

INTERNAL MEMORANDUM

To: David Cross
From: Matt Davies (Ecologist)
Ext: 5278
Memo number: 4
Date of previous memo: 23/02/2022
Date: 21/07/2022

SUBJECT: P/21/0358 | Residential development and associated engineering, access and landscaping works | Land Off Elm Tree Grove Twynyrodyn Merthyr Tydfil

Comments (questions and requirements highlighted in green)

1. Extended Phase 1 Habitat Survey / Preliminary Ecological Assessment Report. Land at Twynyrodyn, Merthyr Tydfil. TerraAqua Ecological Services, July 2022

Survey work has now been undertaken in an optimal survey period - June 2022. This means a more accurate and representative assessment of the ecological value of the onsite grassland has been made. Consequently, the diversity of the grasses and herbs has risen from 'relatively low' to 'relatively moderate'.

Page 18: 5.1.1 Unimproved Grasslands

'... changes were observed within the sward compared to those recorded within the Preliminary Ecological Assessment/Phase I survey of 2019 (TerraAqua, 2019) including a more diverse mosaic of wet and dry grassland habitats including small patches of heather and Cladonia sp. The 2022 surveys highlight a higher degree of floristic diversity than that recorded in 2019 and 2021 both previous surveys having been undertaken outside the optimal window for vegetation surveys.'

Page 18: 5.1.1 Unimproved Grasslands

This references the Environment (Wales) Act 2016 in relation to certain grassland types listed in Section 7 as Habitats of Principal Importance. The specific habitats are Lowland Meadows (neutral), Lowland calcareous grassland (calcareous) and Lowland dry acidic grassland (acid). The report does not explicitly state whether onsite grassland habitat types present qualify (in and of themselves) as Habitats of Principal Importance, but rather describes the grassland as a mosaic of all three.

Page 19: Table 3

This shows x13 indicator species (NB not 12 as stated) for neutral grassland (based on The South Wales Wildlife Sites Partnership (2004). Guidelines for the Selection of Wildlife Sites in South Wales). If at least x8 species are present, the guidelines suggest that a site represents a 'relatively species-rich' habitat.

Page 19: Table 4

Shows x9 indicator species for neutral grassland (based on the above guidelines). If at least x8 species are present, the guidelines suggest that a site represents a 'species-rich' habitat.

Page 20: Table 5

Shows x6 indicator species for neutral grassland (based on the above guidelines). If at least x7 species are present, a site should be considered for selection. Therefore, the site only just drops below this threshold.

The descriptions of the habitat types as above (e.g., 'relatively species-rich', 'species-rich') will be added into the report.

Whilst these three tables provide information regarding indicator species, the report does not include the full species list for the site. [Please could this be provided?](#) Given the information provided above regarding indicator species, this is required so that a judgement can be made regarding whether an NVC level botanical survey might be appropriate for this site.

Page 18: Table 2

States that approximate current area of onsite Unimproved Grasslands is 1.57 ha (15,700m²).

Page 26: 6 Conclusions

All of the grassland is proposed to be lost due to the development and x3 areas of wildflower grassland will be created totalling 9461.59m² in area, so approximately 60% of the grassland habitat will be replaced. This percentage could be improved by including lawned areas within gardens. [A recalculation is required.](#)

2. Detailed Soft Landscaping Proposals (Rev F) – provided to the LPA ecologist in an e-mail dated 01/07/2022

3. Invertebrate Survey Report. Land at Twynyrodyn, Merthyr Tydfil. TerrAqua Ecological Services. July 2022

Document 2 shows several areas of existing grass/scrub habitat to be retained and the Emorsgate seed mixes outlined in the table below are proposed (NB all mixes are currently sold out according to the website).

EM1 (sold out) Basic General Purpose Meadow Mixture	EL1 (sold out) Flowering lawn mixture	EM8 (sold out) Meadow Mixture for Wetlands
Common knapweed, Wild carrot, Oxeye daisy, Ribwort plantain, Selfheal, Meadow buttercup, Tufted vetch, Common bent, Crested dogstail, Red fescue, Smooth-stalked meadow-grass	Betony, Common knapweed, Lady's bedstraw, Rough hawkbit, Birdsfoot trefoil, Ribwort plantain, Cowslip, Meadow buttercup, Pepper saxifrage, Tufted vetch, Black medic, Small leaved white clover, Common bent, Glaucous sedge, Crested dogstail, Red fescue, Smaller cat's-tail	Yarrow, Betony, Common knapweed, Meadowsweet, Lady's bedstraw, Rough hawkbit, Oxeye daisy, Birdsfoot trefoil, Ribwort plantain, Cowslip, Selfheal, Meadow buttercup, Common sorrel, Pepper saxifrage, Devil's bit scabious, Dandelion, Goat's beard, Tufted vetch, Common bent, Sweet vernal-grass, Quaking grass, Crested dogstail, Tufted hair-grass, Red fescue

The x6 species highlighted in **bold** represent those species within the seed mixes that are currently present on site as shown in Tables 3, 4 and 5 (pages 19 and 20 of **Document 1**). Therefore, based on the information provided, only x6 of the species currently present on site are proposed to be compensated for.

Tables 3, 4 and 5 (**Document 1**) contain a total of 21 indicator species present on site. The seed mixes in the table above contain a total of 30 species. On the face of it, this would represent a very small increase in biodiversity, however, obviously this is only based on the indicator species present onsite and not the total number of recorded species. Therefore, the replacement of the existing onsite grassland with the seed mixes is likely to produce an overall reduction in biodiversity. *The list of all recorded onsite species is required.*

This runs contrary to the Environment (Wales) Act 2016 (to maintain and enhance biodiversity).

The avoidance, mitigation and compensation strategy for the onsite grassland habitat needs to be re-thought and amended.

Suggestions – as the largest areas of grassland are to be retained/re-established are to the south and north of the site, larger areas of the existing onsite grassland habitat could be retained. Translocation of turves could be used in other areas. To supplement this, seed collection from the existing grassland habitat could be used. Then to meet any further shortfall, seed mixes that include as many of the species to be lost as possible along with other appropriate/suitable species to enhance biodiversity. These approaches offer an opportunity to develop the site in as sensitive a way as possible in relation to the existing grassland habitat and retain and enhance the biodiversity currently present.

These approaches will also assist, for example, with onsite invertebrate species (as detailed in Document 3) and also the onsite reptile population.

An increase in biodiversity needs to be demonstrated in a quantitative way. One way to do this would be to apply the Biodiversity Net Gain (BNG) approach. *NB this will need to include the data for all current onsite habitat types and not limited to the grassland.*

For example, **Document 2** shows most woodland blocks onsite will be lost, with possibly only W1 and part of W2. How will this loss of habitat be compensated for?

NB **Document 2** includes a number of non-native plant species. *These need to be changed to native equivalents of local provenance.*

Document 3, pages 8-12, Tables 2, 3 and 4

These tables show onsite invertebrate species data for April, May and June. All invertebrates in all tables were at the adult life stage. Taking a sample of the species reported there are some that would be unlikely to be present onsite in their adult form in these months, for example:

Table 2 (April)

- Meadow Brown, *Maniola jurtina* (June to September)
- Common Froghopper, *Philaenus spumarius* (June to September)
- Soldier beetle, *Malthinus flaveolus* (June to August)
- Meadow Grasshopper, *Chorthippus parallelus* (nymphs hatching in April. Adults appear by June).

Table 3 (May)

- Common Field Grasshopper, *Chorthippus brunneus* (nymphs hatching from late March. Adults appear from June)
- Common Green Grasshopper, *Omocestus viridulus* (nymphs can be found from late April or May. Adults appear from July)

- Gatekeeper, *Pyronia tithonus* (July and August)
- Ringlet, *Aphantopus hyperantus* (June to August)

Can this be explained?

The data from 2019 seems very similar to the data from 2022 with mostly the exact same species found for example in the first survey from 2019 and 2022. Of the 57 species found in 2022 only 5 species were not found in 2019 and of the 53 species found in 2019 only one species was not found in 2022. In addition, the exact same four hoverfly species, the exact same three Micro Moth species, the exact same three Spider species and the exact same two Soldier Beetle species were observed in the first survey from both years.

I am not an entomology specialist, so I do not know how likely it is to find this level of similarity on a site 3 years apart. **Is this common?**

The report states that both ecologists have significant experience in undertaking general invertebrate surveys. However, this is such [a specialist field a specialist entomology survey is required to inform this development](#).

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4. Twynyrodyn, Merthyr Tydfil, Bat Activity Survey Report for Persimmon Homes. Terraqua Ecological Services November 2019
 5. Twynyrodyn, Merthyr Tydfil, Bat Activity Survey Report for Persimmon Homes. Terraqua Ecological Services July 2022

Previous comments in relation to **Document 4** discussed the deviation from the guidelines:

'The onsite habitat was assessed as being of Moderate suitability, but there was a deviation in the level of survey effort undertaken. The survey effort undertaken was more akin to a Low suitability assessment. Even if the assessment of the habitat had been one of Low suitability, the survey effort deviated from the guidelines (Low suitability requires one visit per season - Spring, Summer and Autumn). NB no survey visit was undertaken in Autumn. In addition, no automated/static detector survey was undertaken.'

'Please could a detailed rationale for the departure from the guidelines be supplied within the report for consideration?'

The updated bat survey report (**Document 5**) represents a repeat of the survey effort in 2022, so again, no survey visit undertaken in Autumn. Despite, an automated/static bat detector survey this time being carried out, there is still a deviation from the guidelines (particularly as the habitat is of Moderate suitability for commuting and foraging bat species). The new report still does not contain a detailed rationale for the departure from the guidelines. [Please could this be added?](#)

Document 5, Page 8: 4.1 Activity Survey

*'A total of four bat species were recorded over the course of the three surveys, namely common pipistrelle, soprano pipistrelle, noctule and **brown long eared**.'*

The aerial views in Appendix I do not include any references to brown long-eared bat?

The x3 aerial views show many identical bat pass annotations when the three transects are compared. [Please could the timings of the bat passes shown in these aerial views be provided? In addition, please could the data recorded during the transect surveys be supplied? Has any analysis been undertaken on this data? Can this be presented within the report?](#)

Document 5, pages 7 and 8: 3.4 Static Monitoring

States a total of x3 detectors were used over the survey period 'across the site'. *Where were the detectors deployed?* Apologies if I am wrong, but I cannot see any information within body of the report or the Appendices. *Can this be provided?*

In addition, the data from the static detectors shown in Appendix II does not show the dates and seems only to be a sample of data in June from a single detector. No manipulation of the data has been undertaken (or at least presented) within the report. I would expect to see analysis of the data and its presentation in a clear form within the results section instead of simply a sample of the raw data in the Appendix. For example, how many calls for each species were recorded and when, for each species and for each detector? What percentage of the bat call data has been QAd by a bat ecologist? There is insufficient analysis and information. *Additions to the report are therefore required.*

Questions regarding the data analysis. **Document 5** states that 'Wildlife Acoustics Pro Software' was initially used. I assume this is 'Kaleidoscope Pro Analysis Software from Wildlife Acoustics? The data was then also run through the 'BTO Acoustic Pipeline'. *Why was the data run through two pieces of software that essentially do the same job? Also, was there by-catch data for any other onsite species in the results from the BTO Acoustic Pipeline?*

Document 4, page 10: 6 Recommendations

'All hedgerows and tree lines around the perimeter of the site should be retained as far as possible.

The southern boundaries of the site lie in areas away from any significant degree of light spillage and form an almost totally dark corridor during the main period of bat activity. All lighting for the site should be designed to ensure that no light spillage occurs along these boundaries and that the dark corridor is maintained.

Roosting opportunities for bats are very limited within the main body of the site. It recommended that in order to enhance the provision for bats within the site integral bat boxes suitable for bat species recorded during the activity survey are installed within a percentage of the proposed properties. Properties backing onto the eastern and southern boundaries are considered the most suitable for such enhancements.'

As previously referred to, **Document 2** shows woodland habitat retained along the southern boundary, but all woodland lost along both the western and eastern boundaries (only a limited, amount of unconnected scrub habitat will be maintained along the eastern boundary).

This is at odds with the recommendation in **Document 5**. *Woodland habitat along the eastern boundary needs to be maintained and supplemented to provide contiguous woodland habitat in a north-south direction along the entirety of the eastern site boundary. A horizontal and vertical illuminance plan will be required to demonstrate dark corridors along the southern and eastern boundaries (together with dark routes for access to integrated bat boxes on new houses). The dark corridors will need to comply with the following guidelines in terms of lux levels:*

<https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

In addition, proposed onsite lighting will also need to conform to the above guidelines in terms of, for example, appropriate colour temperature and peak wavelength of the luminaires used.

No comments have yet been added to Document 1 regarding fungi as requested in the last set of comments. *Can this be added please?*

6. Reptile Survey Report. Land at Twynyrodyn, Merthyr Tydfil. TerraAqua Ecological Services. May 2022

7. Biodiversity Enhancement Scheme and Reptile Mitigation Strategy. Land off Elm Tree Grove. TerraAqua Ecological Services. July 2022

The reptile survey undertaken at the development site was a presence or likely absence survey and not an accurate population assessment. Therefore as per the advice the Herpetofauna Workers' Manual, HWM (Gent & Gibson 2003), the RMS should assume a good onsite population exists to ensure the level of mitigation is adequate (so, *for both species identified as present a good population must be assumed and stated in the report*).

Document 7 states describes the receptor site as having similar habitats to those present within the development site. It can be assumed, therefore, there is likely to be a pre-existing population of reptiles within the receptor area.

The HWM states that where *small* numbers of animals are being moved it *can* be acceptable to add these to existing adjoining populations as the impact will be negligible. The HWM goes on to say that *'For reptiles a small number is less than ten animals'...* and ... *'Where larger numbers of [amphibians and] reptiles are involved, the receptor site should be free from the species to be translocated'*.

Document 6 estimates a very rough development site population estimate of 50-100 slow worms and 5-10 common lizards. Therefore, even at the lower end of the estimated range, 55 animals would be introduced into the receptor site. Translocating this amount of animals may therefore have negative impacts. However, it is possible that following an improvement of the habitat within the proposed receptor site some extra capacity could be provided.

It is noted that, as stated in **Document 7**, prior to the trapping exercise, reptile refugia and hibernacula will be created at the receptor site. Further measures to create more open grassland areas by removing trees or scrub at the edges of the surrounding woodland will also be required as well as some management of the sward to create a diverse vegetation structure.

If this is all undertaken prior to the trapping and translocation of reptiles, this will improve the carrying capacity of the receptor site to allow the introduction of 50 slow worms and 5 common lizards, i.e., at the lower end of the estimated range.

There will need to be a contingency plan in place if the numbers of animals trapped rise above these levels. Under these circumstances a supplementary receptor site will be required. Details are needed, to be agreed ideally before planning determination, but at least prior to the commencement of works.

Please could amendments to the Reptile Mitigation Strategy be made to reflect the comments above?

Other comments and information required

Document 7, page 6: 2.4 Proposed works

'On completion of the development some areas within domestic gardens and within areas of soft landscaping are likely to be suitable for use by reptiles once these have matured.'

It is feasible that reptiles may be able to recolonise habitat at the south of the development site (existing grassland retained around the southernmost attenuation pond and meadow habitat created around the northernmost attenuation pond). However, it is less clear if they

would be able to reach the gardens of the properties as these will be separated by roads and boundary features. *Can the wording be changed please?*

Who owns the land to the south of the site? Has permission been sought regarding the translocation of animals and the improvements to the habitat, any future management etc?

Document 7: pages 13-17, 4 Ecological Enhancements

Most of the measures described here are actually compensation for habitats that will be lost as a result of the proposed development. They are therefore not enhancements. See the list below:

- New Wildflower Grasslands
- Native Hedgerow Planting
- Native Tree Planting

The addition of the attenuation ponds would be better put forward as a potential enhancement for the site. These ponds could offer an increase in native biodiversity by creating them with a dual purpose: as attenuation ponds, but also as wildlife ponds, with an appropriate wetland planting scheme. In addition, perhaps the improvement of the habitat on the site to the south (proposed as a reptile receptor site) could be described as an offsite enhancement measure. *Amendments are required here.*

Document 7: page 16, 4.4 Bat Boxes

This measure is acceptable, bearing in mind the comments made earlier in this document regarding the lighting plan:

'A horizontal and vertical illuminance plan will be required to demonstrate dark corridors along the southern and eastern boundaries (together with dark routes for access to integrated bat boxes on new houses. They also should not be directly illuminated). The dark corridors will need to comply with the following guidelines in terms of lux levels:

<https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

More detail required regarding the position/height of the boxes. Details will need to be added into the elevation drawings for the new houses.

Document 7: page 17, 4.5 Bird Boxes

All bird boxes will be of an integral design with specifications included, for example:

- Bird Box 26mm Hole Plots 67 & 121 (<https://www.birdbrickhouses.co.uk/brick-nesting-boxes/integrated-bird-box/>, hole size 28mm)
- Bird Box 32mm Hole Plots 20 & 38 (<https://www.birdbrickhouses.co.uk/brick-nesting-boxes/integrated-bird-box/>, hole size 34mm)
- Bird Box Open Fronted Plots 21, 56 & 114 (<https://www.nhbs.com/search?q=bird%20box&hPP=60&idx=titles&p=0&fr%5Bdocs%5D%5B0%5D=false&fr%5Bhide%5D%5B0%5D=false&fr%5Blive%5D%5B0%5D=true&qview=200428> (or equivalent))
- Sparrow Terrace Plots 66 & 112 (e.g., <https://www.birdbrickhouses.co.uk/brick-nesting-boxes/nesting-boxes/> - sparrow terrace box, or equivalent)
- Swift Box Plots 2, 55, & 40 (e.g., <https://www.birdbrickhouses.co.uk/brick-nesting-boxes/nesting-boxes/> - swift box, or equivalent)

More detail required regarding the position/height of the boxes. NB the orientation of some of the boxes require amendment so that boxes will either be installed on a north and east elevation, to avoiding strong sunlight and the wettest winds (unless it is shaded by trees or buildings). They should also be close to and where possible oriented towards suitable habitat. Details will need to be added into the elevation drawings for the new houses. There will be no direct illumination of bird boxes (this needs to also be demonstrated within the lighting plan).

Could these amendments be made please?