Extended Phase I Survey report for a proposed building development on land south of Alma Street, Llanarth, Ceredigion

Client: Morgan and Davies

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1. Introduction

Matt Sutton Ecology was contracted by Rhys ap Dylan at Morgan and Davies to carry out an extended Phase I survey in support of an application to Ceredigion County Council for housing development.

The proposed development is on land between the Alma Road and the large property at Gwynfryn, Llanarth, Ceredigion, centred around grid reference SN 42385 57438 (see figure 1 below).

The aim of the survey is to provide baseline data on habitat and species, both on and adjacent to the site, and to investigate potential impacts that may occur during construction and post-construction stages. An assessment is made of any potential impact on protected species in the area.

Figure 1. Proposed Development Site at Llanarth with field numbers used

Site Description

The proposed site comprises three fields with both dry and damp grassland. A small area of woodland is present, and hedges are found within and around the site. It is adjoined by a wooded stream valley to the east, a large detached property set in wooded grounds to the south-west, an improved field to the south-east, the main road and associated housing to the north, and a school to the west.

Figure 2. Proposed Development Site

2. Methodology

2.1 Extended Phase I survey

A thorough site inspection was made on 22nd July 2014. The survey followed the methodology set out by the Handbook for Phase 1 Habitat Survey (JNCC, 1993) and then subsequently by the Institute of Environmental Assessment (1995). The methods provide quick and accurate classification of habitats.

In addition the survey looked for field signs of protected species and assessed the habitat for their potential presence. Measures taken included:-

- A search for signs of badgers on the site.
- Consideration of the potential impact of the development on bats and other protected species.
- Recording birds and identifying the suitability of the habitat for nesting birds especially those listed as species of conservation concern.
- Recording a list of plants found on the site, shown in Appendix 1.

2.2 Constraints

There were no constraints to the survey. Full access was granted to the site and the weather was good. Plant life was identifiable from vegetative material in the cut fields, and from flowering or fruiting specimens in the hedge-banks.

3. Results

3.1 Vegetation and habitat survey

The habitats on the site were recorded in detail. Habitats adjoining the site are also mapped where relevant. The site comprises five main habitat types; improved grassland, poor-semi improved grassland, marshy grassland, broad-leaved woodland and hedgerow. Further areas of broad-leaved woodland and mixed plantation woodland (A1.3.2) are present adjacent to the site. No watercourses are present.

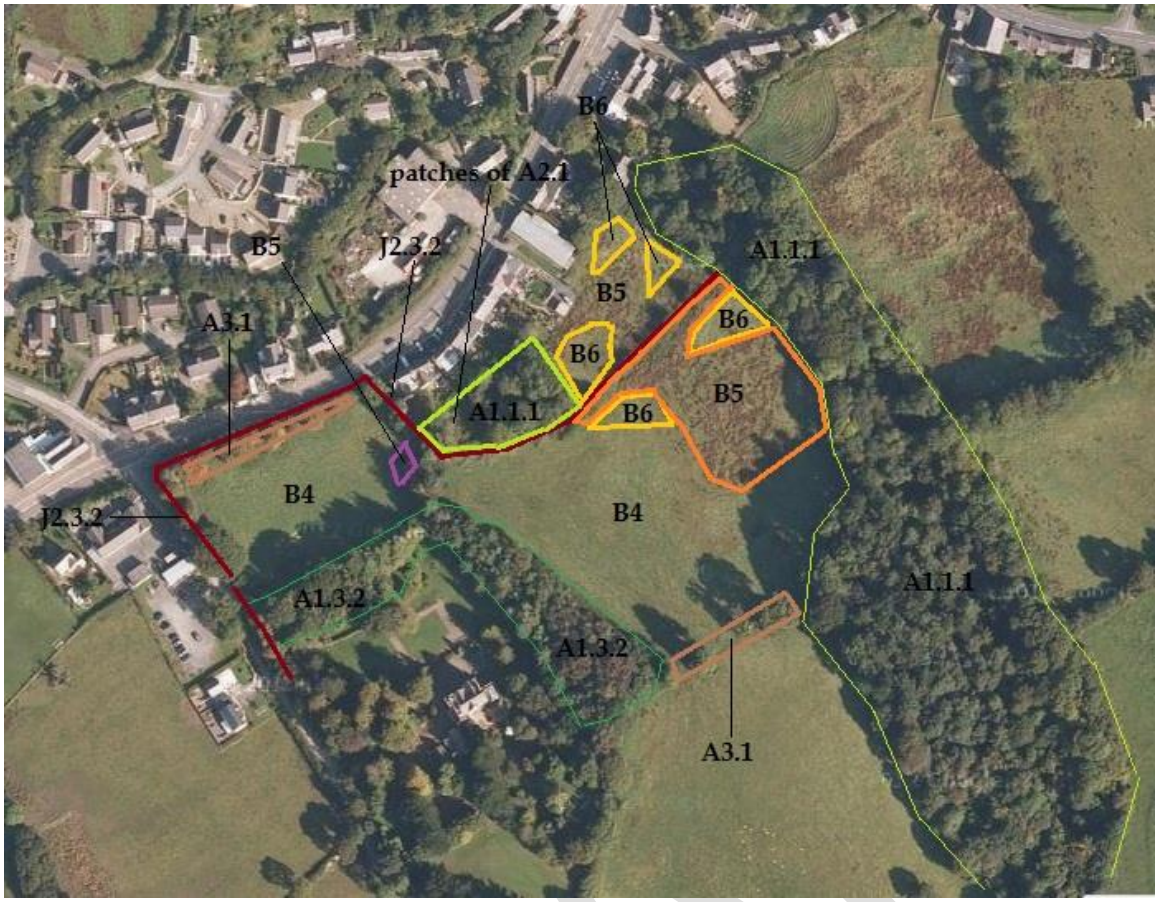

Figure 3. Phase I Habitat Map

Improved Grassland (B4)

The drier ground in the higher, southern half of field 2 has clearly been extensively fertilised. A lush growth of agricultural grass species, predominantly perennial rye-grass (*Lolium perenne*), comprises the majority of the sward here. Soft rush (*Juncus effusus*) is thinly scattered across the slope.

The grassland in field 1 has frequent perennial rye-grass, but also an abundance of common bent (*Agrostis capillaris*), Yorkshire fog (*Holcus lanatus*) and sweet vernal grass (*Anthoxanthum odoratum*). The associated species are chiefly agriculturally-favoured plants such as white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*) and broad-leaved dock (*Rumex obtusifolius*), but species more typical of semi-improved grassland such as red clover (*Trifolium pratense*) and meadow buttercup (*Ranunculus acris*) are also sparsely present. Tall fescue (*Festuca arundinacea*) is frequent in the damper north-east corner.

All of the improved grassland had been mown for hay or silage earlier in the summer.

The habitat is of little or no ecological significance.

Marshy Grassland (B5)

Soft rush dominates field 3 and the damper, lower parts of field 2. This is a dry, species-poor and poor quality example of the habitat, presumably subjected to agricultural improvement at some point in the past and now reverting. It is lacking in almost all of the characteristic wetland plants associated with better quality rush-pastures in the county – an abundance of greater bird's-foot trefoil (*Lotus pedunculatus*) is the only feature allowing placement as marshy grassland rather than improved grassland with rush. Perennial rye-grass is frequent in grassy patches between the tussocks. Sharp-flowered rush (*Juncus acutiflorus*) is absent, but jointed rush (*Juncus articulatus*) is locally frequent. Marsh thistle (*Cirsium palustre*) is also frequent. Only a narrow strip along the north-western edge of field 2 shows a relative lack of disturbance, with meadowsweet (*Filipendula ulmaria*), opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*), meadow vetchling (*Lathyrus pratensis*), hoary willowherb (*Epilobium parviflorum*) and an abundance of American willowherb (*Epilobium ciliatum*). Small areas of **Poor Semi-improved Grassland (B6)** occur where the rush is sparse or absent in field 2, and in field 3 in transition to the improved grassland. Crested dog's tail (*Cynosurus cristatus*), meadow foxtail (*Alopecurus pratensis*) and red bartsia (*Odontites verna*) are among the additional species here.

Semi-natural Broad-leaved Woodland / Scrub (A1.1.1 / A2.1)

A small area of young woodland and scrub adjoins the northern boundary in the centre of the site. The western part has young ash (*Fraxinus excelsior*), grey willow (*Salix cinerea*) and hazel (*Coryllus avellana*) emerging through patches of bramble, whilst the eastern part has some more mature trees of the same species. The ground flora has native species including enchanter's nightshade (*Circeae lutetiana*), false brome (*Brachypodium sylvaticum*) and lady fern (*Athyrium filix-femina*), but also a number of naturalised garden 'throw-outs'. The wood is used as an informal recreation area, and various paths and wooden structures have been created.

Hedge with Trees (J2.3.2)

A mature hedge bounds the northern and western sides of field 1. This consists of a 1m bank, topped by a hedge of unmanaged shrubs and trees. The western side has large specimens of beech (*Fagus sylvatica*), hybrid oak (*Quercus* x *rosacea*), common lime (*Tilia* x *europaea*) and the 'Leopoldii' cultivar of sycamore (*Acer pseudoplatanus*). Smaller trees or shrubs of Dutch elm (*Ulmus* x *hollandica*), privet (*Ligustrum vulgare*), rhododendron (*Rhododendron ponticum*), hawthorn (*Crataegus monogyna*) and holly (*Ilex aquifolium*) are also present in this varied hedge. It could potentially be classed as a species-rich hedge with trees (J2.3.1), although the trees are mostly of planted origin and the ground flora is unremarkable. It comprises common ferns such as soft shield fern (*Polystichum setiferum*) and hart's-tongue fern (*Phyllitis scolopendrion*), together with other shade-tolerant species such as red campion (*Silene dioica*) and navelwort (*Umbilicus rupestris*). To the north, the hedge is hawthorn dominated with some ash; a widely spaced row of horse chestnut (*Aesculus hippocastanum*) runs inside this. The eastern side of field 1 has a similar hedge with the addition of hazel, and a bush of cherry laurel (*Prunus laurocerasus*). A large fungus - dryad's saddle (*Polyporus squamosus*) was found on the horse chestnut here.

The north-western boundary of field 2 has a hedge-bank dominated by grey willow, together with a mature oak, some Dutch elm, hazel and hawthorn, and young suckers of bird cherry (*Prunus avium*). Other boundaries are generally formed by fencing against adjoining woods, or gardens. That against the wooded grounds of 'Gwynfryn' has an overhanging growth of species, including red alder (*Alnus rubra*), a seldom encountered tree in the county.

Scattered Broad-leaved Trees (A3.1)

The boundary on the southern side of field 1 has a low bank with no shrubs, but four fine specimens of hybrid oak (*Quercus x rosacea*). These trees appear to have grown undisturbed without trimming. The horse chestnut row behind the boundary in field 1 could also be classed as scattered trees. These are mature, with one standing and one fallen dead tree also present. As well as the broad-leaved trees, two sitka spruce trees (*Picea sitchenis*) flank the opening between fields 1 and 2.

Horse chestnuts (left) and sitka spruces (right)

3.2 Protected species

No badger setts, runs, latrines or signs of foraging were found on the site. The development will not affect badgers.

The managed agricultural habitats are generally unsuitable for reptile and amphibian species. No watercourses are present, so there is no potential for breeding amphibians. The hedgebanks are largely unsuitable for reptiles, being densely vegetated and shaded, and none were seen during the survey. However, the area of scrub and woodland could conceivably provide habitat for basking or hibernating common lizards or slow-worms.

The site is of limited potential value to nesting birds, and the hedgebanks are only likely to hold small numbers of common birds such as dunnocks. Nuthatches and great spotted woodpeckers were noted in association with the mature oaks, and could potentially breed here. A treecreeper was seen entering a crevice under bark on one of the dead sycamores, and this would provide an ideal nesting location. The relatively late survey date precluded a full assessment of breeding birds.

No bat survey was carried out. Some of the mature oak and horse chestnut trees have ivy or crevices which could be exploited by roosting bats. The continuous nature of the woody vegetation makes the hedges of potential value as feeding or commuting corridors. The presence of a wooded stream valley to the east, and a mansion set in wooded grounds to the west, would increase this potential. The fields themselves appear not to offer particularly significant foraging habitat.

3.3 Invasive Species

Two invasive species of plant – Japanese knotweed (*Fallopia japonica*) and montbretia (*Crocosmia x crocosmiflora*) - were recorded in the small woodland. Various other naturalised garden plants, including an unidentified species of cotoneaster and Wilson's Honeysuckle (*Lonicera nitida*), are also present here.

Japanese knotweed

4. Discussion

4.1 Scheme Details

The proposal is for a housing development with houses, access roads and associated landscaping. Details of site layout and highways access were not available prior to survey.

The current field entrance lies opposite the school, marked by this mature oak

4.2 Recommendations

Bats

A bat activity survey would be required to assess the value of the sites to bats. Wherever possible, mature trees should be retained within the proposed development. All mature trees earmarked for felling should be closely examined for cavities with potential for roosting bats.

Consideration should be given to specifically designed bat roost features within new buildings.

Hedgerows

All hedges are listed as a priority habitat in Ceredigion (Ceredigion Biodiversity Partnership, 2002). The Phase I survey found the hedges to be much the most ecologically rich habitat within the survey area, and, as such, of relative significance to wildlife. However, they are not especially species-rich, the standard trees are mostly of non-native species, and the proposed development may be able to retain most hedge-banks.

Birds

Any clearance of trees or shrubs could potentially impact on breeding birds, and work should be carried out during the period end of August to end of March.

4.3 Promotion of Biodiversity at the Site

The bulk of the grassland on the site is of very little ecological interest. Biodiversity gains could be made in the landscaping associated with the development, and this is more likely to be the case if good 'wildlife gardening' principles are employed, using native species where possible. 'Bat-friendly' designs could be incorporated into proposed buildings. The small woodland on the site currently provides a recreation area for young people, and it would be desirable to retain or create an informal area of such habitat for this to continue. Mature trees should be incorporated into the scheme design wherever possible.

5. Summary and Conclusions

The proposed building development does not present a significant ecological risk to habitats or species in the area, and no protected species or habitats of conservation concern are affected.

6. References

A LOCAL BIODIVERSITY ACTION PLAN FOR CEREDIGION, Ceredigion Biodiversity Partnership.

List of Ceredigion LBAP species, Ceredigion Biodiversity Partnership, 2002.

List of Ceredigion LBAP habitats, Ceredigion Biodiversity Partnership, 2002.

Handbook for Phase I habitat survey Nature Conservancy Council 1990

Appendix 1

Species recorded at the site during the walkover visit 22/07/2014

Plants

Common Name	Species
American Willowherb	*Epilobium ciliatum*
Atlantic Ivy	*Hedera hibernica*
Ash	*Fraxinus excelsior*
Barren Strawberry	*Potentilla sterilis*
Beech	*Fagus sylvatica*
Bird Cherry	*Prunus avium*
Blackthorn	*Prunus spinosa*
Bracken	*Pteridium aquilinum*
Bramble	*Rubus fruticosus*
Bristle Club-rush	*Isolepis setacea*
Broad-leaved Dock	*Rumex obtusifolius*
Cleavers	*Galium aparine*
Cock's-foot	*Dactylis glomerata*
Common Chickweed	*Stellaria media*
Common Dog-violet	*Viola riviniana*
Common Hemp-nettle	*Galeopsis tetrahit*
Common Lime	*Tilia x europea*
Common Mouse-ear	*Cerastium fontanum*
Common Nettle	*Urtica dioica*
Common Polypody	*Polypodium vulgare*
Common Sorrel	*Rumex acetosa*
Creeping Bent	*Agrostis stolonifera*
Creeping Buttercup	*Ranunculus repens*
Creeping Soft Grass	*Holcus mollis*
Crested Dog’s-tail	*Cynosurus cristatus*
Cuckoo Pint	*Arum maculatum*
Curled Dock	*Rumex crispus*
Dandelion	*Taraxacum officinale*
Dog Rose	*Rosa canina*
Dutch Elm	*Ulmus x hollandica*
Elder	*Sambucus nigra*
Enchanter’s Nightshade	*Circaea lutetiana*
False Brome	*Brachypodium sylvaticum*
False Oat-grass	*Arrhenatherum elatius*
Floating Sweet Grass	*Glyceria fluitans*
Foxglove	*Digitalis purpurea*
Gooseberry	*Ribes uva-crispa*
Gorse	*Ulex europaeus*
Greater Bird’s-foot trefoil	*Lotus uliginosus*
Great Willowherb	*Epilobium hirsutum*

Hart's-tongue Fern	*Phyllitis scolopendrion*
Hawthorn	*Crataegus monogyna*
Hazel	*Coryllus avellana*
Hedge Woundwort	*Stachys sylvatica*
Herb Robert	*Geranium robertianum*
Hoary Willowherb	*Epilobium parviflorum*
Honeysuckle	*Lonicera periclymneum*
Hogweed	*Heracleum sphondylium*
Holly	*Ilex aquifolium*
Horse Chestnut	*Aesculus hippocastaneus*
Japanese Knotweed	*Fallopia japonica*
Jointed Rush	*Juncus articulatus*
Lady Fern	*Athyrium filix-femina*
Male Fern	*Dryopteris filix-mas*
Marsh Bedstraw	*Galium palustre*
Marsh Cudweed	*Gnaphalium uliginosum*
Marsh Foxtail	*Alopecurus geniculatus*
Meadowsweet	*Filipendula ulmaria*
Meadow Buttercup	*Ranunculus acris*
Meadow Vetchling	*Lathyrus pratensis*
Montbretia	*Crocosmia x crocosmifolia*
Navelwort	*Umbilicus rupestris*
Nettle	*Urtica dioica*
Oak	*Quercus* incl. *Q. x rosacea*
Oat	*Avena sativa*
Opposite-leaved Golden Saxifrage	*Chrysosplenium oppositifolium*
Osier	*Salix vimnalis*
Perennial Rye-grass	*Lolium perenne*
Privet	*Ligustrum vulgare*
Intermediate Polypody	*Polypodium interjectum*
Red Alder	*Alnus rubra*
Red Bartsia	*Odontites verna*
Red Campion	*Silene dioica*
Red fescue	*Festuca rubra*
Rhododendron	*Rhododendron ponticum*
Rosebay Willowherb	*Chamaerion angustifolium*
Rough Meadow Grass	*Poa trivialis*
Sessile Oak	*Quercus petraea*
Sitka Spruce	*Picea sitchensis*
Slender St. John's-wort	*Hypericum pulchrum*
Small Sweet Grass	*Glyceria declinata*
Square Stalked St. John's-wort	*Hypericum tetrapetrum*
Soft Rush	*Juncus effusus*
Soft Shield Fern	*Polystichum setiferum*
Spear Thistle	*Cirsium vulgare*
Sweet Vernal Grass	*Anthoxanthum odoratum*
Sycamore	*Acer pseudoplatanus*
Tall Fescue	*Festuca arundinacea*

Tall Tutsan	*Hypericum x inodorum*
Toad Rush	*Juncus bufonius*
White Clover	*Trifolium repens*
Wilson's Honeysuckle	*Lonicera nitida*
Wood Avens	*Geum urbanum*
Wood Dock	*Rumex sanguineus*
Yorkshire-fog	*Holcus lanatus*

Birds

Great Spotted Woodpecker
Nuthatch
Treecreeper
Swallow
Robin
Blue Tit
Blackbird