

PRELIMINARY ECOLOGICAL APPRAISAL (PEA) REPORT

18th December 2019

Orbit Business Centre

Merthyr Tydfil County Borough Council

SUMMARY

INTRODUCTION

- A Preliminary Ecological Appraisal (PEA) of an area of land northwest of the Orbit Business Centre, Rhydyar Business Park, Merthyr Tydfil was requested by Merthyr Tydfil County Borough Council.
- The PEA is required to inform the construction of a car parking area.

METHODOLOGY

- The PEA consisted of a desk study and field survey following the Chartered Institute of Ecology and Environmental (CIEEM) Guidelines for Preliminary Ecological Appraisal, Second Edition (2017).

KEY ISSUES

- The development may result in impacts on the following protected species and habitat:
 - Bats
 - European otter
 - Common dormouse
 - Great crested newt
 - Nesting birds
 - Reptiles
 - West European hedgehog
 - Invertebrates
 - Open Mosaic Habitat on Previously Developed Land (OMHPDL)

RECOMMENDATIONS & ENHANCEMENTS

- Bats (impacts of foraging and commuting habitat compensated for through):
 - Linear infiltration basin planted with common reed
 - Change of grass cutting regime to the south and east of Orbit Centre
 - Offsite pond creation to the southeast of Orbit Centre + appropriate planting scheme
 - Lighting plan
- Common dormouse:
 - Lighting plan
 - Precautionary measures for onsite vegetation removal
- European otter (and badger)
 - Onsite safety measures
 - Lighting plan
- Great crested newt
 - Pre-commencement check of ponds
 - Offsite pond creation to the southeast of Orbit Centre + appropriate planting scheme
- Reptiles
 - Vegetation management – staged, directional cut
- West European hedgehog
 - Gaps left at bases of onsite fences/walls (if proposed)
 - Cautious working when clearing habitat
- Invertebrates
 - OMHPDL habitat to remain in the north and scrub managed out
 - Change of grass cutting regime to the south and east of Orbit Centre
 - Offsite pond creation to the southeast of Orbit Centre + appropriate planting scheme
- OMHPDL (see measures for bats and invertebrates)
- Bat and bird boxes added to plantation, mixed woodland screening habitat
- Addition of devil's bit scabious to wetland area to the southeast of Orbit Centre

CONCLUSIONS

- Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.
- This ecological report will remain valid for a period of 18 months from the date of the last survey visit. Further surveys may be required to update the site information if planning is not obtained or works do not commence within this time.

INTRODUCTION

A Preliminary Ecological Appraisal (PEA) was requested by Merthyr Tydfil County Borough Council for an area of land to the northwest of the Orbit Business Centre, Rhydyar Business Park, Merthyr Tydfil, centred on grid reference SO 04711 05331.

The PEA is required to inform the construction of a car parking area.

Site description

The site is found to the south of Merthyr Tydfil town centre, close to the Rhydyar roundabout on the A470 in Merthyr Tydfil County Borough Council.

From aerial images (see Figures 1 and 2), the site appeared to consist of an area of grassland with some encroaching scrub. Immediately adjacent to the site (to the northwest, north, east and southeast) there was car parking and roads, serving office blocks and commercial units, including the Orbit Business Park and Welsh Government offices. To the west and southwest there was plantation woodland screening the A470.

In the wider environment to the west of the A470 there were large areas of woodland and grassland. To the east of the A470 there were further commercial units (including the Rhydyar Leisure Village), residential properties and gardens, woodland pockets and amenity grassland and the wooded River Taff corridor.

The closest water to the site is c.500m to the east of the site (the River Taff).



Figure 1 – Aerial image of the site (red line is the site boundary). ©2019 Google, imagery date 16/08/2016.



Figure 2 – Wider aerial image of the site (red line is the site boundary). ©2019 Google, imagery date 16/08/2016.

Aims of the PRA report

The PEA report aims:

- to provide baseline ecological information required for the local planning authority to assess the impacts of the proposed development on protected and priority habitats.
- to inform if further survey work is needed and/or mitigation or compensation measures required.

METHODOLOGY

Desk study

A biodiversity desk study was undertaken in October 2019 (see Table 1).

Table 1 – Sources of biodiversity and ecological records.

Data source	Information / search buffer
South East Wales Biodiversity Records Centre (SEWBRc)	Protected and Priority Species / 2km Sites of local importance / 1km
Multi-Agency Geographic Information for the Countryside (MAGIC) ¹	International statutory designations / 5km National statutory designations / 2km

The search buffers are enough to cover the potential zone of influence (Zol²) of the proposed development.

The impact of the proposed development on the biological integrity of any nearby designated protected sites has been considered.

Field survey

A field survey was undertaken on the 16th October 2019.

Habitat types present on each site were mapped using standard Phase 1 survey habitat classification hierarchical alphanumeric codes (JNCC, 2010). An assessment was undertaken of the possible presence of priority and protected species and of the likely importance of habitat features for such species in the context of the desk study information. Any stands of non-native invasive plant species (as listed in Schedule 9 of the Wildlife and Countryside Act (1981) as amended) were mapped. Incidental sightings of priority and protected species and/or their field signs were documented along with any priority habitat types.

- Species and habitats protected by UK or European legislation (see Appendix IV);
- Priority species and habitats as specified by Schedule 7 of the Environment (Wales) Act 2016.
- UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (LBAP) species;
- Nationally rare or nationally scarce species;
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

A PEA habitat map was produced including target notes to highlight issues of ecological significance.

¹ <http://magic.defra.gov.uk/MagicMap.aspx>

² Zol definition – ‘the areas/resources that may be affected by the biophysical changes caused by activities associated with a project’ (CIEEM, 2016).

Surveyor information

The PEA was undertaken by Matt Davies (see Table 2 for further information).

Table 2 – Surveyor information.

Surveyor	Licences	Ecological experience
Matt Davies Ph.D., B.Sc. (Hons), MCIEEM	Bat Dormouse	Holds a Ph.D. (Chemical communication in the European otter). Knowledge of otter and mustelid ecology in general. Experienced in undertaking bat surveys and is a licenced bat ecologist in Wales and England. Experienced in undertaking common dormouse surveys and is a licenced dormouse ecologist in Wales and England. Experienced in undertaking Preliminary Ecological Appraisals in relation to development across a range of sites in south Wales and south-east England.

Limitations and assumptions

The desk study and field survey will not produce an exhaustive list of plants and animals in relation to the site. In terms of the desk study - species are sometimes under-recorded and not represented in records received from local biological records centres. In terms of the field survey – the presence of plants and animals can be limited by certain factors, e.g., seasonality and activity and dormancy periods.

Notwithstanding this, the habitat types present onsite can be identified regardless of the time of year the survey is undertaken. In addition, an assessment can be made nature conservation value of a site and its suitability to support protected or priority species.

No other limitations were encountered or assumptions made during either the desk study or the field survey.

RESULTS

Desk study

Designated sites (statutory) – there were no international statutory designations within 5km of the site and one national statutory designation (Site of Special Scientific Interest - SSSI) within 2km of the site (see Table 3 for further details).

Designated sites (non-statutory) – there were three non-statutory designations - all Sites of Interest for Nature Conservation (SINCs) within 1km of the site (see Table 3 for further details).

Table 3 – Summary of designated sites in range of the site.

Site name / designation	Description / key reason for designation	Distance and direction
Cwm Glo a Glyndyrys / SSSI	- Species-rich neutral grassland - Marshy grassland - Lowland acid grassland - Grassland fungi	c. 130m southwest
Rhydycar West / SINC	- Mosaic of ffridd with semi-upland and lowland habitats partly within conifer plantation. - Ancient semi-natural woodland, wet heathland, dry heathland, marshy grassland, semi-improved neutral grassland, bracken slopes, scrub, small ponds, streams. - Great crested newt occurs in small ponds. - Noctule and pipistrelle bat species recorded. - Nationally rare invertebrates common throughout area.	c. 90m west
Cwm Glo / SSSI	- Site contains the Cwm Glo a Glyndyrys SSSI (of international importance for grassland fungi). - Areas of marshy grassland, species-rich neutral grassland, woodland and heath. - Marsh fritillary butterfly, great crested newt, big blue pinkgill, olive earthtongue.	c. 120m west
Afon Taf / SINC	- Major river in the County Borough. - Semi-natural woodland (including areas of ancient semi-natural woodland and linear wet woodland), neutral grassland, scrub, bracken, marshy grassland, tall herb. - European otter, birds, fish, bats and reptiles.	c. 330m northeast (at closest point)

Protected species – Table 4 summarises the priority and protected species (all categories) found within the local area.

Table 4 – Priority and protected species found within the local area.

Protected & priority		# of records (# confirmed species)			Further information / closest roost to site
Groups	Species	Onsite	<500m	>500m	
Bats	Brown long-eared bat	-	-	4	c. 1257 (hibernation roost)
	Common pipistrelle	-	5	33	c. 1141m (day roost)
	Noctule	-	-	5	No roost recorded
	Soprano pipistrelle	-	2	12	No roost recorded
	Unidentified <i>Myotis</i> sp	-	-	1	No roost recorded
	Unidentified <i>Plecotus</i> sp	-	-	1	c. 1120m (day roost)
	Unidentified <i>Pipistrelle</i> sp	-	-	11	c. 846m (day roost)
	Unidentified bat	-	-	12	c. 644m (day roost)
	TOTALS	-	7 (2)	79 (4+)	
Mammals (excluding bats)	European otter	-	5	23	Closest record to site: c. 192m (road mortality)
	European badger	-	-	3	Closest record to site c. 1277m. Setts recorded at c. 1292m from site)
	West European hedgehog	-	1	13	Closest record to site c. 210m
	Water vole	-	-	3	Closest record to site c. 590m
	Other mammals	-	- (-)	15 (5)	>500m: hare (c. 1508m from site), polecat (c. 833m from site), red squirrel (c. 2196m from site in 1973), stoat (c. 937m from site), weasel (c. 1226m from site).
	TOTALS	-	6 (2)	57 (9)	
Amphibians	Great crested newt	-	3	47	Closest record to site c. 471m. <500m: common frog (closest, c. 237m from site), palmate newt (closest, c. 237m from site).
	Other amphibians	-	5 (2)	25 (3)	>500m: common frog (closest, c. 784m from site), common toad (closest, c. 1346m from site), palmate newt (closest, c. 1467m from site)
	TOTALS	-	8 (3)	72 (4)	
Reptiles	Common lizard	-	-	1	Closest to site c. 1415m
	Grass snake	-	-	4	Closest to site c. 784m
	TOTALS	-	- (-)	5 (2)	

Protected & priority		# of records (# confirmed species)			Further information / closest roost to site
Groups	Species	Onsite	<500m	>500m	
Birds	Schedule 1	-	7 (2)	81 (12)	<500m, species: kingfisher and redwing >500m, species: barn owl, brambling, common crossbill, corncrake, fieldfare, goshawk, green sandpiper, hobby, kingfisher, peregrine, red kite, redwing.
	Non-schedule 1	-	114 (33)	825 (50)	<500m, species: black headed gull, bullfinch, coal tit, cuckoo, dipper, dunnock, garden warbler, gold crest, green woodpecker, greenfinch, herring gull, house martin, house sparrow, kestrel, lesser black-backed gull, linnet, long-tailed tit, mallard, marsh tit, meadow pipit, mistle thrush, pied flycatcher, redstart, reed bunting, sand martin, song thrush, starling, swallow, swift, tree pipit, willow warbler, wood warbler, woodcock. >500m, species: black headed gull, bullfinch, coal tit, common gull, cormorant, cuckoo, curlew, dipper, dunnock, garden warbler, gold crest, goldeneye, grasshopper warbler, green woodpecker, greenfinch, herring gull, house martin, house sparrow, kestrel, lesser black-backed gull, lesser redpoll, lesser spotted woodpecker, linnet, long-tailed tit, mallard, meadow pipit, mistle thrush, mute swan, nightingale, nightjar, pied flycatcher, redstart, reed bunting, sand martin, short eared owl, skylark, snipe, song thrush, spotted flycatcher, starling, swallow, swift, teal, tree pipit, wheatear, whitethroat, willow tit, willow warbler, wood warbler, woodcock.
Invertebrates	Butterflies	-	2 (2)	45 (10)	<500m, species: dingy skipper, small heath. >500m, species: dark green fritillary, dingy skipper, grayling, marsh fritillary , pearl-bordered fritillary, silver-washed fritillary, small blue, small heath, small pearl-bordered fritillary, wall.
	Beetles	-	- (-)	5 (5)	>500m, species: <i>Calomicrus circumfusus</i> , <i>Gymnetron beccabungae</i> , <i>Gyrinus natator</i> , <i>Rhagium bifasciatum</i> , violet oil-beetle.
	Dragonflies	-	1 (1)	17 (4)	<500m, species: emerald damselfly. >500m, species: brown hawker, emerald damselfly, golden-ringed dragonfly, small red damselfly.

Protected & priority		# of records (# confirmed species)			Further information / closest roost to site
Groups	Species	Onsite	<500m	>500m	
	Hymenoptera	-	1 (1)	8 (5)	<500m, species: white-tailed bumblebee. >500m, species: buff-tailed bumblebee, bumblebee (unidentified), common carder bee, large red-tailed bumblebee, white-tailed bumblebee.
	Moths	-	7 (7)	770 (113)	<500m, species: coronet, dark-barred twin-spot carpet, knot grass, northern crescent piercer, shaded broad-bar, small phoenix, white ermine. >500m species include: annulet, anomalous, barred sallow, beaded chestnut, caledonian button, centre-barred sallow, cinnabar, dark brocade, dark spectacle, feathered gothic, flounced chestnut, galium carpet, garden dart, hedge rustic, knot grass, large ranunculus, latticed heath, minor shoulder-knot, mottled rustic, narrow-bordered bee hawk-moth, neglected rustic, oak-tree pug, olive, pale pinion, pearl grass-veneer, ragwort bell, red sword-grass, sallow, satin beauty, triangle plume, triple-blotched bell, vetch piercer, viburnum button, waved carpet, welsh wave, yellow-barred brindle.
	True flies	-	- (-)	2 (2)	>500m, species: <i>Phalacrocer replicata</i>, <i>Tanyptera atrata</i>.
	TOTALS	-	11 (11)	847 (139)	
Plants		-	32 (26)	808 (143)	<500m, species: alder buckthorn, bilberry, bladder campion, brittle bladder-fern, carnation sedge, common fleabane, corn mint, fairy flax, grass vetchling, guelder-rose, hard rush, lesser water-parsnip, myosotis laxa subsp. Caespitose, nodding bur-marigold, pale toadflax, pignut, ragged-robin, red bartsia, rough hawkbit, rustyback, silver hair-grass, unbranched bur-reed, water figwort, weld. >500m, species include: agrimony alternate water-milfoil, betony, bilberry, carnation sedge, celery-leaved buttercup, deergrass, devil's-bit scabious, eyebright agg., fairy flax, fen bedstraw, glaucous sedge, goat's-beard, hairy rock-cress, hairy-brome, intermediate lady's-mantle, intermediate polypody, knotted clover, lady's bedstraw, lady's-mantle, marsh pennywort, marsh speedwell, navelwort, pale

Protected & priority		# of records (# confirmed species)			Further information / closest roost to site
Groups	Species	Onsite	<500m	>500m	
					sedge, pignut, quaking-grass, ragged-robin, ramsons, scentless mayweed, sedge sp, tansy tawny sedge, upland enchanter's-nightshade, viper's-bugloss, wall lettuce, water avens, yellow archangel, yellow pimpernel, zigzag clover.
Mosses, liverworts, lichens, fungi	Mosses	-	1 (1)	30 (11)	<500m, species: soft bog moss. >500m, species: common feather-moss, dense fringe-moss, Drummond's thread-moss, greater fork moss, green mountain fringe-moss, roof plait moss, sessile earth moss, straw spear moss, transparent fork-moss, wall feather moss, yellow feather moss.
	Liverworts	-	- (-)	18 (9)	>500m, species: bog earwort, capitate notchwort, ciliated fringewort, delicate germanderwort, grove earwort, straggling pouchwort, western earwort.
	Fungi	-	- (-)	4 (4)	>500m species: slimy waxcap, heath waxcap, parrot waxcap, yellow foot waxcap.
	Lichens	-	1 (1)	1 (1)	<500m, species: heath navel >500m. species: <i>Peltigera canina</i>
	TOTALS	-	2 (2)	53 (23)	

Field survey

The habitat types found within the site are illustrated within a PEA plan (see Appendix II). In addition, a species list detailing all species encountered on site can be seen in Appendix V.

The habitats present onsite have been described in detail in Table 5 using the standard Phase 1 survey habitat classification hierarchical alphanumeric reference codes (JNCC, 2010) where possible. Table 5 also includes the fauna observed during the survey visit.

Table 5 – Habitats present onsite.

Habitat type / Linear feature	Species present	Other observations
<i>Mosaic habitat</i> <i>Includes the following habitat types:</i> <i>A2.2 Scattered scrub</i> <i>B5 Marshy grassland</i> <i>F2.2 Inundation vegetation</i> <i>J1.3 Ephemeral/short perennial</i> <i>Neutral grassland species and encroaching tree species.</i> Qualifies as a whole under the Open Mosaic Habitats on Previously Developed Land category (Section 7 Priority Habitat – Environment (Wales) Act 2016). Land is reclaimed from a former tip-site – underlying substrate is shale.	Species present included: autumn hawkbit, bedstraw sp, birch sp, birdsfoot trefoil, Black medick, bramble, bristly oxtongue, broad-leaved dock, butterfly bush, cinquefoil sp, clover sp., cocksfoot, coltsfoot, common century, common knapweed, compact rush, cotoneaster sp, creeping buttercup, crested dogtail, daisy, dandelion, fern sp, grey alder, hard rush, hazel, lichen (fruiticose form, possibly reindeer lichen, <i>Cladonia potentosa</i>), meadowsweet, moss, nettle sp, oxeye daisy, pedunculate oak, red clover, ribwort plantain, rough meadowgrass, sow thistle sp, spike rush, St John's wort sp, sweet vernal grass, tansy, wild carrot, willow sp, yarrow	There was an area with encroaching, self-seeded tree species (willow sp, grey alder, pedunculate oak) in the southern corner of the site and an open gravel area just to the north of this. There were pools (scattered through the site) likely formed by periodic inundation by rainwater. There was a low bund running along the northeastern boundary parallel with an adjacent footpath. In addition, there was a partial bund, a few metres long, running along the south western boundary. There were several areas where the substrate had been disrupted, exposing the underlying shale material – presumably a result of ground investigation work.
<i>A1.3.2 Plantation, mixed woodland</i> <i>A2.1 Scrub (dense/continuous)</i> To the south west of the site, there was a steep bank planted with mixed tree species (around 20 years old) as screening for the A470. The south western boundary of the site was demarcated by a post and wire fence, running along the base of the bank. Tree species from the bank plantation had self-seeded along the south western boundary to the north east of the fence forming a band of onsite scrub habitat.	Species present included: Plantation woodland (offsite) – blackthorn, dogwood sp., field maple, Geulder rose, gorse, hazel, larch sp., lichen (foliose form, possibly common greenshield lichen, <i>Flavoparmelia caperata</i>), pedunculate oak, rose sp., rowan, silver birch (understory – barren strawberry, bramble, dock sp, dogwood sp., ivy, moss sp. Self-seeded band of scrub (onsite) – alder, birch sp., carline thistle sp, dogwood, grey alder, ivy, pedunculate oak, willow sp.	-
<i>Onsite Fauna</i>	Species present included: blue tit, great tit, grey squirrel, jackdaw, magpie, robin.	

INTERPRETATION AND ASSESSMENT

Designated sites

There were no international statutory designations within 5km of the site, one national statutory designation (SSSIs) within 2km and three non-statutory designations (SINCs) within 1km of the site (see Table 3 for further details).

The proposed development is unlikely to have any impacts outside of the site boundary and therefore the nearby designated sites will remain unaffected.

Priority and protected habitats

There following priority habitat (as listed in Section 7 of the Environment (Wales) Act 2016) was present onsite: Open Mosaic Habitats on Previously Developed Land.

Priority and protected species

The following priority species (as listed in Section 7 of the Environment (Wales) Act 2016) were either present or possibly present onsite: bat species (possibly present – foraging and commuting); west European hedgehog (possibly present); reptiles (possibly present), nesting bird species (possibly present); invertebrates (possibly present).

Bats

There were several records for (at least four) species of bat within the local area (see Table 4).

There were no buildings or trees with potential roost features onsite. There may be roosting opportunities within the offsite plantation, mixed woodland screening habitat to the south west of the site.

There were some limited onsite bat foraging resources (mosaic habitat and scrub boundary). The offsite woodland screening and onsite band of scrub represent a linear feature that could be used by bats for commuting. The woodland screening is well-linked along the A470, especially to the north of the site.

There may be a minor negative impact on bats because of the proposed development.

European otter

There were five records for European otter within 500m of the site (see Table 4), the closest record c. 192m from the site (road mortality). No otters or signs of otters were observed during the survey.

There were no watercourses onsite. The Nant Rhyd-y-Car runs west-east into an online pond (<200m to the north of the site) and then into the River Taff, c.500m to the east of the site.

The offsite plantation, mixed woodland screening habitat would provide suitable cover for otter and this woodland is directly linked to the Nant Rhyd-y-Car.

There may be an impact on European otter because of the proposed development.

Common dormouse

There were no records for common dormouse within the local area. No dormice or signs of dormice were observed during the survey.

There was suitable offsite habitat for common dormice - plantation, mixed woodland screening habitat well-linked to the wider environment. This habitat contains some species of value to dormice: hazel (nuts, insects), pedunculate oak (insects and flowers), birch sp. (seeds), bramble (flowers and fruits), blackthorn (fruits) and ivy (pollen).

There was a small amount of scrub habitat onsite (some linked to the plantation, mixed woodland screening habitat). There is some suitability for dormice although the onsite scrub is quite open in structure.

There may be an impact on common dormice because of the proposed development.

Great crested newt

There were no records for great crested newt within the local area (see Table 4). The closest record to the site was c. 471m away, but separated from the site by the A470.

There were no watercourses onsite. The Nant Rhyd-y-Car runs west-east into an online pond (<200m to the north of the site) and then into the River Taff, c.500m to the east of the site. There are no known records of GCN in the online pond to the north of the site.

There were pools (mostly along the south western boundary) likely formed by periodic inundation by rainwater.

The offsite plantation, mixed woodland screening would provide suitable habitat for GCN during its terrestrial phase and this woodland is directly linked to the Nant Rhyd-y-Car. The onsite scrub and grassland would offer some suitability for GCN during its terrestrial phase.

There may be an impact on great crested newt because of the proposed development.

Water vole

There were records for water vole within the local area (see Table 4). The closest record to site was 590m away, but separated from the site by the A470.

There were no watercourses onsite. The Nant Rhyd-y-Car runs west-east into an online pond (<200m to the north of the site) and then into the River Taff, c.500m to the east of the site.

There is unlikely to be an impact on water vole because of the proposed development.

Nesting birds

There were numerous records for nesting birds within the local area (see Table 4). Bird species were recorded onsite during the survey (see Table 5), however, no nesting behaviour was observed.

The onsite habitat types (scrub, grassland) and offsite habitat (plantation, mixed woodland screening) offered opportunities for nesting birds.

There may be a negative impact on nesting birds because of the proposed development.

Reptiles

There were records for reptile species (common lizard and grass snake) within the local area (see Table 4). Nearest record for grass snake – c. 784m and common lizard – c. 1415m.

The onsite grassland habitat had some suitability for reptiles

There may be a negative impact on reptile species because of the proposed development.

West European hedgehog

There were several records for west European hedgehog within the local area (see Table 4). Nearest record c. 210m from site.

The habitat types within the site (scrub, grassland) and offsite habitat (plantation, mixed woodland screening) offered opportunities for hedgehogs.

There may be a negative impact on west European hedgehog because of the proposed development.

European badger

There were just three records for European badger within the local area (see Table 4). Nearest record c. 192m from site (road mortality) and setts recorded c. 1292m from site.

The habitat types within the site (scrub, grassland) and offsite habitat (plantation, mixed woodland screening) offered some opportunities for badger.

No badgers, badger signs or setts were observed during the survey.

There is unlikely to be an impact on European badger because of the proposed development.

Invertebrates

There were numerous records for invertebrates (predominantly moth species) within the local area (see Table 4). Invertebrate species were not observed onsite during the survey, however, the onsite habitat had suitability for invertebrate species. For example, many of the plant species recorded onsite are either primary or secondary larval food plants for butterflies (see Table 6).

Table 6 – Onsite larval food plants for butterfly species (Section 7 priority species – Environment (Wales) Act 2016 in **bold**).

Plant name	Primary food plant for	Secondary food plant for
Birches	-	Large tortoiseshell
Bird's foot trefoil	Common blue Cryptic wood white Dingy skipper Green hairstreak Short-tailed blue Silver-studded blue Wood white	Clouded yellow
Black medick	-	Common blue
Bramble	-	Green hairstreak Grizzled skipper Holly blue
Broad-leaved dock	-	Small copper
Clovers	Clouded yellow	-
	Pale clouded yellow	-
Cocksfoot	Essex skipper	Small skipper
	Large skipper	-
	Meadow brown	-
	Ringlet	-
	Speckled wood	-
	Wall	-
Dogwoods	-	Green hairstreak
Meadow grasses	Gatekeeper Meadow brown Ringlet Small heath	-
Pedunculate oak	Purple hairstreak	-
Red clover	Mazarine Blue Short-tailed Blue	-
Ribwort plantain	Glanville Fritillary Heath Fritillary	-

There were records for marsh fritillary within the local area (see Table 4); nearest record c. 1234m from site. Marsh fritillary butterfly is a Section 7 priority species (Environment (Wales) Act 2016) and has full protection under Section 5 of the Wildlife and Countryside Act, 1981 (as amended). In addition, the species has a European status of 'vulnerable'.

There were records for devil's bit scabious within the local area (see Table 4); nearest record c. 590m from site. There were no records for field scabious within the local area. Devil's bit scabious is the primary larval foodplant and field scabious is a secondary larval food plant for marsh fritillary butterfly.

No marsh fritillary or scabious species (devil's bit or field) were observed onsite.

Marsh fritillary butterfly forms metapopulations and therefore the species needs to be considered at a regional or landscape scale, rather than just as a site level.

There will be a minor negative impact on invertebrate species because of the proposed development.

Open mosaic habitats on previously developed land (OMHPDL)

The onsite OMHPDL is a priority habitat (as listed in Section 7 of the Environment (Wales) Act 2016).

There will be a major negative impact on this priority habitat because of the development.

Invasive species

No evidence of invasive species was identified onsite.

Impact summary of the proposed development

See Table 7 for a summary of the impacts of the proposed development on protected species that are, or may be, present onsite within the context of the onsite development.

Table 7 – Summary of potential impacts of the proposed development affecting onsite protected species.

Species/habitats	Negative impact* (plus scale and nature of impact)
Bats	Possible (loss of foraging habitat, fragmentation to commuting routes due to physical removal of habitat and/or increased lighting)
European otter	Possible (increased lighting along the plantation, mixed woodland screening habitat)
Common dormouse	Possible (plantation, mixed woodland screening habitat to remain post-development, but increased lighting could have a negative impact). Small amount of onsite scrub habitat may have low suitability for dormice.
Great crested newt	Possible (GCN may use the onsite scrub and/or grassland in their terrestrial phase. Also relatively low likelihood of the use of pools formed by inundation of rainwater)
Water vole	Unlikely
Nesting birds	Possible (removal of suitable habitat for nesting)
Reptiles	Possible (killing / injury)
West European hedgehog	Unlikely
European badger	Unlikely
Invertebrates	Possible (removal of larval food plants for butterflies/moths)
OMHPDL	Habitat to be removed, so there will be a major negative impact.

CONCLUSIONS AND RECOMMENDATIONS

Recommendations in relation to protected species are shown in Table 8.

Table 8 – Recommendations.

Species	Recommendations
Bats	- o <u>Loss of foraging habitat</u>: habitat suitable for foraging bats will be lost as a result of the proposed development. • The proposed plan shows a 4m wide linear infiltration basin along the north eastern boundary of the site – this will provide valuable habitat, attracting insects for foraging bats. Common reed will be planted to soak up rainwater and filter pollutants from run-off whilst screening the carpark from the road. • The creation of a wildlife-friendly pond (as set out in the GCN section of this table) and the change in grass-cutting management regime to the south and east of the Orbit Centre (as set out in the Invertebrate section of this table) will benefit invertebrate species, with a knock on benefit for bats. - o <u>Fragmentation of commuting routes and loss of foraging habitat due to onsite lighting</u>: There is some street lighting along the road adjacent to the site along the north eastern boundary. Increased lighting onsite will be avoided in the first instance. If unavoidable, it will be kept to a minimum and any proposed lighting will conform to the following guidance and recommendations: • (2018) Guidance Note 08/18. Bats and artificial lighting in the UK: Bats and the Built Environment series. Bat Conservation Trust and Institute of Lighting Professionals: https://cdn.bats.org.uk/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?mtime=20181113114229 • Important considerations can be seen on pages 18 and 19 under the heading 'Appropriate luminaire specifications'. Other measures to be considered include 'dimming and part-night lighting' and 'screening' [the habitat to the north should be screened off from the development site with a new hedgerow (using native species of local provenance)]. • There will be no lighting of the <i>offsite</i> plantation, mixed woodland screening habitat to maintain a dark corridor for nocturnal species. • A lighting plan will be produced to be approved by the Local Authority Ecologist.
Common dormouse	- o No further surveys required. - o There will be no lighting of the <i>offsite</i> plantation, mixed woodland screening habitat to maintain a dark corridor for nocturnal species. - o There is very little suitable onsite habitat for dormice. As a precautionary measure, the onsite scrub habitat will be removed with consideration for dormice. A fingertip search for hibernation nests will be undertaken by a suitably qualified ecologist in winter (ideally January or February). Above-ground vegetation will then be cut down and removal of the root ball will be carried out under ecological supervision. - o In the unlikely event that dormice or evidence of their presence is encountered (e.g., nests), works will stop immediately and the Local Authority Ecologist or Natural Resources Wales (NRW) contacted for advice.
European otter	- o No further surveys required. - o There will be no lighting of the <i>offsite</i> plantation, mixed woodland screening habitat to maintain a dark corridor for nocturnal species. - o There will be no night-time working requiring lighting. - o Any chemical, fuel and oil stores will be sited on impervious bases within a secured bund. - o All rubbish and materials will be collected and removed from site on a regular basis to prevent injury or trapping. - o In the unlikely event that otters or evidence of their presence is encountered, works will stop immediately and the Local Authority Ecologist or Natural Resources Wales (NRW) contacted for advice.
Great crested newt	o No further surveys required.

	- o A pre-commencement check of the small onsite pools (if present at the time of the preparatory works) will be undertaken. - o In the event that great crested newt is encountered, works will stop immediately and the Local Authority Ecologist or Natural Resources Wales (NRW) contacted for advice. - o Three permanent wildlife friendly ponds (in a range of sizes) forming a small wetland area will be created in the amenity grassland to the southeast of the Orbit Business Centre. This will provide compensation for the loss of the small onsite pools and create a more stable habitat suitable for great crested newt. A range of native plants (of local provenance) will be introduced in and around the pond within four categories: • Submerged or oxygenating, e.g., rigid hornwort (<i>Ceratophyllum demersum</i>) • Floating, e.g., frogbit (<i>Hydrocharis morsus-ranae</i>) • Marginal, e.g., watermint (<i>Mentha aquatica</i>) • Marsh, e.g., brooklime (<i>Veronica beccabunga</i>) - o A pond layout and planting plan will be submitted for approval by the local authority ecologist.
Reptiles	o The grassland/scrub (if impacted by the development) will be removed in 2 stages, firstly down to 150mm and then, 24hrs later, down to ground level and maintained at ground level until work commences. The cuts will be directional working from the southern end in a north-westerly direction. This process will make the habitat unsuitable for reptile species and any reptiles present will disperse into other retained reptile habitat nearby – the grassland to the north-west of the site. If great crested newts are encountered during this process works will stop immediately and the Local Authority Ecologist or Natural Resources Wales (NRW) contacted for advice.
Nesting birds	o If habitats suitable for nesting birds are to be removed, then any vegetation clearance will take place outside of the bird nesting season. In the event that clearance work has to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a breeding bird survey will be required and must be carried out by a suitably qualified person. Any active nests identified will be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - http://www.jncc.gov.uk/page-3614) is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.
European badger	- o No further surveys required. - o Measures as set out for European otter will also provide mitigation for badger.
West European hedgehog	- o No further surveys required. - o Gaps (13cm x13cm) will be left at the bases of onsite fences/walls (if proposed) including site boundaries to allow passage of hedgehogs across the site. In addition, cautious working when clearing habitat is advised to prevent killing or injury to this species.
Invertebrates	- o No further surveys required. - o As the OMHPDL habitat to the north is to remain and the scrub managed out (see the row below), this will ensure that there are continued resources and linkages for invertebrates. - o In addition, along the amenity grassland to the south and east of the Orbit Business Centre and to the east of the car park, the grass-cutting management regime will be relaxed. Species that appear will be monitored and supplemented if necessary to add in some of the species found onsite. Yellow rattle will be added (if necessary) in order to suppress the growth of vigorous grasses and allow the wildflower species to develop. This will in part compensate for the loss of invertebrate-friendly habitat due to the development. NB a 1m boundary will be maintained at a low level to provide a neat edge to the newly managed habitat. - o The creation of a wildlife-friendly pond (as set out in the GCN section of this table) will benefit invertebrate species.
OMHPDL (Section 7 priority habitat)	- o Measures as already set out in this table would contribute to mitigation and/or compensation in relation to the loss of this habitat. • Bat section – measures, regarding surfacing for the car park.

	• Invertebrate section – the OMHPDL habitat to the north is to remain and the scrub managed out. Change in grass-cutting management regime to the south and east of the Orbit Centre.
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Biodiversity enhancement

Local Authorities have a duty (known as the 'Biodiversity and resilience of ecosystems duty') under the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity in the exercise of their functions.

Where possible, existing onsite habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance will be used for any new planting on the site to support The Action Plan for Pollinators in Wales, 2013 (<https://www.biodiversitywales.org.uk/Wales-Action-Plan-for-Pollinators>).

Devil's bit scabious (the primary larval food plant of marsh fritillary butterfly) will be added to the a small wetland area created in the amenity grassland to the southeast of the Orbit Business Centre. Marsh fritillary butterfly forms meta-populations and therefore the species needs to be considered at a regional or landscape scale, rather than just as a site level. There were records for devil's bit scabious within the local area (see Table 4); nearest record c. 590m from site. The addition of devil's bit scabious will represent a suitable habitat patch to allow the spread of a population of marsh fritillary to more distant areas where other suitable habitat patches are vacant.

Bird nesting boxes and bat roosting boxes will be erected (over the winter, prior to the bird nesting season and bat activity season) within the plantation, mixed woodland screening habitat. See below:

- 4x bat boxes to be distributed through the plantation, mixed woodland screening habitat, erected on suitable trees (as directed by a suitably qualified ecologist on the ground). The boxes will be oriented to the south and attached at a height of at least 3m. There will be no illumination of the bat boxes. One of the boxes will be suitable for maternity use – see suggestions below:
3x single crevice bat box plus 1x maternity colony bat box from <https://www.greenwoodsecohabitats.co.uk/shop>
- 4x bird boxes to be distributed through the plantation, mixed woodland screening habitat, erected on suitable trees (as directed by a suitably qualified ecologist on the ground). The boxes will be oriented to the south, east or south-east, at a slight downward angle and attached at a height of at least 2m. There will be a range of sizes and types as suggested below:
1x Small bird box (32mm access hole), 1x large bird box (45mm access hole), 1x sparrow terrace from <https://www.greenwoodsecohabitats.co.uk/shop>
1x open fronted bird box - <https://www.nestbox.co.uk/products/eco-robin-nest-box>

Overall conclusion

Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.

This ecological report will remain valid for a period of 18 months from the date of the last survey visit. Further surveys may be required to update the site information if planning is not obtained or works do not commence within this time.

REFERENCES

Bat Conservation Trust and Institute of Lighting Professionals (2018) Guidance Note 08/18. Bats and artificial lighting in the UK: Bats and the Built Environment series

<https://cdn.bats.org.uk/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?mtime=20181113114229>

Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Chartered Institute of Ecology and Environmental Management (April 2017) Guidelines for Preliminary Ecological Appraisal, Second Edition. CIEEM, Winchester.

Institute for Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.

Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey; A technique for environmental audit. Reprinted by JNCC, Peterborough.

APPENDIX I – IMAGES



Figure 3 – Whole site, looking south east. Inundation pool, scattered scrub and disruption to habitat (presumably from ground investigations) in evidence.



Figure 4 – Whole site, looking north west.



Figure 5 – Whole site, looking east.



Figure 6 – OMHPDL habitat with the offsite plantation, showing mixed woodland screening habitat adjacent to the south western boundary of the site. Band of scrub also in evidence.



Figure 7 – Pavement and road along north eastern boundary.



Figure 8 – Bare ground in the south of the site.



Figure 9 – Underlying shale substrate onsite, exposed due to ground investigations.



Figure 10 – Example of onsite inundation pool with compact rush in foreground.



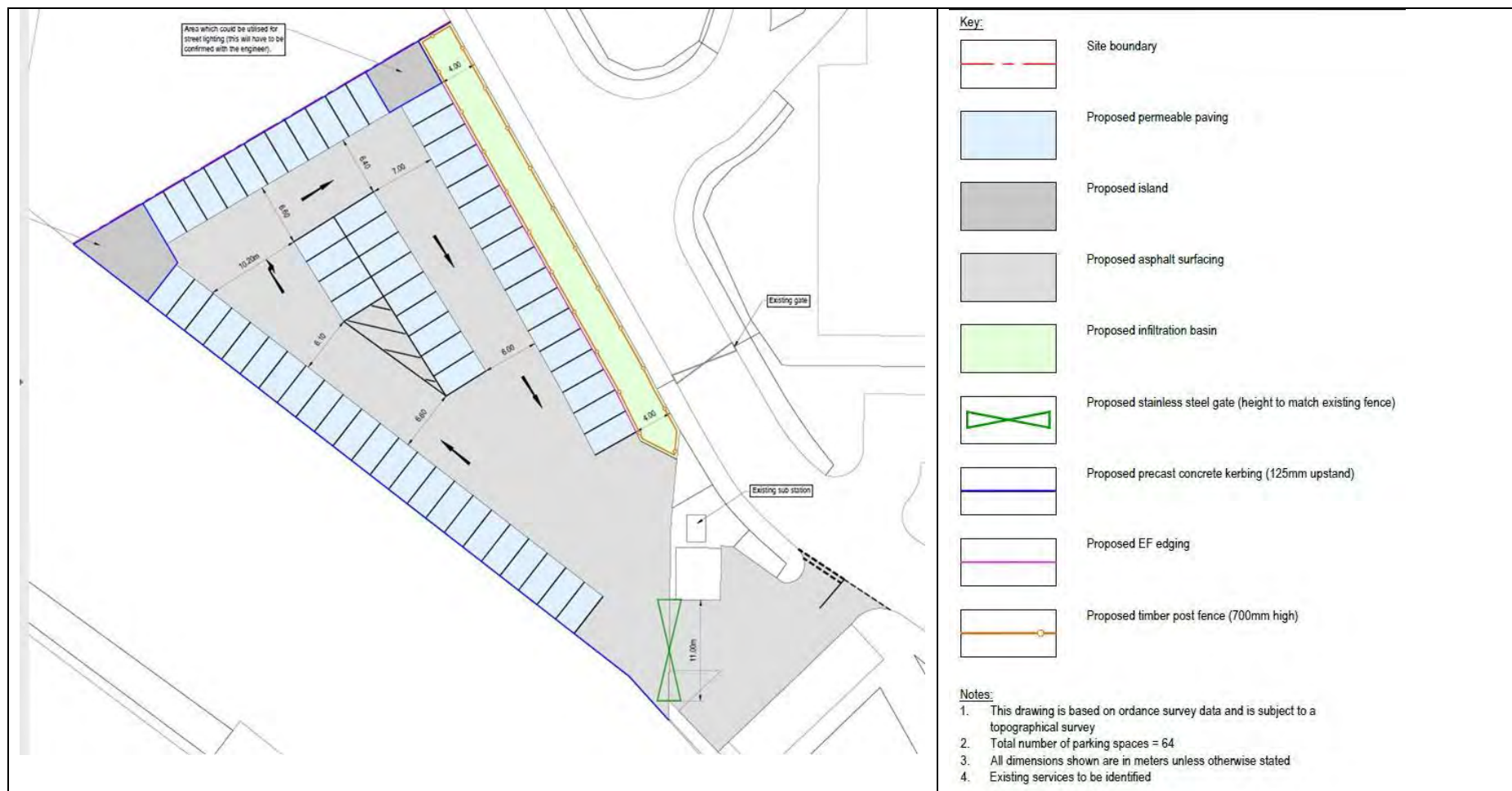
Figure 11 – Example of onsite inundation pool.

APPENDIX II – PEA PLAN



Figure 12 – PEA plan.

APPENDIX III – PROPOSED DEVELOPMENT PLANS



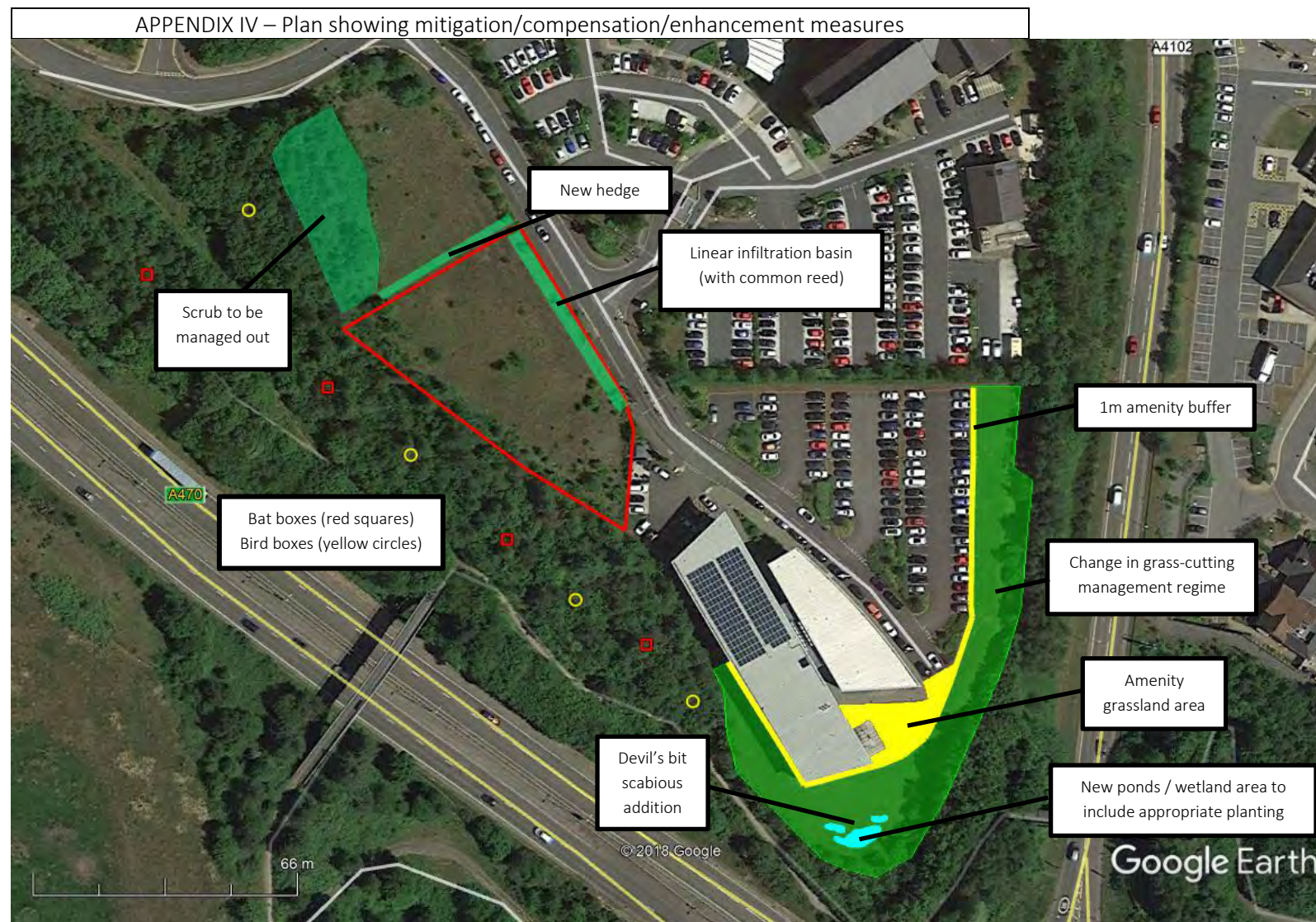


Figure 13 – Mitigation, compensation, enhancement plan.

APPENDIX IV - LEGISLATION

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2018) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 10, December 2018) sets out the land use planning policies of the Welsh Government, integrating with the Environment (Wales) Act 2016.

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered.

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species

Regulations 2017. These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include – The Environment (Wales) Act 2016; The Countryside and Rights of Way Act 2000; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Environment (Wales) Act 2016

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and *Rhododendron ponticum*) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonably avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- Protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- Designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- Adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2017 as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Badger

Badgers are protected in the UK under the Protection of Badgers Act 1992. Under the act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain; it is not intended to prevent properly authorised development.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017. All wild birds, their nests and eggs are protected it an offence to:

- Kill, injure, or take any wild bird;
- Take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- Take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

Common dormice

The common dormouse is a European Protected Species and therefore receives protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- Deliberately capture, injure, or kill a dormouse;
- Deliberately disturb dormice;
- Damage or destroy a breeding site or resting place of a dormouse.

In addition, the dormouse is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which a dormouse uses for shelter or protection; or
- Disturb a dormouse while occupying a structure or place which it uses for that shelter or protection.

Otters

The European Otter, *Lutra lutra* is a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- Deliberately capture, injure or kill any wild otter;
- Deliberately disturb wild otters;
- Damage or destroy a breeding site or resting place of an otter.

In addition, the otter is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Disturbs an otter while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructs access to such a place.

If proposed development work is likely to destroy or disturb otters or their resting places, then a licence will need to be obtained from Natural Resource Wales, which would be subject to appropriate measures to safeguard otters.

Reptiles

Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any site works can commence.

Smooth snakes and sand lizards are European Protected Species under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. This makes it illegal to carry out the following activities:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or

- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from such a wild animal.

APPENDIX V – SPECIES LIST

Common name	Scientific Name (if known)	Number	Comment
	F L O R A		
alder	<i>Alnus glutinosa</i>		
barren strawberry	<i>Potentilla sterilis</i>		
bedstraw sp	<i>Galium sp</i>		
birch	<i>Betula sp</i>		
black medick	<i>Medicago lupulina</i>		
blackthorn	<i>Prunus spinosa</i>		
bramble	<i>Rubus fruticosus</i>		
broad-leaved dock	<i>Rumex obtusifolius</i>		
butterfly bush	<i>Buddleja davidii</i>		
carline thistle	<i>Carlina vulgaris</i>		
cinquefoil sp	<i>Potentilla sp</i>		
cocksfoot	<i>Dactylis gomerata</i>		
compact rush	<i>Juncus conglomeratus</i>		
cotoneaster	<i>Cotoneaster sp</i>		
creeping buttercup	<i>Ranunculus repens</i>		
crested dogtail	<i>Cynosurus cristatus</i>		
dandelion	<i>Taraxacum officinale</i>		
dock sp	<i>Rumex sp</i>		
dogwood sp	<i>Cornus sp</i>		
fern sp	<i>Pteridaceae family</i>		
field maple	<i>Acer campestre</i>		
fungi sp	<i>Fungi sp</i>		
common gorse	<i>Ulex europaeus</i>		
guelder rose	<i>Viburnum opulus</i>		
hard rush	<i>Juncus inflexus</i>		
hawkbit sp	<i>Leontodon sp?</i>		
hazel	<i>Corylus avellana</i>		
hornbeam	<i>Carpinus betulus</i>		
ivy	<i>Hedera helix</i>		
common knapweed	<i>Centaurea nigra</i>		
larch sp	<i>Larix sp</i>		
Lichen	<i>Lichen sp</i>		
meadow grass sp	<i>Poa annua</i>		
meadowsweet	<i>Filipendula ulmaria</i>		
moss sp	<i>Sphagnum sp</i>		
nettle sp	<i>Urtica sp</i>		
ornamental acer	<i>Acer sp</i>		
oxeye daisy	<i>Leucanthemum vulgare</i>		
pea sp	<i>Fabaceae family</i>		
pedunculate oak	<i>Quercus robur</i>		
red clover	<i>Trifolium pratense</i>		
ribwort plantain	<i>Plantago lanceolata</i>		
rose sp	<i>Rosa sp</i>		
rowan	<i>Sorbus aucuparia</i>		
silver birch	<i>Betula pendula</i>		
sow thistle sp	<i>Sonchus sp</i>		
St John's wort	<i>Hypericum perforatum</i>		
sweet vernal grass	<i>Anthoxanthum odoratum</i>		
tansy	<i>Tanacetum vulgare</i>		
wild carrot	<i>Daucus carota</i>		
willow sp	<i>Salix sp</i>		
yarrow	<i>Achillea millefolium</i>		

F A U N A			
blue tit	Cyanistes caeruleus		
great tit	Parus major		
grey squirrel	Sciurus carolinensis		
jackdaw	Corvus monedula		
magpie	Pica pica		
robin	Erithacus rubecula		