

DAVID CLEMENTS ECOLOGY LTD

LAND AT FOREST LODGE LANE, CWMAVON

ECOLOGICAL ASSESSMENT

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David Clements Ecology Ltd
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH
Tel: 029 20 350120 Fax: 029 20 711997
info@dce.org.uk

Author:	Lewis Badham BSc (Hons)		12/06/2020
Checked by:	Jonathon Lee MSc BSc (Hons)		12/06/2020
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SUMMARY

This report has been prepared by David Clements Ecology Ltd (DCE) on the instructions of Robert Bowen Planning & Development Ltd and refers to an area of land predominately consisting of an area of sloping grassland in Cwmavon, Neath Port Talbot, South Wales. The site measures approximately 0.3 ha and consists mainly of an area of semi-improved grassland within a sub-urban context. Residential areas lie to the south and west of the site, and a B-road lies to the north of the site. Large fields are prevalent within the wider environment. The site lies at the Ordnance Survey grid reference SS 78508 91940 at around 73m AOD

Development plans for the site comprise the construction of a single residential dwelling, which will likely facilitate the removal of the majority of the habitats within the site. Habitats within the site comprise semi-improved grassland, a hornbeam hedge, a laurel hedge, bramble scrub, bracken, bracken/bramble mosaic and tall ruderal vegetation.

The site does not contain, or lie immediately adjacent to, any statutory sites of nature conservation interest such as Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs).

The site does not appear to contain, or lie immediately adjacent to, any non-statutory sites of nature conservation interest such as Sites of Importance for Nature Conservation (SINCs) or Wildlife Trust Reserves.

The hedges, semi-improved grassland, single tree, bramble scrub, bracken, bracken / bramble mosaic and tall ruderal vegetation are considered to have no greater than Local value for wildlife. The grassland areas adjacent to areas of scrub are considered likely to support common reptiles, especially slow-worm.

The development could potentially have adverse impacts on the following statutorily protected species: common reptiles and nesting birds. It is therefore recommended that further survey for common reptiles is undertaken, and subsequent appropriate mitigation measures devised, in order to avoid or minimise the risk of adverse impacts to these species.

Provided adequate mitigation measures are devised and implemented, subject to the results of further survey, to avoid or minimise impacts to the identified features of interest and protected species etc, it is considered on current evidence that the proposed development of this site would not be unacceptably constrained by biodiversity and nature conservation issues.

Appropriate mitigation, enhancement measures and further survey are recommended.

1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) on the instructions of Robert Bowen Planning & Development Ltd and refers to an area of land predominately consisting of an area of sloping grassland in Cwmavon, Neath Port Talbot, South Wales. The site location and context is shown at Plan 1.
- 1.2 The site measures approximately 0.3 ha and consists mainly of an area of semi-improved grassland within a sub-urban context. Residential areas lie to the south and west of the site, and a B-road lies to the north of the site. Large fields are prevalent within the wider environment. The site lies at the Ordnance Survey grid reference SS 78508 91940 at around 73m AOD.
- 1.3 Development plans for the site comprise the construction of a single residential dwelling, which will likely facilitate the removal of the majority of the habitats within the site. Habitats within the site comprise semi-improved grassland, a hornbeam hedge, a laurel hedge, bramble scrub, bracken, bracken/bramble mosaic and tall ruderal vegetation. It is noted that several trees are situated along the northern boundary, which overhang slightly into the site boundary.
- 1.4 The remainder of this report sets out the results of an ecological survey and assessment of the site. It also assesses the likely impact of the development and makes recommendations regarding the mitigation of any potentially adverse biodiversity impacts. An ecosystem resilience assessment has also been completed, in accordance with the Supplementary Planning Guidance (SPG) on biodiversity prepared by Neath Port Talbot County Borough Council (NPT 2018).

1.5 Designated Sites of Biodiversity Interest

Statutory Sites

- 1.5.1 The site does not contain or lie immediately adjacent to any statutory sites of nature conservation interest such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs). No such sites lie within 2km of the site (LERC Ref: 0201-084).

Non-Statutory Sites

- 1.5.2 The site does not appear to contain any non-statutory sites of nature conservation interest such as Sites of Importance for Nature Conservation (SINCs), Wildlife Trust Reserves (WTRs), Country Parks or Regionally Important Geological Sites (RIGS). Several non-statutory sites of nature conservation interest lie within 2km (LERC Ref: 0201-084) and their approximate distances away from the centre of the site are as follows (designation information for each site was not available at the time of writing):

- Hawthorn Close SINC, 110m away.

- Cwmavon Coal Tips SINC, 670m away.
- Cwmafan Green Corridor SINC, 670m away.
- Rolling Mill Cwmavan SINC, 700m away.
- Bryn Goytre Cycleway SINC, 1.7km away.
- The Waun, Cimla SINC, 2km away.

1.5.3 Sites of Importance for Nature Conservation (SINCs) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles. Such 'Wildlife Sites' are so-called 'third tier' sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a planning constraint in the relevant statutory development plan. The framework for the identification and designation of 'Wildlife Sites' is set out in various Government documents, and is referred to in *Planning Policy Wales* (2017, 9th Edition) and *Technical Advice Note (Wales) 5: Nature Conservation & Planning, 2009*.

2.0 APPROACH AND METHODS

2.1 Survey Methodology

2.1.1 The site was surveyed on 20th May 2020 in good weather and was subject to an Extended Phase 1 Survey/Preliminary Ecological Appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the Phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally accepted and standard method for the rapid survey and appraisal of ecological habitats which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and 'Target Notes' were prepared for any features of particular interest.

2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (i.e. amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.

Bats

2.1.3 Large standard trees were subject to a preliminary (Phase 1) survey to assess their potential suitability for use by roosting bats. This survey was carried out from ground-level, using close-focusing binoculars, with particular attention being given to the presence of 'potential roosting features' (PRFs) such as those described by Andrews (2018). The trees were individually searched for features which are likely to be attractive to roosting bats such as cavities and rot-holes, splits and cracks, rugose or delaminating bark and dense ivy cover etc, and any such features were recorded. In addition, a search was made for obvious signs of occupation by bats including droppings, urine stains and scratching around cavity entrances etc. The inspected trees were then categorised as follows:

1A	Occupied by bats	Bats are known to occupy features of the tree, or there is direct evidence of such occupation.	Further detailed survey by bat ecologist required. NRW licence required before any tree works.
1B	High probability of bat use	Tree has features which appear to be of high suitability for use by bats. Usually large/old trees with numerous and/or well-developed PRFs.	Further surveys by bat ecologist required per BCT (2016) 'high roost suitability'. NRW licence will be required if any bats are found.
2A	Moderate probability of bat use	Tree has features which appear moderately suitable for use by bats. Usually large and/or old trees with at least some well-developed PRFs.	Further surveys by bat ecologist required per BCT (2016) 'moderate roost suitability'. NRW licence will be required if any bats are found.
2B	Low probability of bat use	Tree has overall low roosting suitability, although some features of low or marginal roosting potential may be present.	Inspection by arborist and/or bat ecologist immediately prior to and during tree works. 'Soft-felling' may be advised.

3	Negligible probability of bat use	Usually young and/or small trees, lacking any obvious features suitable for use by bats.	No further survey required. No constraint to tree works.
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2.2 Data Trawl

2.2.1 In addition to original survey, a data trawl was carried out with the South East Wales Biodiversity Record Centre (SEWBReC) in order to obtain access to any existing ecological information or records from the site. SEWBReC is the main repository for biodiversity and wildlife records in the south-east Wales region. Relevant records are referred to in the descriptive text.

2.3 Survey Constraints

2.3.1 No elements of the assessment were deemed to be constrained.

3.0 SURVEY RESULTS

3.1 Habitats & Vegetation

- 3.1.1 The results of the vegetation and habitats survey are shown on Plan 2 of this report and are described briefly below. Lists of the species recorded are given at Appendix 1, and representative photographs are included at the end of the report.

Notable Flora

- 3.1.2 Notable native flora records were returned from the data trawl within 2km and include arrowhead (*Sagittaria sagittifolia*), bluebell (*Hyacinthoides non-scripta*), box (*Buxus sempervirens*), charlock (*Sinapis arvensis*), cornflower (*Centaurea cyanus*), mare's-tail (*Hippuris vulgaris*), round-leaved mint (*Mentha suaveolens*) and stinking chamomile (*Anthemis cotula*) (LERC Ref: 0201-084). Several native bluebell plants (Target Note 1; See Plan 2) were noted in the east of the site and just over the northern boundary. No other notable native plants were observed during the current assessment.

Notable Habitats

- 3.1.3 No notable habitats are present within the site.

Tree

- 3.1.4 A single semi-mature willow (*Salix* sp.) is situated along the southern site boundary.

Hornbeam Hedge

- 3.1.5 Constituting the eastern site boundary lies a planted hedge comprising a monoculture of hornbeam (*Carpinus betulus*). Species among the ground flora include cleavers (*Galium aparine*) and hedgerow crane's-bill (*Geranium pyrenaicum*).

Cherry Laurel Hedge

- 3.1.6 Situated along the western site boundary lies a planted hedge comprising a monoculture of cherry laurel (*Prunus laurocerasus*).

Semi-improved Grassland

- 3.1.7 The predominant habitat type within the site is a continuous and managed (mown) sward of semi-improved grassland. Sward height at the time of survey ranged between 10-15cm. Several mole hills were noted during the current survey. Graminoid species within the sward include field wood rush (*Luzula campestre*), meadow fox tail (*Alopecurus pratense*), red fescue (*Festuca rubra*), sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), meadow grass (*Poa* sp.), cock's foot (*Dactylis glomerata*) and false oat grass (*Arrhenatherum elatius*). Other broad-leaved herbaceous plants within the sward include meadow buttercup (*Ranunculus acris*), silverweed (*Potentilla anserina*), native bluebell (Target Note 1; See Plan 2), creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*), creeping

cinquefoil (*Potentilla reptans*), lesser celandine (*Ficaria verna*), bracken (*Pteridium aquilinum*), common ragwort (*Jacobaea vulgaris*), sheep's sorrel (*Rumex acetosella*), willowherb (*Epilobium* sp.), dandelion (*Taraxacum officinalis* agg.).

Bracken

- 3.1.8 An area of emergent bracken is present along the northern boundary. Native bluebell (Target Note 1; See Plan 2) is particularly frequent in this area.

Bracken / Bramble Mosaic

- 3.1.9 A small area of bracken / bramble mosaic is situated in the north-west corner of the site.

Bramble Scrub

- 3.1.10 Two areas of bramble scrub are situated within the site, one along the northern boundary, and another is situated in the west of the site. Several rank species of grass, such as cock's foot and false oat grass are found interspersed throughout the vegetation.

Tall Ruderal Vegetation

- 3.1.11 An area dominated by rose-bay willowherb (*Chamerion angustifolium*) is situated in the west of the site adjacent to the western site boundary.

3.2 Fauna

Bats

- 3.2.1 All species of bat and their roosting sites are protected under the EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (92/43/EEC; the 'Habitats Directive'), implemented in the UK via the Conservation of Habitats & Species Regulations 2017 (the 'Habitats Regulations')¹. The roosting places used by bats are also protected against unauthorised disturbance or obstruction under the amended Wildlife & Countryside Act 1981. Several bat species, including common and soprano pipistrelle, are listed as priorities for conservation in Wales under Section 7 of the Environment (Wales) Act 2016 (see WBP 2016b).
- 3.2.2 A single bat roost record, pertaining to an unknown species of bat, was returned from the data trawl approximately 1.1km away. Species recorded commuting / foraging within 2km include common pipistrelle, daubenton's bat, noctule bat, soprano pipistrelle, and whiskered bat (LERC Ref: 0201-084).

¹ The European legislation cited herewith is that which was applicable at the time of survey, but it should be noted that new arrangements have become applicable after 31 Jan 2020 as a result of 'Brexit'. At the time of writing these comprise a continuance of the current legal and protection arrangements by means of Statutory Instrument No. 579 (*The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations*, 2019) but the longer term arrangements which will apply after the end of the Brexit 'Transition Period' are still to be confirmed and may differ in detail from those which previously applied.

3.2.3 A single immature willow tree lies along the southern boundary; no Potential Roost Features (PRFs) suitable for bats were observed upon this specimen. It is noted that a tree line is situated immediately adjacent to the northern boundary composed of semi-mature poplar (*Populus* sp.) trees, of which several branches overhang the site boundary; these off-site trees were subject to ground-based visual assessments in search of PRFs for bats – no PRFs were observed.

3.2.4 The hedges and trees of the site, and those immediately adjacent to the site, are most likely used by bats for foraging and commuting. Foraging may also occur over the grassland habitat.

Dormouse

3.2.5 Dormouse is also a ‘European protected species’ afforded legal protection which is similar to that of bats (see above). It is also a Section 7 listed species.

3.2.6 No records for dormouse were returned from the data trawl (LERC Ref: 0201-084). Habitats within the site are considered negligible for dormouse; the two hedges within the site are both planted monocultures with poor / no connectivity with hedgerows / suitable habitat in the wider landscape; scrub habitats within the site, namely a small area of bramble scrub and bracken / bramble mosaic are also disconnected from suitable off-site habitats. As the habitats within the site are considered negligible for dormouse, and given the lack of local records within 2km of the site, it is considered highly unlikely that dormouse occurs within the site.

Otter

3.2.7 Otter is also a ‘European protected species’ afforded legal protection which is similar to that of bats (see above). It is also a Section 7 listed species.

3.2.8 Otter are present in many of the main river systems in Wales, having now recovered much of its former range following its sharp decline in the 1970s and 1980s, although numbers often remain at lower levels than was previously the case.

3.2.9 No records for otter were returned from the data trawl within 2km of the site (LERC Ref: 0201-084). The site does not lie immediately adjacent to any watercourse habitat, with the nearest watercourse, the River Afan, approximately 160m away from the site. Given the habitats within the site are considered negligible for otter, and the presence of significant barriers, such as main roads, between the site and the nearest watercourse, it is considered unlikely that otter would occur within the site.

Badger

3.2.10 Badger is fully protected in the UK under the terms of the Protection of Badgers Act 1992. Protection applies both to the animal itself, which may not be intentionally killed, injured or captured, and to its nesting burrows (setts), which may not be intentionally destroyed, damaged or disturbed except under certain specified and/or licensed conditions. Current interpretation of the Act also infers a degree of protection to areas which are of key significance to foraging badgers.

- 3.2.11 Several records for badger were returned from the data trawl within 2km, the nearest of which is situated approximately 240m away (LERC Ref: 0201-084). No evidence was found during the current survey to indicate badger presence on site. Habitats within the site are not considered to be suitable for sett construction given the topography and exposed nature of the site. It is considered possible that badger may visit the site on an adventitious basis, from suitable habitat within the wider landscape, to forage.

Other Mammals

- 3.2.12 Two records for hare returned within 2km, the closest of which is located approximately 1.8km from the site (LERC Ref: 0201-084). It is considered possible that hare may occasionally visit the site from adjacent land.
- 3.2.13 Many records for hedgehog were returned from the data trawl within 2km from the site, the closest of which is situated approximately 200m away (LERC Ref: 0201-084). The hedge bases and bramble scrub may provide suitable nesting opportunities for hedgehog. This species may also use the semi-improved grassland for foraging.
- 3.2.14 A single record for water vole returned within 2km of the site, the closest of which is situated approximately 1.8km away (LERC Ref: 0201-084). The site does not lie immediately adjacent to any watercourse habitat, with the nearest watercourse, the River Afan, approximately 160m away from the site. Significant barriers, such as main roads, lie between the site and this watercourse. It is considered unlikely that water vole would occur within the site.
- 3.2.15 It is likely that a range of common mammal species will occur. These could include, for example, resident synanthropic species such as house mouse and brown rat, as well as open country species such as bank vole and rabbit etc. Mole hills were observed within the grassland.

Birds

- 3.2.16 Nearly all species of bird are protected as individuals under the amended Wildlife & Countryside Act 1981, and this protection extends to their nests, eggs and young. A number of especially rare species listed on Schedule 1 of the Act are also subject to enhanced protection against disturbance whilst nesting.
- 3.2.17 A number of bird species of conservation concern, which are listed under Schedule 1 (WCA1), of the Wildlife and Countryside Act 1981, returned records within 2km of the site, the closest of which pertains to brambling approximately 440m away. Other records within 2km include barn owl, common crossbill, fieldfare, fire crest, goshawk, kingfisher, peregrine, red kite and redwing (LERC Ref: 0201-084). The habitats on site are unsuitable for any of the above species to nest.
- 3.2.18 Other species of conservation concern, which are listed under Section 7 of the Environment Act (Wales), returned records within 2km of the site, and are as follows: black headed gull, bullfinch, cuckoo, dunnoek, herring gull, house sparrow, kestrel, lapwing, lesser redpoll, lesser spotted woodpecker, linnet, nightjar, reed bunting, ring ouzel, skylark, song thrush, spotted flycatcher, starling, tree pipit, wood warbler and

yellowhammer (LERC Ref: 0201-084). Several of these species, particularly dunnock, are considered likely to nest within the site.

- 3.2.19 Several species of birds were observed during the current survey, such as blue tit, great tit, dunnock, greenfinch and goldfinch. The hedges provide habitat for nesting birds, especially species such as dunnock, robin and blackbird.

Reptiles

- 3.2.20 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called ‘partial protection’ under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as ‘Section 7’ species in Wales.

- 3.2.21 Several records for reptiles were returned from the data trawl within 2km, the closest of which pertains to adder approximately 560m away. Other reptile species records within 1km include common lizard, slow worm and grass snake (LERC Ref: 0201-084). The semi-improved grassland areas adjacent to the scrub and tall ruderal habitats within the site offer suitable edge-habitat for reptiles, particularly slow-worm, offering suitable basking sites immediately adjacent to cover. The site is considered to have potential to support common reptiles.

Amphibians

- 3.2.22 Five native amphibian species occur in South Wales, comprising common frog, common toad, smooth newt, palmate newt and great crested newt (GCN). The latter species is nationally rare and declining, afforded full protection under both UK and European legislation (see under bats, above), which also extends to the habitats which support it. The other four species are not afforded any direct statutory protection, other than with respect to trade, but common toad is listed as a ‘Section 7 species’ in Wales.
- 3.2.23 Several records were returned from the data trawl for common species of amphibian, the nearest of which pertains to common frog situated approximately 1.6km from the site (LERC Ref: 0201-084). There are also records for common toad and palmate newt within 2km of the site. No GCN records occur within 2km of the site. Ordnance survey maps indicate that the nearest standing water body is situated approximately 180m south of the site.
- 3.2.24 The site does not contain any aquatic habitats which would be suitable for breeding by species of amphibian. However, the terrestrial habitats within the site are potentially suitable for foraging / commuting purposes by these species. The hedge bases, bramble scrub and tall ruderal vegetation of the site could potentially be suitable as places of shelter for these species. The presence of GCN on the site is considered to be highly unlikely given the lack of records within 2km of the site.

Invertebrates

- 3.2.25 Upwards of 30,000 species of terrestrial and freshwater invertebrates are recorded in Britain, including some 27,000 insect species, occurring in every available habitat. About 40 invertebrate species are afforded full statutory protection in the UK under either European or British legislation, and many other species are accorded varying levels of conservation importance.
- 3.2.26 All invertebrate records within 2km of the site pertain to field observations made in a single area, in Margam Forest, approximately 1.8km away from the site. Odonata species include brown hawker and emperor dragonflies. The small heath butterfly was also noted, (LERC Ref: 0201-084).
- 3.2.27 The site is considered likely to support a ubiquitous assemblage of common invertebrate species owing to the habitats present. No notable invertebrates were observed during the current survey.

4.0 ECOLOGICAL EVALUATION

4.1 There is currently no nationally accepted system for categorising sites or features of biodiversity significance below the level of national value, criteria for which are set out by the former Nature Conservancy Council (1989, as amended). However, guidance for the identification of non-statutory sites of county significance (ie SINCs) is available in this instance (WBP 2008).

4.2 For the purposes of this study the habitats and features of the site have therefore been provisionally evaluated and graded in accordance with the categories set out in Appendix 2. The ecological assessment of the site is shown at Plan 3.

International, National, County Value & District Value

4.3 No parts of the site are considered to fall into any of these categories.

High Local Value

4.4 No parts of the site are considered to fall into this category, based on the information currently available.

Local Value

4.5 The monocultural planted hedges, semi-improved grassland, single tree, bramble scrub, bracken, bracken / bramble mosaic and tall ruderal vegetation are considered to have no greater than Local value for wildlife. The grassland areas adjacent to areas of scrub are considered likely to support common reptiles, especially slow-worm. The presence of reptiles may result in the assessment of the value of these habitats to be revised to at least High Local value, depending on the species found and population size.

Negligible Value

4.6 No parts of the site are considered to fall into this category.

5.0 ASSESSMENT OF DEVELOPMENT IMPACTS

- 5.1 Proposed plans for the site indicate the construction of a residential dwelling, which is likely to facilitate the removal of the majority of the grassland habitat within the site.
- 5.2 The present survey has evaluated the hedges, semi-improved grassland, single tree, bramble scrub, bracken, bracken / bramble mosaic, dense scrub and tall ruderal vegetation as being of no more than Local Value for wildlife. The site is considered suitable to support common reptiles and nesting birds.
- 5.3 Given the scope of the proposed development being confined to the site boundary, it is not considered likely that the scheme would have any adverse impact on any designated biodiversity sites in the surrounding area.
- 5.4 The development could potentially have adverse impacts on the following protected species: common reptiles and nesting birds. Further survey is required to inform the assessment. Further survey requirement along with mitigation measures for the known ecological constraints are provided in Section 6.
- 5.5 Provided adequate mitigation measures are devised and implemented, subject to the results of further survey, to avoid or minimise impacts to the identified features of interest and protected species etc, it is considered on current evidence that the proposed development of this site would not be unacceptably constrained by biodiversity and nature conservation issues.

Ecosystem Resilience Assessment

5.6

Development proposals		Ecosystem		Resilience Factors			
Single Residential Dwelling – Upland Wales		Broad Habitat Type	Practical Habitat Unit	Diversity	Extent	Condition	Connectivity
Risks	Disturbance to subterranean communities.	Grassland	Semi-improved grassland with planted hedges and marginal vegetation.	Some loss likely – enhancement measures and supplementation of existing grassland habitat with additional native species will result in the increase of future biodiversity within the site.	Unknown loss of extent; will be replaced by biodiverse habitats and other enhancement measures.	Good. Range of plant species present within the grassland sward, elevated by the presence of native bluebell, a Schedule 8 species.	-
	Destruction of potential nesting bird and sheltering herptile habitat.						
	Destruction of native bluebell specimens, a species protected under Schedule 8 of the WCA (1981).						
Opportunities	Habitat creation and enhancement; supplementation of semi-improved grassland with additional native species to create high value wildlife area (See Biodiversity Enhancement Strategy below).						

6.0 RECOMMENDATIONS

6.1 Further Surveys

- 6.1.1 The present survey has indicated that the site may potentially support common reptiles. An artificial refugia survey should be carried out to determine likely presence/absence of reptiles on the site. This would involve the deployment of artificial refugia, across the site, to be checked on eight survey visits (Froglife, 1999).

6.2 Statutory Obligations

- 6.2.1 The following are mandatory requirements under current legislation:

1. In the event that any specially protected species, such as bats, are discovered anywhere on the site at any point prior to or during clearance or construction, all work in the immediate area must cease immediately and appropriate expert advice sought.
2. Clearance and construction must not cause disturbance or harm to any birds which are nesting on the site at the time. In the event that any nesting birds are discovered immediately prior to or during any works, all work in the immediate area must cease immediately and appropriate expert advice sought.
3. Clearance and construction must be preceded by appropriate and adequate measures to minimise the risk that reptiles are killed or injured.

- 6.2.2 In 1-2 above, the 'immediate area' should include any occupied tree/ shrub in its entirety, and any other habitats for an area of at least 5m radius around the find-site. The affected area should be clearly demarcated on the ground (e.g. by means of striped bunting) and made off-limits to all site personnel until inspected by an appointed expert. Appropriate measures to rectify the situation in accordance with statutory obligations and responsibilities should be determined at the time by the appointed expert, and may include consultations with the statutory agencies and the seeking of derogation licences etc.

- 6.2.3 Clearance works affecting the above-ground parts of trees and shrubs should avoid the main bird-nesting season which runs approximately from March to August inclusive. If works must be carried out during this period, they must be preceded by a nesting bird survey. If nesting birds are found to be present, the nest and immediate area, as described above, should be protected until the young have fledged. This restriction also applies to any other habitats which are found to support nesting birds, including any ground-nesting species.

- 6.2.4 Where the clearance of potential bird-nesting habitats is projected to occur at some unknown point in the future, the above-ground vegetation should ideally be cut down (e.g. coppiced) to approximately 200mm height over the winter period in order to render it unattractive to nesting birds, and then maintained in this condition by regular re-cutting until the start of site clearance operations.

- 6.2.5 At the present time there is not considered to be adequate survey information available to inform a consideration of the impacts of any redevelopment on reptiles, or to allow the formulation of appropriate schemes of mitigation. Additional survey and detailed development plans will be necessary to inform any future planning application.
- 6.2.6 Current NRW guidance with respect to the clearance of sites and reptiles is attached at Appendix 3. An appropriate reptile mitigation strategy (RMS) should be agreed with the local planning authority ecologist prior to site clearance, based on this guidance. Mitigation for common reptiles should concentrate primarily on minimising the potential for causing the death and injury of individuals during any site clearance and construction operations, which is a statutory requirement.
- 6.2.7 In this case it is not considered likely that the site will need to be subject to a fence, trap and clear (FTC) operation in order to remove any reptiles in the period immediately prior to its clearance for development. Adequate site clearance should be achievable by means of advance ‘species deterrence’ and ‘destructive searching’ methods alone under supervision by an appropriately experienced ecologist.
- 6.2.8 It should be noted that site clearance operations for reptiles are seasonally constrained and cannot be carried out during the hibernation period which extends from November to February inclusive. Work outside of this period considerably reduces the probability of vulnerable torpid and/or immobile hibernating individuals being encountered and potentially harmed.

6.3 Biodiversity Enhancement Measures

- 6.3.1 Any trees which must be removed as part of the development will be replaced on a like-by-like basis as a minimum with native species which are indigenous to the region, and from stock which is of local (or at least UK) provenance and also contain a good range of wildlife friendly plants (see Appendix 4 for example species).
- 6.3.2 New landscaping will incorporate native species which are indigenous to the region, and from stock which is of local (or at least UK) provenance and also contain a good range of wildlife friendly plants (see Appendix 4 for example species).
- 6.3.3 Suitable surfaces (especially flat-roofed areas) of the new development should be considered for implementation of green wall and green roof technologies. Advice and design guidance is available via websites such as Living Roofs (<https://livingroofs.org/>).
- 6.3.4 Bat roosting boxes will be erected in suitable locations around the site as well as bird nesting boxes – these could be erected on trees within the site, or upon the eaves of buildings. These should be sited in such a manner that predators such as cats cannot reach them and be at least 4m (preferably 5m) above ground level. The entrances to bat boxes should not be illuminated at night. Bat boxes should ideally be of ‘woodcrete’ construction (such as those manufactured by Schwegler Ltd), since these are much more robust and longer-lived than traditional wooden boxes and require less after-maintenance. Further advice is given at Appendix 5.
- 6.3.5 Further enhancement measures for reptiles will be added, following the results of the refugia survey. Supplementary reptile habitat will include the provision of suitable

hibernacula for hibernating reptiles. Additional areas of tall / dense vegetation will be created, immediately adjacent to areas of open ground, to provide additional edge-habitat which is suitable for basking behaviour.

6.4 Non-Statutory Recommendations

- 6.4.1 Careful consideration should be given to the use of lighting within the developed site, as this can adversely affect activity by a variety of fauna, particularly commuting and foraging bats, nesting birds and invertebrates. Any lighting plan will need to be carefully reviewed in liaison with an ecologist following guidance set out by BCT (2018). Features such as the hedges and boundary tree must not be illuminated, so as not to disturb a variety of nocturnal fauna, especially bats and moths.
- 6.4.2 Any retained habitats, such as areas of grassland which contain native bluebell (See Pln 2; Target Note 1), should be securely fenced off with appropriate temporary fencing (eg 'Heras' fencing) at the start of construction work to prevent access and incidental damage by site vehicles, equipment and personnel.
- 6.4.3 All tree works should be in accordance with British Standard BS5837 (2012) *Guidance for the Treatment of Trees in Relation to Construction*.
- 6.4.4 Contractors should be provided with a 'toolbox talk' at the outset of site clearance and construction works setting out the known and possible habitat and species constraints, and the mitigation measures which are required. The toolbox talk should also set out procedures to be followed in the event that there are unexpected encounters with protected species etc. All contractors carrying out scrub / tree works (if appropriate), should be warned of the possible presence of nesting birds and common reptiles, etc and of their protected status. It should be clearly understood that in the event of any being found during works, all works should cease in the affected area until appropriate expert advice has been sought.
- 6.4.5 A Wildlife Protection Plan (WPP) should be drawn up for the site clearance and construction stages, setting out detailed measures to ensure that the identified interests, potential interests and statutory obligations etc are appropriately treated, and identify the individuals who will be responsible for ensuring that the ecological mitigation requirements are met. The WPP should be agreed in advance by the Local Authority Ecologist, with responsibility for its implementation assigned to an appropriately qualified and/or experienced member of the development team who would act as an 'Ecological Clerk of Works'.
- 6.4.6 The services of an appropriately qualified ecologist should be available on an 'on-call' basis throughout the development in order to deal promptly with any protected species or other ecological matters which may arise during the clearance and construction works.

7.0 REFERENCES

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APPENDIX 1: SPECIES RECORDED

All species recorded by DCE 2020, unless otherwise indicated

Scientific Name	Common Name	South Wales Criteria					
		W	NG	CG	AG	MG	PIL
Trees & Scrub							
<i>Carpinus betulus</i>	hornbeam						
<i>Populus</i> sp	poplar sp.						
<i>Prunus laurocerasus</i>	cherry laurel						
<i>Rubus fruticosus</i> agg	bramble						
Herbaceous Plants							
<i>Alopecurus pratensis</i>	meadow foxtail						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Chamerion angustifolium</i>	rosebay willowherb						
<i>Dactylis glomerata</i>	cock's-foot						
<i>Epilobium</i> sp	willowherb species						
<i>Ficaria verna</i>	lesser celandine						
<i>Geranium pyrenaicum</i>	hedgerow crane's-bill						
<i>Holcus lanatus</i>	yorkshire fog						
<i>Hyacinthoides non-scripta</i>	bluebell	W					
<i>Jacobaea vulgaris</i>	common ragwort						
<i>Lotus corniculatus</i>	common bird's-foot trefoil		NG	CG			PIL
<i>Luzula campestris</i>	field wood-rush		NG				
<i>Plantago lanceolata</i>	ribwort plantain						
<i>Poa annua</i>	annual meadow grass						
<i>Potentilla anserina</i>	silverweed						
<i>Potentilla reptans</i>	creeping cinquefoil						
<i>Pteridium aquilinum</i>	bracken						
<i>Ranunculus acris</i>	meadow buttercup						
<i>Ranunculus repens</i>	creeping buttercup						
<i>Rumex acetosella</i>	sheep's sorrel				AG		
<i>Taraxacum officinalis</i> agg	dandelion						
Total		1	2	1	1	0	1

Indicator Species

CS – Contributory Species, W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG – Acid Grassland, MG – Marshy Grassland, PIL – Post Industrial Landscape

APPENDIX 2: DEFINITIONS OF SITE VALUE

International Value

Site carrying an internationally recognised designation such as Ramsar Site, World Heritage Site, Special Protection Area, Special Area of Conservation, Biosphere Reserve or Biogenetic Reserve, or:

Habitats: site supporting nationally significant areas of habitats of defined international community interest.

Species: site supporting nationally significant populations of species of defined international community interest.

National Value

Site meeting published Site of Special Scientific Interest (SSSI) designation criteria (NCC 1989), whether so designated or not.

Habitats: site supporting nationally significant areas of habitats of defined national rarity or interest.

Species: site supporting nationally significant populations or communities of UK Red Data Book, Nationally Notable or protected species (other than badger).

County Value

Site identified as a County Wildlife Site (CWS), Site of Importance to Nature Conservation (SINC) or similar at the county level (ie greater than district, borough or city level); meeting published CWS designation criteria (where these exist), but falling short of SSSI designation criteria, whether designated as a CWS or not.

Habitats: site supporting good examples of nationally threatened habitats, or extensive areas of habitats which are rare or unique in the county.

Species: site supporting large or strong populations or communities of nationally rare or protected species (other than badger), or of species which are rare in the county and uncommon nationally.

District Value

Sites failing to meet County Value criteria, but nevertheless supporting habitats, species or communities which appreciably enrich the ecological resource of the county, especially by virtue of their size or extent.

Habitats: sites supporting habitats uncommon in the county, small but unmodified fragments of nationally threatened habitats, or comprising extensive areas or systems of semi-natural habitats.

Species: sites supporting nationally rare species, or strong populations or communities of regionally uncommon species, which would not otherwise be present (ie they are critically dependant on the site characteristics).

Local Value

Habitats which fail to meet District Value criteria, but which appreciably enrich the ecological resource of the locality. This category can be further divided into:

- **High Local Value:** just failing to meet District Value Criteria; supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area.
- **Local Value:** sites which are of ecological value only in the context of their immediate surroundings. Rare or uncommon species may occur but are not restricted to the site or critically dependant upon it for their survival in the area.

Sites failing to meet any of the above can be considered as being of '**Negligible**' ecological value.

APPENDIX 3: REPTILE MITIGATION MEASURES – NRW GUIDANCE (CCW Draft Feb 2005)

For any development site which supports reptiles, or which contains habitats with the potential to support reptiles, NRW recommends detailed survey at an early stage. Where suitable survey information is unavailable, however, or where there is insufficient time to carry out the necessary surveys, it should be assumed that any habitats on the site which are suitable for reptiles do indeed support reptiles, and mitigate accordingly.

Legislation

The four most common British reptiles (comprising grass snake, adder, slow-worm and common lizard) are afforded so-called ‘partial protection’ under the Wildlife and Countryside Act 1981 (as amended). This protects individuals of all species from ‘intentional’ or ‘reckless’ killing and injury, but does not confer any direct protection to the habitats which support them.

Where it can reasonably be predicted that reptiles could potentially be killed or injured by activities such as site clearance, earthworks or construction operations etc, to carry out such activities in the absence of appropriate mitigation could legally constitute intentional or reckless killing or injuring, and could result in prosecution.

Where reptiles (other than sand lizard, smooth snake and turtles, all of which are subject to additional restrictions under the law) are present, or potentially present, on a development site, the developer should consider the need for mitigation at an early stage in the development programme. The presence of reptiles on a development site will not necessarily prevent the development from taking place, but it means that ‘reasonable’ mitigation measures must be put in place to prevent, as far as possible, the killing or injuring of any reptiles.

It is not necessary to obtain a licence to carry out works which affect reptiles, but it is always advisable to seek guidance in any case where a development could potentially cause impacts to reptiles, and to obtain advice regarding what would constitute ‘reasonable’ mitigation, although it is ultimately up to the developer to decide what is ‘reasonable’ (and to accept any consequences which may ensue). In most cases, the services of an appropriately qualified and experienced reptile consultant will be required.

The remainder of this document sets out the main elements of a typical reptile clearance strategy. It is recognised, however, that not all of the elements listed below will be necessary or appropriate in all cases, and that individual strategies will vary from site to site.

Reptile Clearance Methodology

If reptiles are confirmed as being present (or are assumed to be present, for example from habitat assessment) then measures should be put in place to avoid or minimise the killing and injuring of reptiles as a result of development operations. Ideally, a ‘Reptile Mitigation Strategy’ should be drawn up for the site by a suitably qualified person, and agreed in advance with either the NRW or the relevant Local Authority Ecologist.

Wherever possible, reptiles should be accommodated within the site, or on one or more adjacent or nearby site. The translocation of reptiles to a different site which lies at a distance from the development site should only be undertaken as a last resort. Where reptiles cannot be accommodated within the site, a suitable receptor site should be identified in advance and surveyed for suitability. If a reptile population already exists on the receptor site, then advance enhancement works to increase the ‘carrying capacity’ of the receptor site may be necessary. Adequate time should be allowed in the development programme for the safe clearance of reptiles ahead of any potentially harmful works using suitable means, which may vary from site to site.

It should be noted that the clearance of reptiles from a site can only be undertaken when the reptiles are active (ie, during the spring, summer and autumn months) and should never be attempted during the winter hibernation period (which runs approximately from November to March inclusive). This constraint may lead to conflict with other issues – the presence of nesting birds, for example, all species of which are protected against disturbance – which will also need to be taken into account and mitigated for accordingly².

² Hedgerow translocations or clearance of habitats such as trees, scrub, bramble or reedbed etc can lead to direct conflicts, which may require phased clearance or other mitigation measures to overcome.

Mitigation measures should apply to all areas of the site which will be subject to potentially harmful impacts, including the laying of haul routes, siting of contractors' compounds and the bulk storage of materials and soils etc. It should be remembered that reptiles may be present beneath the soil at depths of up to 250mm or more, as well as in locations such as amongst tree roots or buried rubble and brick waste etc.

Typical Mitigation Procedure

1. Where there are suitable receptor sites adjacent to the development site, mitigation should commence with the removal of tall vegetation from all areas affected by development to make them less attractive to reptiles, and to encourage them to move away voluntarily into adjacent habitats. Vegetation should initially be cut to a height of about 200mm, starting furthest away from the adjacent habitats and working towards them, so as to drive any reptiles which may be present towards the receptor habitats. All cutting must be done by hand (eg by strimmer or brush-cutter), rather than by tractor-drawn mowers, so as to minimise the risk of causing reptile casualties. All arisings should be removed immediately from the site following cutting.

After a maximum of two days, the vegetation of the site should be cut again in a similar pattern to a height of about 50mm, taking great care to avoid injuring any reptiles which may be present and with all arisings again being removed from the site. The vegetation of the site should then be maintained in this short condition for a minimum of two further days before proceeding to Step 2.

In some rare situations this staged cutting, coupled with the careful removal of any structures which may be used by sheltering reptiles (eg rubble piles, timber piles, drystone walls etc – see Step 3 below) may be sufficient to achieve 'clearance' of the site by rendering it so unsuitable for reptiles that no further measures are required. In these circumstances, the site should then be maintained in this unsuitable condition until the commencement of development works, which should then be preceded by 'destructive searching' (see Step 8 below). These situations are likely to be very unusual, however, and will require careful assessment in advance by an appropriately qualified person.

Where there are no suitable habitats in the surrounding area for reptiles to relocate to (for example if the site is surrounded by roads or hard standings, or is hemmed in by other developments) then this step should be ignored.

2. Reptile-proof fencing should be erected around the perimeter of the affected areas of the site. These should be erected in accordance with published specifications such as that contained in the Highways Agency's *Design Manual for Road & Bridges* (Vol 10(4) (7) HA116/05 *Nature Conservation Advice in Relation to Reptiles and Roads* or the forthcoming *Reptile Mitigation Guidelines* (English Nature). The fencing will normally be required to extend below ground level for a depth of about 250mm, and both the installation and fabrication process may require careful supervision by a suitably qualified reptile handler to ensure that no reptiles are accidentally injured in the process. On large sites it may be useful, and will probably speed up the process, if the site is subdivided into smaller parcels.

Reptile-proof fences may be either vertical 'no-pass' fences or sloping 'one-way' fences. The former will prevent the movement of reptiles in either direction, whilst the latter can be erected in areas where the site lies immediately adjacent to a suitable receptor sites, and will allow reptiles to leave the development area voluntarily.

3. Within the enclosed parcels, any rubble piles, drystone walls, tree roots, buried rubble and timber piles etc should be dismantled by hand to prevent reptiles from using them to shelter in. All arisings should be removed from the site. As far as possible, these operations should be carried out by hand, with the minimum tracking by any vehicles or machinery across the site. Complex or large structures may need to be carefully dismantled under the supervision of a reptile handler who can halt the works and rescue any reptiles which may be found sheltering in them.
4. Following the clearance of sheltering places, the vegetation of the enclosed parcel should be cut, if it has not already been so. Cutting should initially be to a height of about 200mm, starting at the centre of the parcel and working outwards towards the edges. All cutting must be done by hand (eg by strimmer or brush-cutter), rather than by tractor-drawn mower, so as to minimise the risk of causing reptile casualties. All arisings should be removed immediately from the site following cutting.

Note that for a linear site, such as a cycle-path or verge, strimming should be undertaken from the path working ahead and outwards at the same time, effectively cutting a 'V'-shape.

5. After cutting, the site should be strewn with 'refugia'. These should comprise a combination of suitable materials such as sheet metal, timber (eg chipboard), roofing felt and carpet tiles. These will be used by reptiles for sheltering

beneath, or for basking on, where they can be found and caught more easily. If the vegetation is already shorter than 200mm, refugia may be laid out straight away without cutting the vegetation. Refugia should be spread evenly around the site at a high density (ie about 100 per hectare).

6. Depending on the site, visits should be made to the site by a reptile handler over at least the next two days to check beneath the refugia, collect any reptiles which may be beneath them and remove them to the receptor habitats. In practice, it will usually take at least a week for the refugia to 'bed in', and daily reptile collection visits may need to take place over a period of several weeks. Reptile collecting visits must be undertaken in suitable weather conditions, ie in dry, still conditions with air temperatures in excess of 10°C.
7. Daily or near-daily reptile collection and removal visits should continue until reptile numbers under the refugia begin to decline noticeably, at which point the vegetation of the site can be cut again, using the same methodology as at Step 4, but this time to a height of 100mm. Daily reptile collection and removal visits should continue for a further minimum of three days, in suitable weather conditions.
8. When reptile numbers are again detected to be declining, a final cut can be made to achieve very short, close-cropped vegetation of about 40-50mm height, again using the same methodology as at Step 4. This staged removal of the vegetation is likely to drive reptiles to make greater and greater use of the refugia, by removing alternative sheltering places and rendering the rest of the site unattractive to reptiles.

Depending on the individual circumstances of the site, it may be advisable to review the spread and location of refugia, and to begin to cluster these towards the edges of the site or in selected locations, although if this is done then the areas where refugia are no longer present must be kept in a highly unattractive state for reptiles. The manipulation of refugia numbers and locations may be used to reduce the amount of time needed for a reptile handler to check for reptiles. On a small site, however, there is probably no point in moving the refugia, and moving refugia may reduce capture efficiency³. This is a matter which will require expert assessment.

It is essential that the integrity of the reptile-proof fences is maintained throughout the trapping period. These should be checked on every visit, and any breaks repaired within 24 hours, otherwise reptiles could re-enter the trapping area from outside. An advantage of subdividing the trapping areas into compartments is that any breaks in the perimeter fence which do occur, and which go undetected for any length of time, will only affect the compartment it lies alongside, and not the whole trapping area.

On sites where vandalism is a significant problem, it may be necessary to institute security measures to ensure that the reptile-proof fences remain intact throughout the trapping period. The measures necessary will vary from site to site, but could include the use of 'Heras' fencing and/or the presence of site security personnel in extreme cases.

9. Daily or near-daily reptile collection visits should carry on until 10 successive nil-returns have been achieved, in suitable weather conditions, following the last vegetation cut. Following a final inspection by a suitably qualified person (the final inspection can be done at the same time as the last check of the refugia). At this point, the trapping records should be summarised and sent to the relevant Species Officer at the NRW. Although there is no obligation to do this, it will assist in maintaining a clear position with the statutory body and will encourage a cooperative dialogue. This may be useful in establishing that there has been full and reasonable compliance with the legal requirements in the event of a challenge arising.

Note that there is no need to have 10 successive nil-returns between the vegetation cuts, but that these cuts should be at least 2 days apart and the numbers should be showing a decline (the exact time taken should be determined by the reptile handler in charge, and will vary from site to site).

10. NRW will then write to the developer to "release" the site to the developer or site engineers. Again, there is no obligation to obtain written consent from the NRW, but it will further demonstrate that there has been best-practice compliance to the satisfaction of the statutory body.
11. The area cleared of reptiles should then ideally be immediately stripped of all vegetation and the topsoil removed, leaving bare subsoil. This final stripping may be done with machinery (ideally using a bucket with tines)⁴. In some cases it may be desirable that the site is 'destructively searched' prior to development, especially if the trapping

³ Reptiles usually take a while to find refugia (hence the 'bedding in'), and once they do they tend to use them habitually. Moving refugia may simply confuse the animals and be counterproductive.

⁴ It is worth noting that there can be a conflict on sites where there is also an archaeological watching brief: archaeologists usually specify a bladed bucket to produce smearing in which archaeological layers can be seen. A tined bucket makes this much more difficult.

out has not gone absolutely to plan (eg vandalism problems etc). This means that the topsoil layer to a depth of about 250mm is removed from the site in strips or sections, working sequentially across the site, using a digger with a tined bucket, under the supervision of a reptile handler who is able to check for the presence of any reptiles remaining in the soil. Where such reptiles are found, the reptile handler will stop the works, rescue the animal and release it to the receptor area.

12. The edges of the cleared area should be marked with high-visibility temporary fencing to prevent accidental trafficking of vehicles on the uncleared parts of the site (if any).
13. If there is any delay between the end of the reptile clearance operation and the commencement of development, measures must be taken to prevent the recolonisation of the site by reptiles from adjacent habitats, unless there is no such habitat adjacent to the site. To prevent reptiles re-entering the cleared area, the developer must therefore either:
 - a) Keep the area in the cleared condition obtained at Step 9 - bare earth with no vegetation. To keep the area bare, the developer could consider using an approved herbicide. Or:
 - b) Retain the reptile-proof fencing until development works are underway in the area concerned. If this option is chosen, the integrity of the reptile-proof fences will need to be checked regularly throughout the intervening period (ie daily or near-daily), and any breaks repaired within 24 hours. If undetected breaks occur for any length of time, the affected area (or compartment) will need to be trapped out again by repeating Steps 5-9 above.

Maintenance of the site in a cleared and reptile-proof condition is really only critical during the reptiles' active period, since recolonisation is not likely to occur during the winter months. Therefore if a site has been cleared of reptiles in summer prior to development in winter, the reptile-proof fences can be removed (or allowed to deteriorate) once the hibernation period has begun (ie after about the end of October). If the start of development is subsequently delayed beyond the end of the hibernation period, however, (ie after about the end of March) it may be necessary to reinstall the fences, or even re-trap the site.

The site can be re-opened to reptiles by removing the fencing after all construction works are complete.

Catching Methods

The use of refugia at high densities (100/ha) can be very effective for collecting slow-worms. However, other species are less readily found under refugia, and can be much more difficult to catch. 'Noosing' of common lizards whilst sunning on refugia can be effective, but requires skill and is very time-consuming. Snake catching is also a specialised skill, and carries health and safety implications. However, both snakes and common lizards tend to be more mobile than slow-worms, and are therefore more likely to reslake to the vegetation clearance and remove themselves from the trapping area where one-way fences make this possible.

Keeping Records

For trapping records, we recommend logging the date, time, weather conditions, temperature, minimum night temp (night before), species caught and location caught (a rough map would suffice, eg area A, B or C) and, if possible, the sex and age of the animals, and if gravid. Ideally a report of the trapping operation, in which all of the capture records are summarised and evaluated, should be prepared at the end of the operation and submitted to the NRW and/or the local authority ecologist. There is no obligation to do so, but the keeping of clear and unambiguous records may be essential in establishing that there was full and reasonable compliance with the law in the event of there being any challenge to the methods used.

When to Trap

Ideally clearance should begin as early as 1 April, with the aim of the site being cleared by the end of July. Clearance operations are less desirable later in the summer, since after about June there is the chance that juvenile animals will also be present, which as well as being extremely difficult to see and catch, may also significantly increase the number of animals on the site.

Post-development Monitoring

In addition to the above, we would encourage the developer to put in place a scheme to monitor the effects of the development on the reptiles and to see if the mitigation has been successful. The design of any monitoring exercises should be discussed in advance with the NRW.

APPENDIX 4: LANDSCAPING SPECIES

Trees and shrubs

All planting stock should be of native species which are indigenous to the region and will be of Welsh or at least UK, provenance.

Trees/shrubs

<i>Quercus robur</i> and/ or	Pedunculate oak
<i>Quercus petraea</i>	Sessile oak
<i>Fraxinus excelsior</i>	Ash
<i>Acer campestre</i>	Field maple
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Common hawthorn
<i>Betula pendula</i>	Silver birch
<i>Cornus sanguinea</i>	Dog wood
<i>Ilex aquifolium</i>	Holly
<i>Malus sylvestris</i>	Crab apple
<i>Prunus avium</i>	Wild cherry
<i>Prunus spinosa</i>	Blackthorn
<i>Rosa canina</i>	Common dog-rose
<i>Sorbus aucuparia</i>	Rowan
<i>Taxus baccata</i>	Yew
<i>Viburnum opulus</i>	Guelder rose
<i>Euonymus europaeus</i>	Spindle
<i>Sambucus nigra</i>	Elder

Planting should be carried out using 600mm bare-rooted transplants in spiral plastic guards (rabbit/vole protection) where appropriate. Standard tree aftercare should be applied.

Climbers

<i>Clematis vitalba</i>	Traveller's-joy
<i>Lonicera periclymenum</i>	Honeysuckle
<i>Solanum dulcamara</i>	Bittersweet
<i>Tamus communis</i>	Black bryony

Wildlife friendly plants for formal landscaping

The species listed below are primarily non-native species, which are commonly found in gardens and formal landscape areas. Those native species included are aesthetically pleasing and suitable for formal planting schemes.

Woody Species

Bodnant viburnum (<i>Viburnum x bodnantense</i>)	Lilac (<i>Syringa vulgaris</i>)
Californian lilac (<i>Ceanothus spp.</i>)	Mahonia (<i>Mahonia spp.</i>)
Firethorn (<i>Pyracantha spp.</i>)	Mock orange (<i>Philadelphus spp.</i>)
Laurustinus (<i>Viburnum tinus</i>)	Serviceberry (<i>Amelanchier canadensis</i>)
Japanese quince (<i>Chaenomeles japonica</i>)	White jasmine (<i>Jasminum officinale</i>)

Herbs

Alpine rock-cress (<i>Arabis alpina</i>)	Orpine (<i>Sedum telephium</i>)
Angelica (<i>Angelica archangelica</i>)	Perennial cornflower (<i>Centaurea montana</i>)
Annual honesty (<i>Lunaria annua</i>)	Perennial honesty (<i>Lunaria rediviva</i>)
Aubretia (<i>Aubretia deltoidea</i>)	Perennial sunflower (<i>Helianthus decapetalus</i>)
Autumn Stonecrop (<i>Sedum 'Purple Emperor'</i>)	Phlox (<i>Phlox paniculata</i>)
Borage (<i>Borago officinalis</i>)	Poached-egg plant (<i>Limnanthes douglasii</i>)
California poppy (<i>Eschscholtzia californica</i>)	Purple coneflower (<i>Echinacea purpurea</i>)
Canadian Fleabane (<i>Erigeron canadensis</i>)	Purple-top vervain (<i>Verbena bonariensis</i>)

Candytuft (<i>Iberis sempervirens</i>)	Red campion (<i>Silene dioica</i>)
Christmas rose (<i>Helleborus niger</i>)	Red valerian (<i>Centranthus ruber</i>)
Common mallow (<i>Malva sylvestris</i>)	Rosemary (<i>Rosmarinus officinalis</i>)
Common poppy (<i>Papaver rhoeas</i>)	Sage (<i>Salvia officinalis</i>)
Cosmos (<i>Cosmos bipinnatus</i>)	Shrubby Veronica (<i>Hebe recurva</i>)
Evening primrose (<i>Oenothera biennis</i>)	Snapdragon (<i>Antirrhinum majus</i>)
Wood forget-me-not (<i>Myosotis sylvatica</i>)	Soapwort (<i>Saponaria officinalis</i>)
French marigold (<i>Tagetes spp.</i>)	Spear mint (<i>Mentha spicata</i>)
Globe thistle (<i>Echinops ritro</i>)	Spring crocus (<i>Crocus chrysanthus</i>)
Great mullein (<i>Verbascum thapsus</i>)	Sunflower (<i>Helianthus annuus</i>)
Grecian windflower (<i>Anemone blanda</i>)	Sweet alyssum (<i>Lobularia maritime</i>)
Heart-Leaf Ice-plant (<i>Aptenia cordifolia</i>)	Sweet bergamot (<i>Monarda didyma</i>)
Hollyhock (<i>Althaea rosea</i>)	Sweet rocket (<i>Hesperis matronalis</i>)
Hyssop (<i>Hyssopus officinalis</i>)	Sweet William (<i>Dianthus barbatus</i>)
Ice plant (<i>Sedum spectabile</i>)	Tickseed (<i>Coreopsis spp</i>)
Lacy phacelia (<i>Phacelia tanacetifolia</i>)	Tobacco plant (<i>Nicotiana affinis</i>)
Late Michaelmas-daisy (<i>Aster x versicolor</i>)	Wallflower (<i>Cheiranthus cheiri</i>)
Lavender (<i>Lavandula angustifolia.</i>)	Winter aconite (<i>Eranthis hyemalis</i>)
Lenten rose (<i>Helleborus orientalis</i>)	Yellow alyssum (<i>Alyssum saxatile</i>)
Ox-eye daisy (<i>Leucanthemum vulgare</i>)	Yellow loose-strife (<i>Lysimachia vulgaris</i>)
Marjoram (<i>Origanum vulgare</i>)	

Sources: *Plants for wildlife friendly Gardens* (Natural England), *Planting Gardens for Birds* (RSPB), *Gardening for Bats* (Bat Conservation Trust) and *Starting a Butterfly Garden* (School Garden Company).

APPENDIX 5: EXAMPLES OF SUITABLE BIRD AND BAT BOX DESIGNS

EXAMPLES OF SURFACE-MOUNTED BAT BOXES

Tree-mounted boxes



Schwegler 2F General Box



Schwegler 1FD Nursery Box



Schwegler 1FS Nursery Box (Large)



Schwegler 1FW Winter Box
(Very large box)



Schwegler 2FN
Noctule Box



Schwegler 2F DFP
Daubenton's Bat Box



Miramar General Box

Tree or building-mounted boxes



Schwegler 1FF General Box



Schwegler 1FQ Decorative Box



Schwegler 1FFH General Box



Vivara Woodstone Low Profile Box



NHBS Cavity Box
(Brown Long-Eared Bat Box)



NHBS Crevice Box

EXAMPLES OF NON-INTEGRATED BIRD BOXES FOR TREES AND BUILDINGS

Suspended Designs



Schwegler 1B
General box



Schwegler 2H open-front
'robin' box



Schwegler 5
'large owl' box



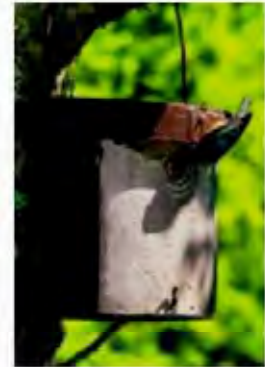
Schwegler 1CGA
'small owl' box



Schwegler 20
'starling' box



Schwegler 28 'kestrel' box



Schwegler 5KL 'nuthatch' box

Surface-mounted Designs



Schwegler 1MR general box



Vivara Pro open-front
'robin' box



Vivara Pro ova open-front
'robin' box



Vivara Pro 'starling' box



Vivara Pro 28/32mm
general box



Vivara Pro 28/32mm
oval general box

PHOTOGRAPHS OF SITE (May 2020)



Disconnected hornbeam monocultural hedge along eastern boundary.



Semi-improved grassland predominating the centre of the site with native bluebell.



Emergent bracken along northern site boundary.



Line of off-site poplar trees just over northern site boundary.



Bramble scrub in the north-west of the site.



Bracken / bramble mosaic in north-western corner of the site.



Tall ruderal vegetation adjacent to bramble scrub and cherry laurel hedge.



Semi-mature willow tree along southern boundary immediately adjacent to cherry laurel hedge.

**Forest Lodge Road, Cwmavon
Ecological Assessment**

Plan 1: Site Location & Context

DCE 1093

NTS

June 2020



Site Boundary

Courtesy of Google Maps



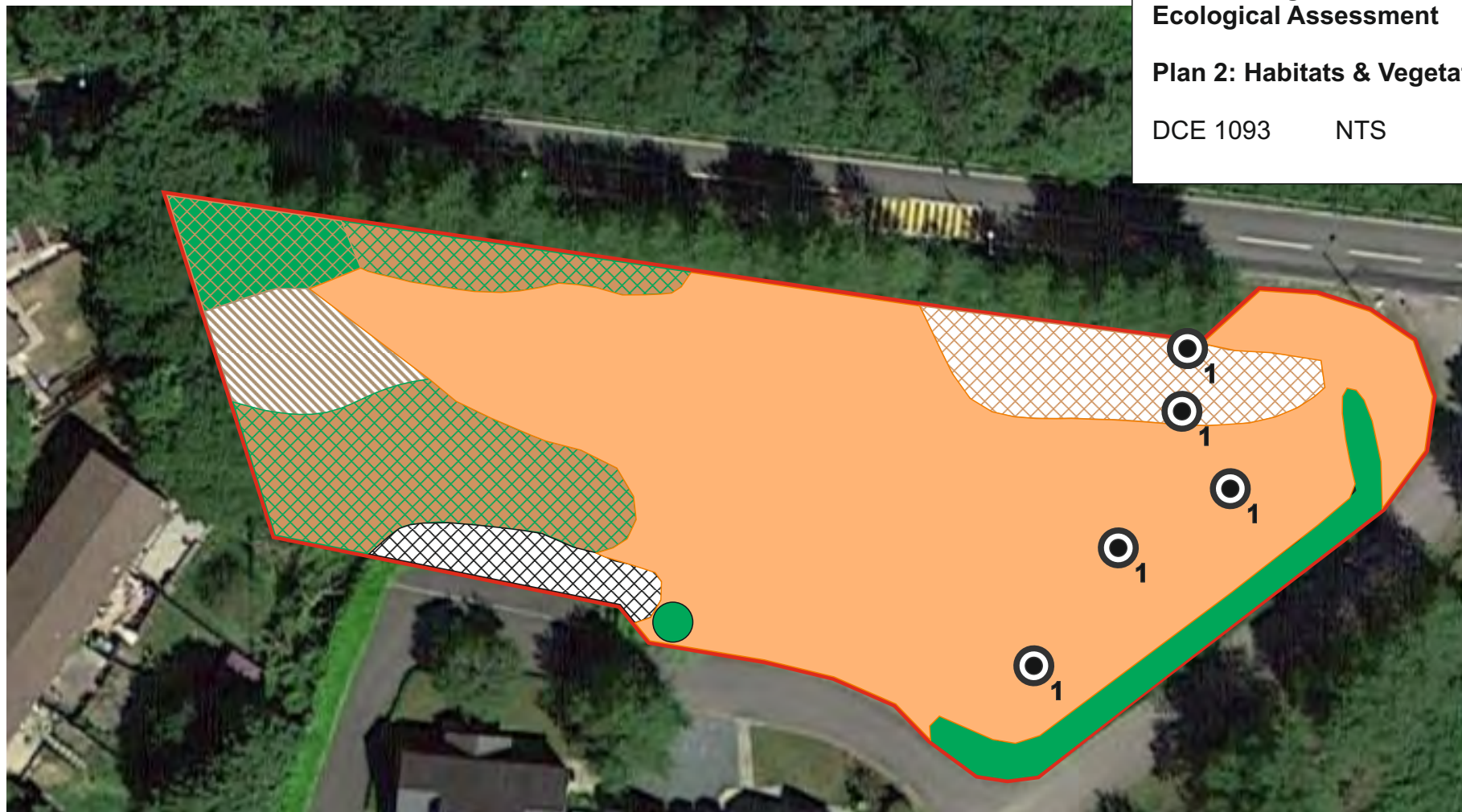
Forest Lodge Road, Cwmavon
Ecological Assessment

Plan 2: Habitats & Vegetation

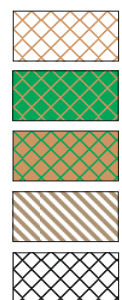
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June 2020



Key



Bracken - continuous

Bracken/Bramble Mosaic

Bramble Scrub

Tall Ruderal

Cherry Laurel Hedge



Semi-improved Grassland

Hornbeam Hedge

Scattered Trees



Native Bluebell

Site Boundary



**Forest Lodge Road, Cwmavon
Ecological Assessment**

Plan 3: Ecological Evaluation

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June 2020



Key



Local Value



Site Boundary

