitats from dust generation	Probable temporary	Minimisation of dust through control of works during construction phase	Probable negligible impact at site level



Various habitats	Effects on habitats from increased risk of fire	Probable temporary reversible impacts within site.	No fires to be allowed on site. Construction workers to be made aware of risks and informed of controls.	Probable negligible impact at site level
Various habitats	Effects on habitats from chemical spill	Probable temporary impacts at site level	Use of chemicals on site to be heavily controlled. Construction workers to be made aware of risks and informed of controls.	Probable negligible impact at site level
Local ecosystem	Change in local ecosystem structure from development	Probable temporary reversible impacts at local level	None available	Probable minor adverse impact at local level
Effects on Species				
Loss of habitat for terrestrial invertebrates	Loss of habitat being utilised by a range of butterfly species including small heath, small pear-bordered fritillary and wood white which are listed on Local BAP	Certain permanent irreversible minor adverse impact at County level	Creation of grassland and scrub habitats within landscape area and management of area for use by butterflies	Probable minor adverse impact at County level
Loss of habitat for breeding birds - skylark	Loss of marshy grassland habitat used by breeding skylark	Certain permanent irreversible minor adverse impact at County level	No mitigation available.	Probable minor adverse impact at County level.
Loss of habitat for breeding birds – song thrush	Loss of neutral grassland and scattered scrub habitat used by breeding song thrush	Certain permanent irreversible minor adverse impact at County level	Creation of woodland, woodland edge and scrub habitats within landscape area	Probable negligible impact at County level
Loss of habitat for breeding birds - other species using habitats on site	Loss of grassland, woodland and scrub habitats being used by breeding birds.	Certain permanent irreversible impact at local level	Creation of woodland, woodland edge and scrub habitats within landscape area	Near-certain negligible impact at local level



Disturbance to birds on-site during breeding	Potential to affect breeding success in local area	Probable temporary irreversible impact at local level	Ensure vegetation clearance works are carried out (a) outside of the breeding season or (b) after ecologist has confirmed no birds are breeding within / immediately adjacent to vegetation.	Near-certain negligible impact at site level
Disturbance to birds off-site during breeding	Potential to affect bird territories and breeding success in local area	Probable temporary irreversible impact at local level	Minimise noise during construction.	Probable negligible impact at local level
Loss of roosting bat habitat	None	Near-certain negligible impact at County level	None required	Near-certain negligible impact at County level
Loss of foraging bat habitat	Potential to affect bat foraging routes due to vegetation clearance.	Probable temporary reversible minor adverse impact at local level	Creation of suitable habitats within landscape zone along northern and western site boundaries to ensure foraging routes for bats are maintained.	Probable negligible impact at local level
Loss of habitat for slow worm	Loss of habitats being used by small population of UK BAP species, slow worm.	Probable permanent irreversible minor adverse impact at local level	Development and implementation of a mitigation strategy to ensure no loss of favourable conservation status of species from development.	Near-certain negligible impact at local level.
Various fauna	Disturbance to various fauna from increased noise	Probable temporary reversible impacts at local level	Control of noise levels during construction in accordance with details provided in Chapter 10: Noise and Vibration.	Probable negligible impacts at local level
Various fauna	Loss of individuals from increased traffic	Probable temporary irreversible impacts at local level	Construction working areas, storage areas and haulage routes to be clearly defined and marked out. Construction workers to be informed of restricted areas.	Probable negligible impacts at local level



Local ecosystem	Change in local ecosystem structure from development	Probable temporary reversible negligible impacts at local level	None available.	Probable negligible impacts at local level
COMPLETED DEVELOPMENT				
<i>Effects on Statutory Sites of Nature Conservation Importance</i>				
Blaen Cynon SAC	Potential impacts from emissions from increased traffic movements along A465	Probable negligible impact at international level	None available.	Probable negligible impact at international level
Cors Bryn-y-Gaer SSSI	None	Probable negligible impact at international level	Not required	Probable negligible impact at international level
Coedydd Nedd a Mellte SAC & SSSI	None	Probable negligible impact at international level	Not required	Probable negligible impact at international level
Woodlands Park and Pontpren SSSI	None	Probable negligible impact at national level	Not required	Probable negligible impact at national level
Dyffrynoedd Nedd a Mellte a Moel Penderyn SSSI	None	Probable negligible impact at national level	Not required	Probable negligible impact at national level
<i>Effects on Non-Statutory Sites of Nature Conservation Importance</i>				
Ancient Woodland Sites	None	Probable negligible impact at county level	Not required	Probable negligible impact at county level
Effects on Habitats				
Adjacent habitats and habitats in landscaping areas	Deterioration of habitats as a result of increased traffic flow and exhaust fumes	n/a	None available.	Probable minor adverse impact at site level
Adjacent habitats and habitats in landscaping areas	Deterioration of habitats from increased human activity e.g. litter, pollution, disturbance	Probable temporary reversible impact within site	Control of public access to identified areas within the areas of landscaping.	Probable negligible impact at site level



Local ecosystem	Change in local ecosystem structure as result of development	Probable temporary irreversible negligible impacts at local level	None available. Local ecosystem will alter eventually.	Probable minor adverse impact at local level
Landscaping area	Creation of habitats within the areas of landscaping	n/a	Inclusion of additional habitats within the areas of landscaping such as: grassland, open water, marginal vegetation, woodland and scrub.	Probable permanent reversible minor beneficial impact at local level
Effects on Species				
Bird species	Disturbance to bird species using the areas of landscaping for feeding / nesting	Probable temporary irreversible minor adverse impacts at the site level	Minimise disturbance in ecologically sensitive areas. Control of public access.	Probable negligible impact at local level
Bat species	Disturbance to foraging bat species using the areas of landscaping for foraging	Probable temporary irreversible minor adverse impacts at the site level	Minimise lighting and disturbance in ecologically sensitive areas.	Probable negligible impact at local level
<i>Various species</i>	<i>Death / injury to individuals from increased traffic and / or road design</i>	<i>Probable permanent irreversible minor adverse impacts at the local level</i>	<i>Minimise risk from traffic through control of movements and design of road system. Minimal use of roads at night.</i>	Probable negligible impact at site level



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