

PLOT AT LLANDARCY PARK, LLANDARCY, NEATH

PRELIMINARY ECOLOGICAL APPRAISAL 2023



QUALITY ASSURANCE

Author	Reviewer	Revision	Date Issued
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CONTENTS

INTRODUCTION	1
SPECIES ECOLOGY AND LEGISLATION	2
METHODOLOGY	6
Data search	6
Site survey	6
Constraints	6
BASELINE CONDITIONS	7
Data search	7
Site survey	10
ECOLOGICAL CONSTRAINTS, FURTHER SURVEYS OPPORTUNITIES AND RECOMMENDATIONS FOR MITIGATION	14
Designated sites	14
Habitats	14
Species	15
Invasive non-native species	16
CONCLUSIONS	17
FIGURES	18
REFERENCES	22
APPENDIX A. SITE PHOTOS	23
APPENDIX B TARGET NOTES	28
APPENDIX C NATIVE HEDGE PLANTS	30
APPENDIX D SPECIFICATION FOR HIBERNACULUM	31

SUMMARY

LP2 Ltd wishes to apply for planning permission to Neath Port Talbot County Borough Council for a drive through take-away and café/coffee shop on a plot of land adjacent to Llandarcy Park.

A preliminary ecological appraisal (PEA) was commissioned in support of the application and undertaken by Rebecca Sheahan-East of East Ecology in February 2023.

The PEA found that the habitats recorded within and adjacent to the survey boundary were semi-natural broadleaved woodland, poor semi-improved grassland, bramble scrub and other. The area affected by the development of the drive through and café would mainly be the other habitat formerly a hard surfaced sports pitch and some of the scrub habitat. Japanese knotweed as well as other possible invasive non-native plants were identified at the site.

No protected species were observed during the survey, but the woodland and scrub were thought likely to provide shelter to small tree nesting birds and provide a linear features along which bats are likely to commute. The scrub area was also thought to be suitable for reptiles and small mammals such as hedgehog and weasel.

A reptile survey is recommended to identify the presence or likely absence of slow worms or common lizard on the site. No other species-specific surveys are thought to be necessary, although identification of lichens present on site would be useful.

In the unlikely situation that bats, dormice, great crested newt or any other higher level protected species are found, work will cease until advice and potentially a licence has been issued by Natural Resources Wales.

Various mitigation measures are proposed during the construction period to protect nesting birds and reptiles (if present) as well as sensitive lighting design for commuting bats.

Biodiversity enhancements are recommended for the site in the form of five bird boxes, two bat boxes, a hibernaculum, native hedge planting, bramble control and shrub planting, woodland management and reinstating of ditches, a pod and meadow seeding as well as ongoing management of these features.

INTRODUCTION

The **Plot at Llandarcy Park, Llandarcy Pavillion Complex, Neath SA10 6JD** lies at an approximate National Grid Reference: **SS71979575** . The site is currently unmanaged but it is in the care of the neighbouring Llandarcy Park and Sports Academy. The land currently consists of a former hard surfaced sports pitch with some immature woodland and scrub surrounding it. The plot lies close to the M4 at Junction 43. Light industrial and retail units lie to the north with sports facilities to the east and south. Further to the north lies some formerly developed land which has been covered by scrub but retains ponds and a lake more than 500m away. Further to the east and south of these lie scrub and some woodland linking to the tenant canal corridor. Some small agricultural fields also lie to the south with relatively new housing to the east of the plot. The relative position of the site can be seen in figure 1, to the end of the report.

This report is intended to contribute to the information required for a planning application by LP2 Ltd to build a new Starbucks café/coffee shop and drive through. The proposals are shown in Figure 3.

This report aims to assess the habitats at the plot at Llandarcy Park for biodiversity value and potential for protected and priority species to be present including bats, reptiles, amphibians, birds, invertebrates and small mammals providing any proposals for mitigation or enhancement where necessary.

The author of this report, Rebecca of East Ecology has over twenty years post graduate experience in ecological consultancy and nature conservation and holds Natural Resources Wales survey licences for protected species including bats. Rebecca is also a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Environmentalist.

SPECIES ECOLOGY AND LEGISLATION

Reptiles

There are four common species of reptile present in Wales common lizard, slow worm, adder and grass snake with one further species which has a very restricted range in north Wales. Slow worms by far are the more common species occupying a variety of habitats such as tall grasslands and scrub, railway embankments and derelict sites. Adders require a good supply of small mammal prey as do grass snake, but will also take amphibians and small birds. Grass snake are often associated with still water habitats and adders with heath and upland areas. All reptiles require habitat in which to bask and warm their bodies, nearby cover and foraging opportunities and shelter for winter where they go into a type of hibernation called brumation. Hibernaculum can consist of gaps between tree roots, rubble, stone walls and log piles.

Nesting birds

Different bird species make use of a variety of habitats. Woodland, trees and scrub provide habitat for a great many species, but others require grassland, cliffs, buildings or bare ground for ground nesting. Food preference dictates the habitat in which they are found including mudflats, grassland, agricultural land, rivers, moorland and woodland although some are more generalist.

Bats

Bats are nocturnal insectivorous mammals which have been a conservation priority for many years mainly due to habitat loss. Bats occupy a variety of structures including houses, barns, churches and halls as well as other structures, rock faces and tree hollows and move throughout the seasons. The species of bat and life stage dictates the habitat preference, which may be large fly-in spaces or small crevices as well as their foraging style and prey preference. Some species have more specific prey while other such as the pipistrelle species are more generalist. Bats require shelter with nearby unlit vegetation with an abundance of small flying invertebrates on which to feed but can fly several kilometres per night to find good foraging.

Badger

Badgers are also nocturnal mammals which live in communal groups in underground tunnels called a sett. In a given territory there may be a main sett which is always occupied with an annex or subsidiary setts and outliers. They are identifiable by the presence of fresh bedding and digging with the quantity of spoil and shape of the tunnel. Their primary food source is earthworms but are known to take eggs, other insects, plants roots and small mammals. Their ideal habitats are woodland or scrub on sloping ground in which to build setts adjacent to rich pasture land on which to forage. Badgers are active all year round, but may not occupy some setts during the winter months and are less active at this time.

Conservation of Species and Habitats Regulations (Amendment) 2017

All bats, great crested newts, dormice and otters found in the UK are Higher Level Protected Species (HLPS) being protected under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'.

Under the Habitats Regulations, it is an offence to:

- Deliberately capture, injure or kill any wild animal of an HLPS,
- Deliberately disturb wild animals of any such species,
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance is defined as that which is likely:

1. To impair the animal's ability:
 - to survive, to breed or reproduce, or to rear or nurture their young, or
 - in the case of animals of a hibernating or migratory species (e.g. bats), to hibernate or migrate; or
2. To affect significantly the local distribution or abundance of the species to which they belong.

Other offences also exist relating to possession, transport and sale.

Wildlife and Countryside Act 1981

Section 9 of the Wildlife and Countryside Act 1981 (as amended) offers varying degrees of protection to species including otter, bats, dormice, amphibians and reptiles. Animals listed on Schedule 5 of the Act are protected against one or more of the following:

- intentional killing, injuring or taking (not applicable to bats);
- intentional or reckless damage or destruction, or obstruction of access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturbance of any such animal while it is occupying a structure or place which it uses for that purpose;
- sell, offer or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in schedule 5, or any part of, or anything derived from such an animal.

Wild birds are protected under the Wildlife and Countryside Act (1981) (as amended). It is an offence to intentionally kill, injure or take wild birds, intentionally take, damage or destroy a wild bird's nest while it's being used or built, intentionally take or destroy a wild bird's egg,

possess, control or transport live or dead wild birds, or parts of them, or their eggs, sell wild birds or put them on display for sale, use prohibited methods to kill or take wild birds.

Protection of Badger Act 1992

The act criminalises the offences listed below;

1. Taking, injuring or killing badgers.
2. Cruelty.
3. Interfering with badger setts.
4. Selling and possession of live badgers.
5. Marking and ringing.

Environment Act (Wales) 2016

Section 7 of the Environment (Wales) Act has replaced the Section 42 of the NERC Act 2006 in Wales. Section 7 lists the living organisms and types of habitat in Wales which are considered to be of key significance to sustain and improve biodiversity in relation to Wales.

The Act states that Welsh Ministers must 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.

Planning Policy Wales 2021

Section 5.2.8 of Planning Policy Wales states that: 'The planning system has an important part to play in meeting biodiversity objectives by promoting approaches to development which create new opportunities to enhance biodiversity, prevent biodiversity losses, or compensate for losses where damage is unavoidable.'

Well-Being of Future Generations (Wales) Act 2015

places a duty upon public bodies to produce well-being objectives, in addition, the Act also establishes Public Service Boards for each Local Authority area in Wales, who must prepare and publish a local Well-Being Plan, setting out objectives and how the board or it's individual members will achieve them.

Neath Port Talbot Local Development Plan (2011-2026) (January 2016)

The Neath Port Talbot Local Development Plan (LDP) has policies that ensure the identification, protection and enhancement of sites, habitats and species of international, regional and local importance along with other important natural heritage features (Strategic Policy SP15). Further detailed policies then follow on from this strategic policy.

Policy SP15 Biodiversity and Geodiversity Important habitats, species and sites of geological interest will be protected, conserved, enhanced and managed through the following measures: 1. The identification of the following Internationally and Nationally designated sites within the County Borough to enable their protection:

- (a) Special Areas of Conservation (SACs) and Ramsar Sites;
 - (b) Sites of Special Scientific Interest (SSSIs);
 - (c) National Nature Reserves (NNRs).
2. The identification and protection of sites of regional and local importance;
 3. The protection of important natural heritage features. LDP Objective: OB 15

Policy EN6 Important Biodiversity and Geodiversity Sites

Development proposals that would affect Regionally Important Geodiversity Sites (RIGS), Local Nature Reserves (LNRs), Sites of Importance for Nature Conservation (SINCs), sites meeting SINC criteria or sites supporting Local Biodiversity Action Plan (LBAP) or S42(6) habitats or species will only be permitted where:

1. They conserve and where possible enhance the natural heritage importance of the site; or
 2. The development could not reasonably be located elsewhere, and the benefits of the development outweigh the natural heritage importance of the site.
- Mitigation and/or compensation measures will need to be agreed where adverse effects are unavoidable.

Policy EN7 Important Natural Features

Development proposals that would adversely affect ecologically or visually important natural features such as trees, woodlands, hedgerows / field boundaries, watercourses or ponds will only be permitted where:

1. Full account has been taken of the relevant features in the design of the development, with measures put in place to ensure that they are retained and protected wherever possible; or
2. The biodiversity value and role of the relevant feature has been taken into account and where removal is unavoidable, mitigation measures are agreed

METHODOLOGY

Data search

A search was made for available information relating to designated sites within a 1km area for their biodiversity interest, including Internationally and Nationally important sites; Special Areas of Conservation(SAC) and Sites of Special Scientific Interest (SSSI). The South East Wales Biodiversity Records Centre (SEWBReC) supplied a data search for protected and priority species within a 1km radius. Freely available information was obtained from internet source Multi Agency Geographical Information for the Countryside (MAGIC). The data search was conducted to the latest ecological survey guidelines.

Site survey

The site survey broadly followed a recognised survey method sometimes known as extended Phase 1.

The Phase 1 habitat survey technique is a standardised habitat mapping system used by consultants, wildlife organisations and agencies throughout the UK. Habitat information is conveyed by means of colour coded maps and symbols with descriptive text and target notes regarding features of wildlife interest (NCC 1990).

Limitations of the method, common to all surveys, are that it provides a 'snapshot' of plant species present and animals tracks and signs at the time of survey. Other plants may be more apparent at different times of year, but most plants are thought to be visible during the summer months. Phase 1 habitat surveys are ordinarily carried out between April and September, but broad habitat types may be identified outside of this season.

Rebecca Sheahan-East of East Ecology, a surveyor experienced in Phase 1 habitat survey carried out a site visit on 22nd February 2023 using the extended Phase 1 habitat survey technique. The weather on the day of the survey was cool and overcast with some rain. The most dominant plant species were identified to assist in placing the habitat into the correct classification.

Any species not immediately identified were examined with the use of a hand lens and several wildflower keys.

Tracks and signs of fauna were also searched for, including examining opened hazel nuts, droppings, footprints and burrows.

Constraints

There were no constraints to the survey thought to produce invalid results.

BASELINE CONDITIONS

Data search

Designated sites

No statutorily designated sites fell within the search area although Crymlyn Bog National Nature Reserve (NNR) and Site of Special Scientific Interest (SSSI) lay just outside of the search area, designated as the largest lowland fen habitat in Wales. Seven Sites of Importance for Nature Conservation (SINC), four ancient semi-natural woodlands (ASNW) and one plantation on ancient woodland site occurred within the search area. Also within the search area were two NRW priority habitat areas for lowland wetland and woodland. The site itself fell within two designations covering a very wide area which were the NPT watercourses SINC and the NRW priority habitat area for lowland wetlands. The following are the SINC sites which fell within the data search area;

- NPT Watercourses (0m)
- NPT Ancient Semi-Natural Woodland (227m)
- Tennant Canal (591m)
- Jersey Marine Woods (264m)
- Neath Estuary (675m)
- Red Jacket Fen (828m)
- Llandarcy Village Green (297m)

Habitats

The site itself is not covered by the NRW habitat mapping supplied with the data search, but the adjacent areas were mapped as amenity grassland (sports pitches) and some woodland which has been removed for the buildings at Llandarcy Park.

Species records

374 records of priority species were recovered for the search area. A great diversity of fauna was found to have been recorded within the search area, particularly bird species, but also plants, invertebrates, common reptiles and mammals. Table 1 shows a summary of all the priority and protected species records retrieved for the search area. Received with this data but not summarised here were 244 other records of species of conservation concern and 100 species of local concern. Records occurring at the same distance from the central grid reference are typically submitted by the same recorder visiting the same site.

Scientific name	Common name	Proximity	Number of records	Conservation status
<i>Hyacinthoides non-scripta</i>	Bluebell	1005m	1	WCA8, LBAP (ANG, CLY, CON, FLI, SNP, TRA, TRF)

<i>Eriophorum gracile</i>	Slender cottongrass	1024m	2	WCA8, RDB1 (Wales) - VU, RDB1 (UK) - NT, RDB2 (UK) - R, LBAP (GWY), LI(VC49, LR)
<i>Punctelia jeckeri</i>	Punctelia jeckeri	1336m	1	S7, RDB1 (Wales) - LC
<i>Bombus humilis</i>	Brown banded carder bee	1336m	1	S7, LBAP (GWY, VOG)
<i>Coenonympha pamphilus</i>	Small heath	1336m	1	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
<i>Dolomedes plantarius</i>	Fen raft spider	577m	2	WCA 5, S7
<i>Erynnis tages</i>	Dingy skipper	905m	2	S7, RDB1 (UK) - VU, LBAP (BGW, BRG, CON, FLI, GWY, SWN, VOG), LI(SEWBRcC)
<i>Lasiommata megera</i>	Wall	905m	2	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
<i>Tyria jacobaeae</i>	Cinnabar moth	594m	6	S7, LBAP (GWY, VOG)
<i>Bufo bufo</i>	Common toad	610m	3	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, TRA, VOG)
<i>Lissotriton helveticus</i>	Palmate newt	610m	4	WCA5, Bern, LBAP (ANG, CLY, CON, DEN, FLI, POW, TRA), LI(BIS)
<i>Rana temporaria</i>	Common frog	372m	1	HDir, WCA5, Bern, LBAP (ANG, CLY, CON, FLI, POW, TRA)
<i>Triturus cristatus</i>	Great crested newt	874m	5	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, CON, DEN, FLI, MON, POW, SNP, TRA, TRF, VOG, WRE)
<i>Zootoca vivipara</i>	Common lizard	1336m	1	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
<i>Acanthis cabaret</i>	Lesser redpoll	533m	5	S7, LBAP (CON), LBAP (DEN, POW, VOG), WBAm(RSPB), UKBR(RSPB)
<i>Accipiter gentilis</i>	Goshawk	1044m	2	WCA1.1, WCA9, CITES, LBAP (CLY, CON, POW, VOG)
<i>Alauda arvensis</i>	Skylark	290m	12	BDir22, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG), WBAm(RSPB), UKBR(RSPB)
<i>Alcedo atthis</i>	Kingfisher	577m	4	BDir1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)
<i>Anas acuta</i>	Pintail	1336m	1	BDir21, WCA1.2, CITES, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)
<i>Botaurus stellaris</i>	Bittern	618m	1	BDir1, WCA1.1, S7, Bern, LBAP (ANG, BBNP, CER, CON, GWY, POW, VOG), WBAm(RSPB), UKBAm(RSPB)
<i>Carpodacus erythrinus</i>	Common rose finch	1336m	1	WCA1.1, Bern
<i>Cettia cetti</i>	Cetti's warbler	577m	6	WCA1.1, LBAP (ANG, PEM, VOG)
<i>Charadrius dubius</i>	Little ringed plover	1354m	1	WCA1.1, Bern, LBAP (CON, POW, VOG), LI(VC43)
<i>Charadrius hiaticula</i>	Ringed plover	725m	6	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, CRM, GWY, VOG), UKBR(RSPB)
<i>Chroicocephalus ridibundus</i>	Black headed gull	577m	8	BDir22, S7, WBR(RSPB), LBAP (GWY, VOG), UKBAm(RSPB)
<i>Circus cyaneus</i>	Hen harrier	577m	3	BDir1, WCA1.1, S7, CITES, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, SNP, VOG), LBAP (BBNP, DEN, FLI, POW, SNP, VOG), LI(VC43)
<i>Clangula hyemalis</i>	Long tailed duck	1336m	1	BDir22, WCA1.1, RDB1 (UK) - VU, WBR(RSPB), UKBR(RSPB)
<i>Cuculus canorus</i>	Cuckoo	1336m	2	S7, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, VOG), UKBR(RSPB)
<i>Curruca undata</i>	Dartford warbler	1226m	1	BDir1, WCA1.1, LBAP (VOG), WBAm(RSPB), UKBAm(RSPB)
<i>Dryobates minor</i>	Lesser spotted woodpecker	941m	1	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)

<i>Emberiza schoeniclus</i>	Reed bunting	533m	7	S7, Bern, LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), WBAm(RSPB), UKBAm(RSPB)
<i>Falco peregrinus</i>	Peregrine	893m	7	BDir1, WCA1.1, Bern, CITES LI(VC43)
<i>Falco tinnunculus</i>	Kestrel	237m	12	S7, Bern, CITES, WBR(RSPB) LI(VC43), UKBAm(RSPB)
<i>Gavia immer</i>	Great northern diver	1336m	1	BDir1, WCA1.1, Bern, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)
<i>Ichthyaetus melanocephalus</i>	Mediterranean gull	1266m	1	BDir1, WCA1.1, Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)
<i>Larus argentatus</i>	Herring gull	363m	14	BDir22, S7, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBR(RSPB)
<i>Limosa lapponica</i>	Bar-tailed godwit	1336m	1	BDir1, BDir22, S7, WBR(RSPB), LBAP (BBNP, CON, GWY, VOG), UKBAm(RSPB)
<i>Limosa limosa</i>	Black tailed godwit	1336m	1	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)
<i>Linaria cannabina</i>	Linnet	510m	11	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)
<i>Locustella naevia</i>	Grasshopper warbler	1336m	3	S7, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)
<i>Loxia curvirostra</i>	Crossbill	1336m	1	WCA1.1, Bern, LBAP (CON, POW), LI(VC43)
<i>Milvus milvus</i>	Red kite	876m	7	BDir1, WCA1.1, WCA9, CITES WBAm(RSPB)
<i>Muscicapa striata</i>	Spotted flycatcher	533m	5	S7, Bern, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), UKBR(RSPB)
<i>Numenius arquata</i>	Curlew	577m	4	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, VOG), LI(VC43), UKBR(RSPB)
<i>Numenius phaeopus</i>	Whimbrel	1266m	1	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)
<i>Pandion haliaetus</i>	Osprey	890m	3	BDir1, WCA1.1, CITES, LBAP (GWY), WBAm(RSPB), UKBAm(RSPB)
<i>Passer domesticus</i>	House sparrow	290m	8	S7, WBAm(RSPB), UKBR(RSPB)
<i>Pluvialis apricaria</i>	Golden plover	1336m	1	BDir1, BDir22, S7, WBR(RSPB), LBAP (BBNP, CON, CRM, FLI, GWY, POW, SNP, VOG), LI(VC43)
<i>Prunella modularis</i>	Dunnock	533m	12	S7, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)
<i>Pyrrhula pyrrhula</i>	Bullfinch	181m	11	S7, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG), UKBAm(RSPB)
<i>Regulus ignicapilla</i>	Fircrest	577m	2	WCA1.1, Bern, LBAP (BRG, CON, GWY, POW), WBAm(RSPB), LI(VC43)
<i>Sturnus vulgaris</i>	Starling	246m	14	Bdir22, S7, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)
<i>ga nebularia</i>	Greenshank	1336m	1	BDir22, WCA1.1, LBAP (CON, POW), UKBAm(RSPB)
<i>Tringa ochropus</i>	Green sandpiper	577m	3	WCA1.1, Bern, LBAP (CON, VOG), WBAm(RSPB), UKBAm(RSPB)
<i>Turdus iliacus</i>	Redwing	577m	3	Bdir22, WCA1.1, WBAm(RSPB), UKBR(RSPB)
<i>Turdus philomelos</i>	Song thrush	270m	13	Bdir22, S7, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm(RSPB), UKBR(RSPB)
<i>Turdus pilaris</i>	Fieldfare	533m	2	Bdir22, WCA1.1, WBAm(RSPB), UKBR(RSPB)
<i>Turdus torquatus</i>	Ring ouzel	1266m	1	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)
<i>Tyto alba</i>	Barn owl	114m	22	WCA1.1, WCA9, Bern, CITES, LBAP (ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE), LI(VC43)

<i>Vanellus vanellus</i>	Lapwing	237m	21	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRF, VOG), LI(VC43), UKBR(RSPB)
<i>Chiroptera</i>	Bats	493m	7	EPS, WCA5, LBAP (ANG, DEN, FLI, RCT, SNP, TRA, TRF)
<i>Erinaceus europaeus</i>	European hedgehog	574m	9	S7, Bern
<i>Lepus europaeus</i>	Brown hare	629m	1	S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG)
<i>Lutra lutra</i>	Otter	606m	9	EPS, HDir, WCA5, S7, Bern, CITES, RDB2 (UK),
<i>Meles meles</i>	Badger	481m	7	BA, Bern, LBAP (CLY, CON, DEN, FLI, PEM, POW, TRF, WRE)
<i>Mustela erminea</i>	Stoat	941m	2	NRW, Bern, LBAP (ANG, BGW, BRG, CON, FLI, NEW, POW)
<i>Mustela nivalis</i>	Weasel	941m	1	NRW, Bern, LBAP (ANG, BGW, BRG, CON, FLI, NEW, POW)
<i>Mustela putorius</i>	Polecat	940m	1	HDir, S7, Bern, RDB2 (UK), LBAP (BGW, BRG, CON, FLI, GWY, NEW, POW, SNP, VOG)
<i>Myotis</i>	Myotis bat species	820m	3	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
<i>Nyctalus noctula</i>	Noctule	540m	10	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
<i>Pipistrelle</i>	Pipistrelle bat species	1183m	1	EPS, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	210m	17	EPS, Hdir, WCA5, S7, Bern, RDB2 (UK),
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	204m	14	EPS, Hdir, WCA5, S7, Bern, RDB2 (UK)
<i>Plecotus auritus</i>	Brown long-eared bat	1131m	1	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
<i>Plecotus</i>	Long-eared bat	540m	3	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)

Table 1. Summary of data search results from SEWBRc. BA = Protection of Badgers Act, UKBAP = UK Biodiversity Action Plan Priority Species, UKBAP (R) = UK Biodiversity Action Plan Priority Species (Research only species), BDir1 = EC Birds Directive Annex 1 Species, BDir21 = EC Birds Directive Annex 2.1 Species, BDir22 = EC Birds Directive Annex 2.2 Species, Bern = The Bern Convention on the Conservation of European Wildlife and Natural Habitats Bonn = The Bonn Convention on the Conservation of Migratory Species of Wild Animals Species, CITES = Convention on International Trade in Endangered Species, EPS = European Protected Species, HDir = EU Habitats Directive Species, NRW = Natural Resources Wales Priority Species, RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce), WBR (RSPB) = RSPB Welsh Red listed birds (not based on IUCN criteria), WBAm (RSPB) = RSPB Welsh Amber listed birds (not based on IUCN criteria), UKBR (RSPB) = RSPB UK Red listed birds (not based on IUCN criteria), UKBAm (RSPB) = RSPB UK Amber listed birds (not based on IUCN criteria), S7 = Environment Act (Wales) Section 7 Species, WCA1.1 = Wildlife and Countryside Act Schedule 1 Part 1 Species, WCA5 = Wildlife and Countryside Act Schedule 5 Species, WCA8 = Wildlife and Countryside Act Schedule 8 Species, WCA9 = Wildlife and Countryside Act Schedule 9 Species, INNS = Invasive Non-Native Species, WSG.P = Guidelines for the Selection of Wildlife Sites in South Wales – Primary Species, WSG.C = Guidelines for the Selection of Wildlife Sites in South Wales – Contributory species, WVP = IUCN Threat Listing of Welsh Vascular Plants, LBAP (xxx) = Local Biodiversity Action Plan Species (see key below), LI (SEWBRc) = Locally Important Species (as identified by local specialists) in SEWBRc area LI (BIS) = Locally Important Species (as identified by local specialists) in BIS Area, LI (BRYO-MON) = Locally or nationally scarce or rare bryophyte in Monmouthshire, LI (VC##) = Locally Important Species (as identified by local specialists) in Vice County ##, LI (VC##, LS) = Locally Scarce in Vice County ##, LI (VC##, LR) = Locally Rare in Vice County ##, LI (VC##, EX) = Extinct in Vice County ##, LI (VC##, UR) = Under Recorded in Vice County

Site survey

Habitats

The study area consisted of a former hard surfaced sports pitch, bramble and other scrub with some broadleaved semi-natural woodland. There was no evidence of recent habitat management as the site appeared to be mainly overgrown. Japanese knotweed features on

part of the site with no obvious signs of intervention to control the invasive non-native plant. Habitats are mapped in Figure 2 towards the end of the report.

Semi-natural broadleaved woodland

A small area of woodland was recorded to the southwest corner of the plot. Tree species present were alder (*Alnus glutinosa*) oak (*Quercus robur*) holly (*Ilex aquifolium*), goat willow (*Salix caprea*), sycamore (*Acer pseudoplatanus*) elder (*Sambucus nigra*) cherry (*Prunus* sp) hawthorn (*Crataegus monogyna*) and silver birch (*Betula pendula*). Leyland cypress (*Cupressus* x *Leylandii*) were present along the southern boundary adjacent to the in-use pitches at Llandarcy park. Species noted in the ground flora of the wooded area were bramble (*Rubus fruticosus*) and ivy (*Hedera helix*) occurring abundantly with frequent broad buckler fern (*Dryopteris dilata*) and occasional scaly male fern (*Dryopteris affinis*) and hart's tongue fern (*Asplenium scolopendrium*). Species recorded during the survey are listed in Appendix B.

Bramble scrub

Covering the majority of the sloping ground above the former pitch toward the northern corner of the plot was dense bramble scrub occurring abundantly. Also occurring in moderate frequency were goat willow, buddleia (*Buddleia davidii*) and gorse (*Ulmus europeaus*). Between the taller vegetation other species occurred frequently such as cocksfoot (*Dactylis glomerata*), carnation sedge (*Carex panacea*) and rosebay willowherb (*Chamaenerion angustifolium*) with creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*) and soft rush (*Juncus effusus*) occurring occasionally. Other species with a more rare abundance were herb robert (*Geranium robertianum*), pendulous sedge (*C. pendula*) and evening primrose (*Oenothera biennis*).

Semi-improved neutral grassland

A very small area of mown grassland was recorded at the very northern tip of the land, but technically lies outside of the site boundary. This area of grass was kept short so that the signboard to the rear of it was kept visible from the road junction. The grassland was relatively species diverse and contained examples of creeping bent (*Agrostis stolonifera*), cocksfoot, oxeye daisy (*Leucanthemum vulgare*), ribwort plantain, black knapweed (*Centaurea nigra*), common sorrel (*Rumex acetosa*) wild carrot (*Daucus carota*) and cuckoo flower (*Cardamine pratensis*).

Dry ditch

The site had within it a small ditch across the top of the former hard pitch and another to the eastern roadside. Neither contained water at the time of survey, but appeared to have served the purpose of drainage in the past. There were no aquatic or emergent plant species associated with the ditches.

Other

The hard surfaced former sports pitch making up the flat area of land to the south of the plot was found to be almost entirely covered by mosses, liverworts and lichens. There were thought to be approximately 3 or 4 species present, but not identified during this survey.

Potential for Priority and Protected Species

Bird species

Several small common bird species were recorded on the day of the site visit, these are listed in Appendix B. There would be opportunity for bird nesting in the woodland to the southwest and bramble. The woodland is not included in any of the proposed works and birds nesting here would remain unaffected by the proposals.

Reptiles and amphibians

The bramble scrub and its margins have moderate suitability for reptiles, primarily slow worm and common lizard, which have been recorded within the data search area. The ditches did not contain enough water to be viable amphibian breeding habitat, although four species including great crested newt are known in the data search area. The nearest record of great crested newt is 874m away.

Bats

The site itself may contain some small bat roosting features within the mature trees, but were not identified individually during this survey which was commissioned to provide habitat types and potential for protected species only. Bats are likely to move along the wooded roadside edge of Llandarcy Park and the plot south and east to more densely wooded areas for commuting and foraging.

Hedgehog, polecat, stoat and weasel

No signs of hedgehog (*Erinaceus europaeus*) were noted during the site survey but are very likely to use the site given the availability of places to shelter, hunt/forage and hibernate. Hedgehogs have been recorded fairly regularly within the data search area and therefore known to be present locally. Other small mammals of protected status, polecat, stoat and weasel have also been recorded within the search area and may have cause to visit the site to forage. Evidence of bank vole pathways, feeding remains and droppings were found during the visit which in turn provide food for these smaller mustelids. No scats were observed on the day of the survey to indicate their presence, but they cannot be ruled out.

Although badger have been recorded nearby to the site, no setts signs or pathways entering the site were found. There did appear to be one mammal pathway through the woodland area, but this is most likely attributed to visiting cats from the nearby housing.

Lichen

Within the data search area was a Red Data Book 1 Wales lichen species (*Punctelia jeckeri*) also listed within Section 7 of the Environment (Wales) Act 2016. It is not known whether the lichen occurring on the former hard pitch is this listed species and a sample should be identified by a specialist.

Invasive non-native species

The site was found to have a generous covering of Japanese knotweed (*Reynoutria japonica*) particularly along the east boundary around the area of the proposed new vehicle access to the site. The stand extends into the middle of the site.

In addition to Japanese knotweed occasional rhododendron and cotoneaster were recorded, which may be the listed (*Rhododendron ponticum*) species and one of the five cotoneaster species (*Cotoneaster horizontalis*), (*C. integrifolius*) (*C. simonsii*) (*C. bullatus*) (*C. microphyllus*) which are also listed under the same legislation.

ECOLOGICAL CONSTRAINTS, FURTHER SURVEYS OPPORTUNITIES AND RECOMMENDATIONS FOR MITIGATION

Designated sites

The site did not fall within or close enough to any designated sites to cause any impacts, direct or indirect. The proposed development site did fall within two priority habitat areas for watercourses and lowland wetlands. Since the site did not contain either of those habitats the designations are not relevant in this situation.

Habitats

The area most affected by the proposed drive through and coffee shop/café would be primarily the former hard sports pitch followed by the bramble scrub and to a small extent the dry boundary ditch on the east edge of the site.

Semi-natural broadleaved woodland

No changes are proposed for the woodland area in terms of the development as the area of woodland is marked outside of the development zone. The trees occurring closest to the edge of the development are likely to require a root protection zone implemented during construction. During the operational phase light spill will be minimised as detailed in the section on bats below. No public access is needed within the woodland and should be discouraged by the use dense hedging at the boundary. There is scope for enhancement of the habitat to increase species diversity and structure by appropriate selective felling and planting. Suggested areas for planting are highlighted in figure 4 and a list of suitable native shrub species can be found in Appendix C.

Bramble scrub

The bramble scrub is likely to be affected by the development to some degree which may in turn support reptiles. The scrub habitat while of some value would be controlled by overground methods in the future.

Poor semi-improved grassland

This habitat lies outside of the development area and outside of the site boundary and will remain unchanged.

Other

The mosses, liverworts and lichens covering the former hard pitch will be lost entirely to the development. Since this type of habitat apparently has no biodiversity value there will be no significant impact through its loss, unless the listed (*Punctelia jeckeri*) is found on the former pitch. These types of pioneer species on damp substrate may be recreated on flat 'living roofs' on top of the buildings of the development.

New habitats

The addition of a native species hedge around the perimeter of the site will create additional habitat. A list of suggested species can be found in Appendix C. Management of the hedge would consist of clipping every 9 out of 10 years with a view to traditional laying on the 10th year.

The roadside boundary ditch will be reinstated and managed by dredging every 5 years or as needed.

Species

A range of protected and priority species records were found within the search area including mammals, birds, reptiles, invertebrates and plants although none of the records fell within the site boundary.

Birds

No survey for birds is thought to be necessary as those of conservation concern are not likely to be present in the scrub, many have more specialist habitat preferences. There is a high possibility of common tree nesting species to occur and nest within the bramble scrub and trees. Site clearance activities will need to be undertaken outside of the bird nesting season to avoid offence. Opportunity for enhancement for common tree nesting bird species would take the form of five durable bird boxes to be mounted on the trees to the southwest of the site. Suggested locations are shown in figure 4. Other enhancements to bird nesting habitat would include the woodland management and some planting suggested in an earlier section of the report.

Reptiles and amphibians

The site has a moderate suitability for common reptile species such as slow worm and common lizard as it contains dense vegetation for cover with a mosaic of small open spaces for basking. Although some substrate is quite waterlogged other areas are dry and contain piled waste material which could be suitable for hibernation. The site is however relatively isolated from connecting habitat.

A reptile survey is recommended to establish if reptiles are present at the site as part of the scrub habitat will be affected by the development. A reptile survey will consist of seven visits between March and October using artificial refugia. Survey visits will be conducted during appropriate weather conditions by a suitably experienced ecologist. Weather conditions for survey visits must be dry with temperatures between 12 and 20°C.

Should reptiles be found to be present at the site, further surveys may be required to gain a population estimate. Mitigation measures will be needed to ensure they are not harmed during the site clearance process and that a suitable area of scrub is retained without clearance while the rest of the site is enhanced to create additional carrying capacity in a smaller area. During site work clearance and top-soil strip must be supervised by an ecologist and excavations left open over night must have a 45degree escape ramp added. All machinery and materials must be checked at the start of work each day for reptiles and amphibians.

On site habitat enhancement will be required to increase the carrying capacity of the remaining habitat area which will be of a reduced size due to the encroachment of the development. Enhancement will take the form of some above ground scrub control annually while keeping a mosaic of scrub, shrubs and grassy areas. The addition of a hibernaculum would also be required. Details of the specification can be found in Appendix D.

Since the size of the remaining habitat area outside of the development is relatively small, there may be a need to identify a receptor site as close to the development as possible. Such as site would need to be identified in advance by surveys with the assistance of the local authority ecologist followed by habitat enhancement before translocation of animals can be carried out.

Bats

No habitat with suitable bat roosting features will be affected by the development of the former pitch area and some of the scrub habitat adjacent to it, but it may be assumed that bats will commute along the woodland to the southeast. Five species of bat have been recorded in the local area, mainly in flight. One of those recorded are thought to be light-sensitive and may avoid this area due to the abundance of street lighting.

Mitigation measures for commuting bats may be needed by way of limiting light spill from the exterior lighting proposed for the car parking area and building entrances. Downlit or bollard style lighting is preferred with a maximum of 2000 lumens. No light spill onto trees or bat enhancement features will be allowed.

Enhancements for bat roosting will consist of two durable bat boxes such as the Beaumaris woodstone bat box or the Chillion woodstone bat box mounted in trees. Suggested locations of these can be found in figure 4.

Hedgehog, polecat, stoat and weasel

Hedgehogs and other small mammals are likely to suffer a very minor impact if present at the site without any mitigation. Clearance of scrub should take into account the possible presence of hibernating hedgehogs and areas of habitat suitable for them should be checked by an ecologist should this work go ahead between November and February. Hedgehogs have been recorded locally and are likely to use the bramble areas for foraging and resting. Similar advance to reptiles during construction applies to excavations, machinery and materials. There is currently no restriction to the movement of hedgehogs and other small mammals through the site from the adjacent land at Llandarcy Park and by crossing the two surrounding roads. There should be no solid barriers to movement of small mammals through the site during the operational phase of the development.

Invasive non-native species

The presence of Japanese knotweed presents the biggest constraint to the development of the site. Application of herbicides to kill the plant and its roots may take several years of treatment to be effective to allow excavation of the site. Alternatively the plant and its root and surrounding soil may be removed by a licensed waste carrier for disposal at a licensed site. Other invasive plants may be removed on a more ad-hoc basis and destroyed on the site.

CONCLUSIONS

No designated sites fell at or adjacent to the site and are not thought to be impacted by the proposals. The further two identified priority habitat areas were not relevant to the site as it did not contain those habitats.

The habitats found at the site were mainly other habitat (hardstanding with mosses and lichens), dense continuous scrub, poor semi-improved grassland and semi-natural broadleaved woodland.

Further surveys are recommended to identify the presence or likely absence of common reptiles, but other species surveys are not thought necessary, although the identification of the lichens on site would be useful.

The site was thought to hold suitable habitats for common birds to nest in and for hedgehogs to forage. Other species such as stoat or weasel may visit the site to prey on small mammals occurring here. The woodland area may contain some small features suitable for bat roosting, although this area is not affected by the proposals and no survey is deemed necessary. However some mitigation measures will be required to minimise artificial light through construction and operation of the development. No records of protected or priority species fell within or close to the site boundary.

Mitigation needed during the construction will be made up primarily of ecological supervision of scrub clearance and top-soil strip to protect nesting birds and reptiles. Excavations left open overnight will have an escape ramp added and all machinery and materials will be checked at the commencement of work each day.

To further enhance the site for the species and groups identified five bird boxes and two bat boxes will be added to the trees within the woodland area. Planting of a few native shrub whips are recommended where bramble control has been carried out. A maximum of 30 whips would be sufficient. A native species hedge will be planted around the site boundary and managed by clipping for 9 out of every ten years with a view to laying in the traditional style every 10 years. The dry ditches will be reinstated and managed every 5 years or so. A reptile hibernaculum has also been included in the enhancements and should be placed on the edge of the scrub. A pond is to be added at the lowest point of the plot in association with the ditch. Meadow seeding and management of areas within the development boundary around the car parking spaces will be needed. Management will consist of grass cut and lift once during the summer months between July and September with cutting during the autumn and winter until April. Edges Should be cut to maintain visibility and aesthetics throughout the year. Cut material should be stored on site to create additional reptile habitat.

A biodiversity enhancement plan and on-going habitat management plan are likely to be required.

FIGURES

Figure 1. Location the land at Llandarcy Park. Contains Ordnance Survey data © Crown copyright and database right 2013

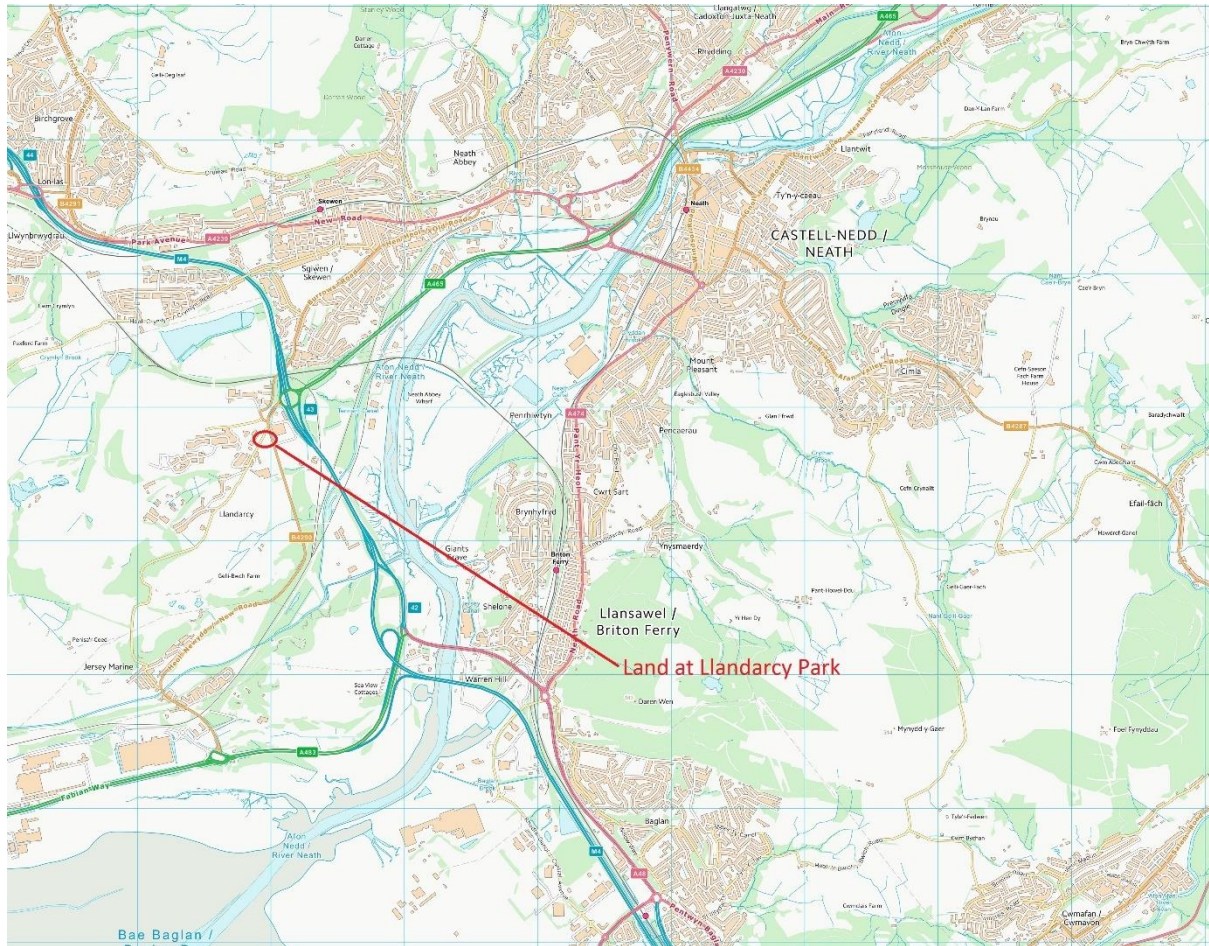
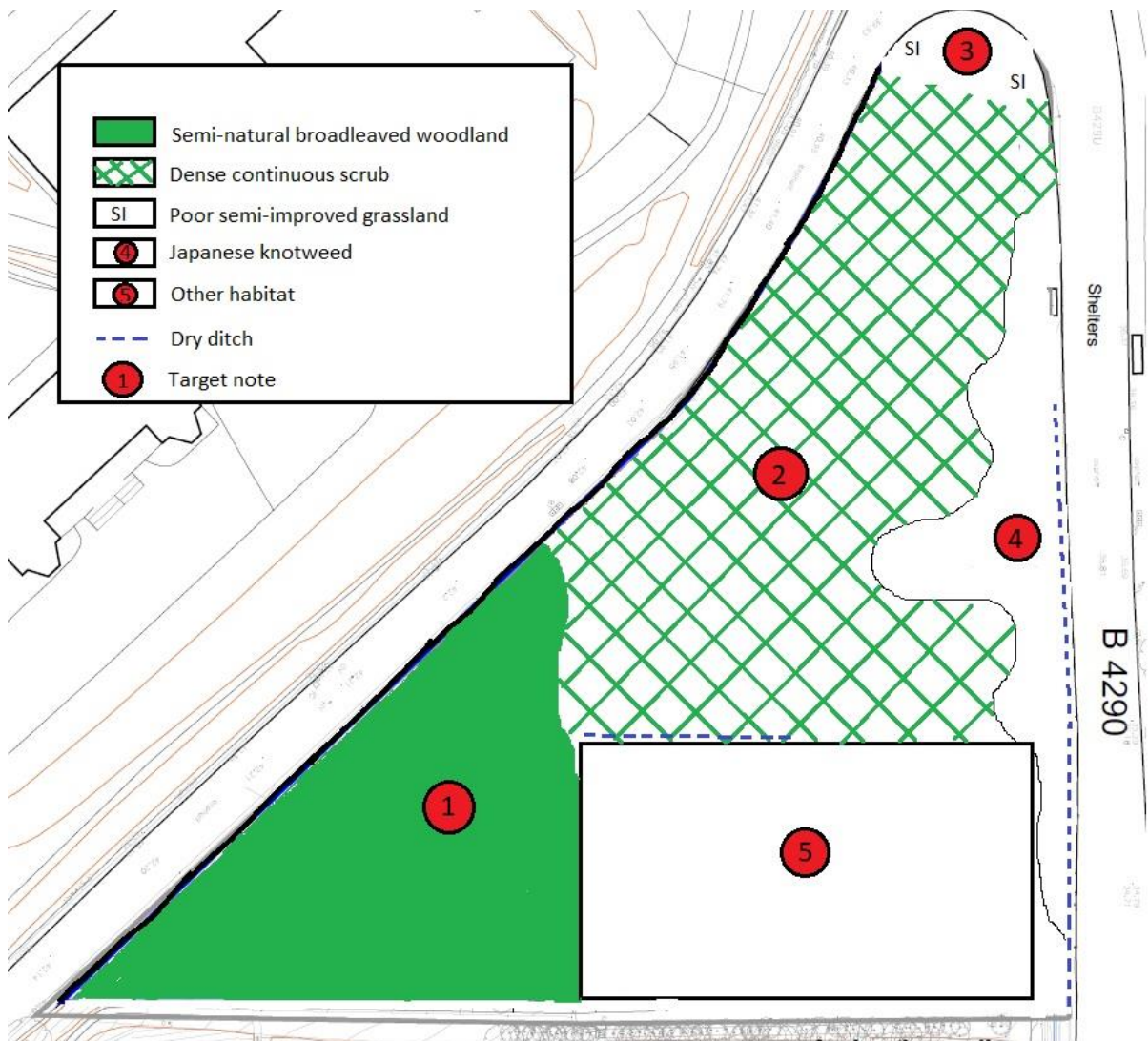
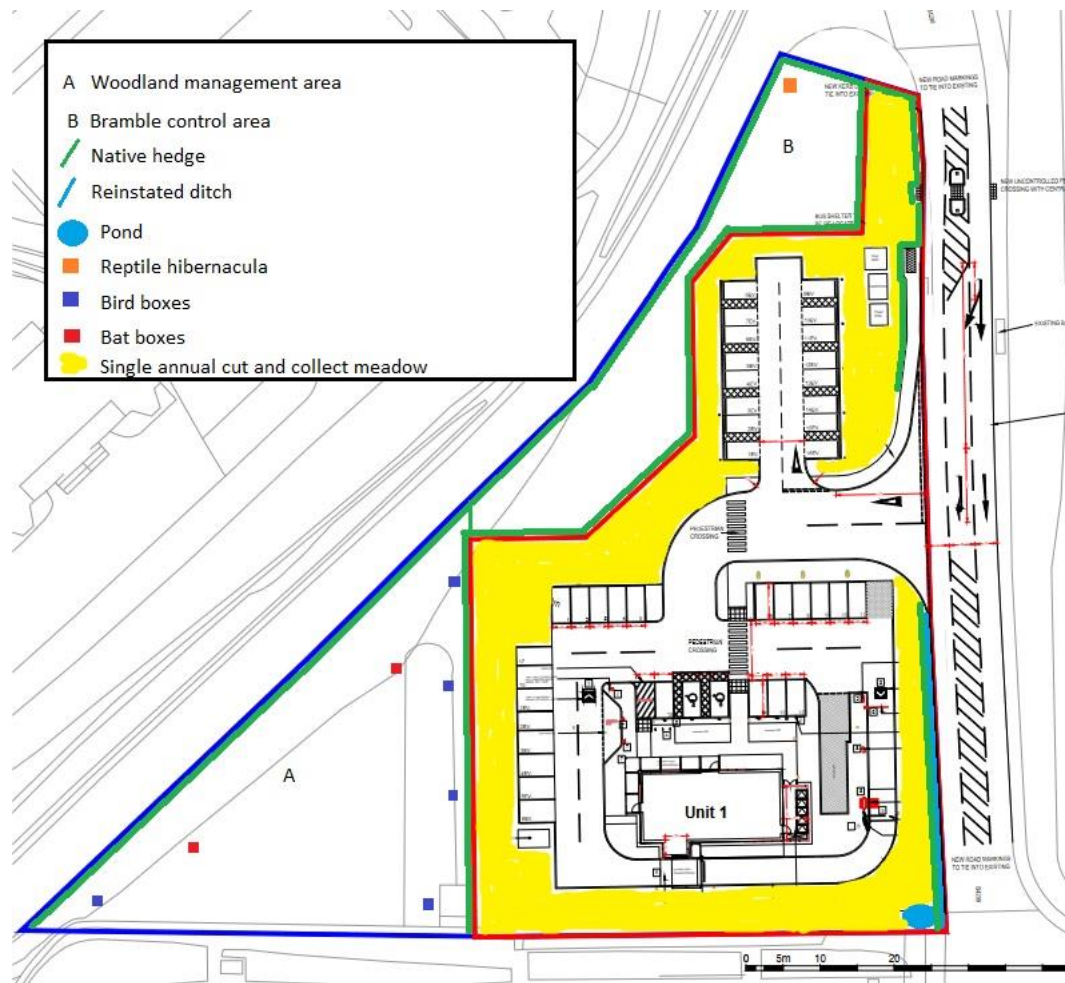


Figure 2 Phase 1 Habitats of the land at Llandarcy Park adapted from Holder Mathias
Architects drawing Ref SK-181122-07



[illegible]

Figure 5. Suggested locations for biodiversity enhancements adapted from Holder Mathias Architects drawing Ref SK-181122-07



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APPENDIX A. SITE PHOTOS



Photo 1.
Former hard pitch
with moss and
lichen cover



Photo 2. Close view
of the moss and
lichen assemblage



Photo 3. Dense
bramble dominated
scrub edge



Photo 4. Dense
bramble dominated
scrub



Photo 5. Semi-natural broadleaved woodland area



Photo 6. Poor semi-improved grassland to the very tip of the site



Photo 7. Dense Japanese knotweed to the western side and boundary of the site



Photo 8. Discarded timber which could provide shelter for reptiles or small mammals



Photo 9. Bank vole feeding remains. Small mammals are likely prey for others



Photo 10. Mammal pathway thought the woodland from the direction of nearby housing thought to be used by domestic cats, but may be used by wild mammals

APPENDIX B TARGET NOTES

TN 1 Semi-natural broadleaved woodland.

Unmanaged secondary woodland fragment with no understorey. No management apparent but contained standing and lying deadwood. Wooden fence to roadside boundary.

Scientific name	Common name	Abundance
<i>Acer pseudoplatnus</i>	Sycamore	O
<i>Alnus glutinosa</i>	Alder	O
<i>Asplenium scolopendrium</i>	Hart's tongue fern	O
<i>Betula pendula</i>	Silver birch	O
<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Dryopteris affinis</i>	Scaly male fern	O
<i>Dryopteris dilatata</i>	Broad buckler fern	F
<i>Fagus sylvatica</i>	Beech	R
<i>Hedera helix</i>	Ivy	A
<i>Ilex aquifolium</i>	Holly	O
<i>Leylandii sp</i>	Leylandii	O
<i>Populus sp</i>	Poplar	O
<i>Prunus sp</i>	Cherry	R
<i>Quercus robur</i>	Oak	O
<i>Rubus fruticosus agg.</i>	Bramble	A
<i>Salix caprea</i>	Goat willow	OLA
<i>Sambucus nigra</i>	Elder	O

TN 2 Dense continuous scrub

Dense continuous scrub with some small open areas containing herb species. Other occasional trees and scrubs present as well as a stand of Japanese knotweed

Scientific name	Common name	Abundance
<i>Betula pendula</i>	Silver birch	O
<i>Betula pubescens</i>	Downy birch	O
<i>Buddleia davidii</i>	Buddleia	F
<i>Carex panacea</i>	Carnation sedge	F
<i>Carex pendula</i>	Pendulous sedge	R
<i>Centaurea nigra</i>	Black knapweed	O
<i>Chamaenerion angustifolium</i>	Rosebay willowherb	F
<i>Cirsium arvense</i>	Creeping thistle	O
<i>Cortaderia selloana</i>	Pampas grass	R
<i>Cotoneaster sp.</i>	Cotoneaster	R
<i>Dactylis glomerata</i>	Cocksfoot	F
<i>Daucus carota</i>	Wild carrot	O
<i>Dryopteris filix-mas</i>	Male fern	O
<i>Epilobium sp</i>	Willowherb	O
<i>Forsythia x intermedia</i>	Forsythia	O
<i>Geranium robertianum</i>	Herb robert	R

<i>Hedera helix</i>	Ivy	F
<i>Hypochaeris radicata</i>	Common cat's ear	O
<i>Ilex aquifolium</i>	Holly (sapling)	O
<i>Juncus effusus</i>	Soft rush	O
<i>Oenothera biennis</i>	Evening primrose	R
<i>Pilosella officinarum</i>	Mouse-eared hawkweed	O
<i>Pinus sylvestris</i>	Scots Pine (sapling)	O
<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Pleurozium schreberi</i>	Red stemmed feather moss	A
<i>Pteridium aquilinum</i>	Bracken	O
<i>Quercus robur</i>	Oak (sapling)	O
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Raynoutria japonica</i>	Japanese knotweed	C
<i>Rhododendron sp</i>	Rhododendron	O
<i>Rosa canina</i>	Dog rose	O
<i>Rubus fruticosus agg</i>	Bramble	F
<i>Rumex obtusifolius</i>	Broadleaved dock	O
<i>Salix caprea</i>	Goat willow	F
<i>Ulex galii</i>	Western gorse	O

TN3 Poor semi-improved grassland

Scientific name	Common name	Abundance
<i>Agrostis stolonifera</i>	Creeping bent	A
<i>Bellis perennis</i>	Daisy	O
<i>Cardamine</i>	Cuckoo flower	O
<i>Carex panicea</i>	Carnation sedge	O
<i>Centaurea nigra</i>	Black knapweed	O
<i>Chamaenerion angustifolium</i>	Rosebay willowherb	O
<i>Cirsium vulgare</i>	Spear thistle	O
<i>Crataegus monogyna</i>	Hawthorn (sapling)	R
<i>Dactylis glomerata</i>	Cocksfoot	C
<i>Daucus carota</i>	Wild carrot	O
<i>Leucanthemum vulgare</i>	Oxeye daisy	F
<i>Plantago lanceolata</i>	Ribwort plantain	F
<i>Pleurozium schrobori</i>	Red stem feather moss	A
<i>Potentilla repens</i>	Creeping cinquefoil	O
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rosa canina</i>	Dog rose	R
<i>Rumex acetosa</i>	Common sorrel	O
<i>Senecio jacobaea</i>	Ragwort	R
<i>Taraxacum officinale agg.</i>	Dandelion	C
<i>Trifolium repens</i>	White clover	O

TN 4 Japanese knotweed

TN 5 Other habitat. – former hard surface pitch covered by mosses and lichens

Incidental fauna

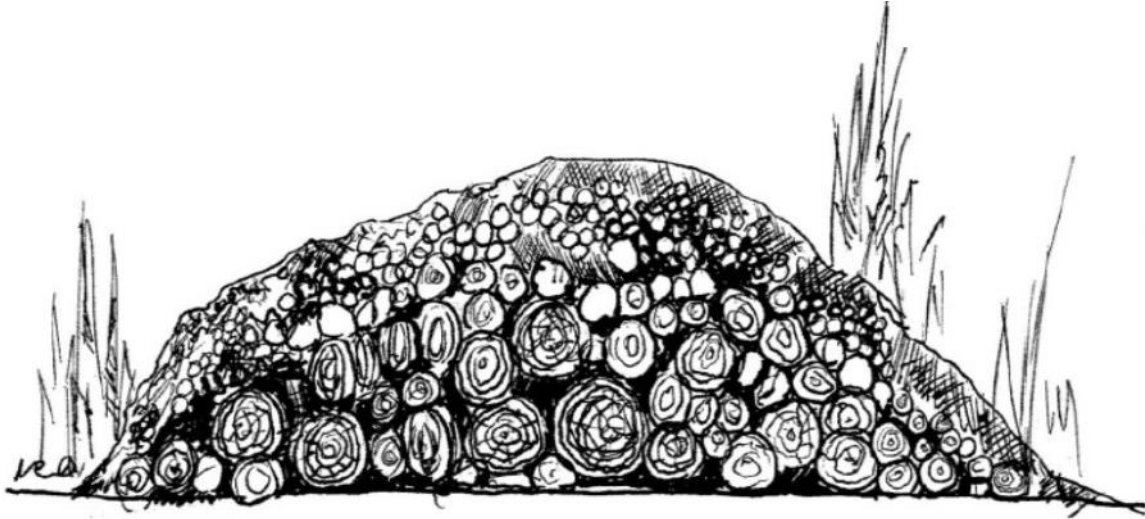
Blue tit, gold finch, bank vole, long-tailed tit, goldcrest, wood pigeon, house sparrow.

APPENDIX C NATIVE HEDGE PLANTS

Adapted from a Natural Resources Wales list

Field maple	<i>Acer campestre</i>
Wild clematis	<i>Clematis vitalba</i>
Dog wood	<i>Cornus sanguinea</i>
Hazel	<i>Corylus avellana</i>
Common hawthorn	<i>Crataegus mongoyna</i>
Spindle	<i>Euonymus europaeus</i>
Alder buckthorn	<i>Frangula alnus</i>
Hop	<i>Humulus lupulus</i>
Holly	<i>Ilex aquifolium</i>
Juniper	<i>Juniperus communis</i>
Wild privet	<i>Ligustrum vulgare</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Blackthorn	<i>Prunus spinosa</i>
Purging buckthorn	<i>Rhamnus cathartica</i>
Dog rose	<i>Rosa canina</i>
Grey willow	<i>Salix sinerea</i>
Osier willow	<i>Salix viminalis</i>
Elder	<i>Sambucus nigra</i>
Wych elm	<i>Ulmus glabra</i>
Wayfaring tree	<i>Viburnum lantana</i>
Gelder rose	<i>Viburnum opulus</i>

APPENDIX D SPECIFICATION FOR HIBERNACULUM



An artificial brush pile created from arisings from woodland management work.

Diameter approximately 2m and 1m in height leaving plenty of small openings at the base for animals to crawl inside. Cover the wood, brash and other materials with turf cut away at the start for the base.