

INTERNAL MEMORANDUM

To: Caroline Pulley
From: Matt Davies (Ecologist)
Ext: 5278
Memo number: 3
Date of Memo #2: 06/09/2021
Date: 19/10/2021

SUBJECT: P/21/0170 | Demolition of Industrial Buildings and Erection of 14 Dwellings and 6 Apartments (Outline) | Bryntaf Garage 105 Bryntaf Aberfan Merthyr Tydfil CF48 4PJ

Amended reports submitted in support of the above application:

1. Preliminary Ecological Appraisal. Bryntaf Garage. Sylvan Ecology (for JT Planning). Document number J M050- PEA Report-V1.1. Issue date 15/10/21.
2. Protected Species Report. Bryntaf Garage. Sylvan Ecology (for JT Planning). Document number M050- Eco Report-V1.1. Issue date 15/10/21.

NB both reports provided by David Price (Sylvan Ecology Ltd) in an e-mail dated 15/10/21.

Comments:

Document #1

Enhancements are now marked on the indicative plans within the ecological reports. All relevant final plans/drawings for the scheme will need to be marked up with the enhancement measures when full planning is applied for.

Document #2: Bats

A lighting schematic has been added to the report. This does not represent the horizontal and vertical illuminance plans that were requested:

'A lighting plan is required to assess the impacts of proposed external and internal onsite lighting. Horizontal and vertical illuminance plans will be provided. The analysis will need to demonstrate dark flight lines for commuting and foraging bats as well as dark routes to and from the integrated bat boxes.*

**given the number of windows within the design, light spill is likely to be substantial and mitigation will be required.'*

NB in addition, the lighting plan needs to consider any lightspill from nearby street lights or residential security lighting and how this light may impact on the proposed integral bat boxes and any onsite bats.

The lighting plan must provide the specifications for the luminaires proposed to be used.

Also, there are a number of roof lights in the design that would create upward lightspill. This issue has not been addressed.

Obviously, production of the lighting plan is not the responsibility of the ecologist, but something for the applicant to organise.

The following guidelines need to be cited within the report:

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

The report states the following (page 13):

2.25 Dark areas will be retained around the northern, western, and southern boundary, to ensure there is no break in the existing habitat of suitable foraging areas. No uplighters i.e. up lighting trees, buildings and vegetation will be incorporated.

As mentioned above this does not consider the impact of the roof lights within the current design).

2.26 The surveys found that activity on site was restricted to low numbers of Pipistrellus spp commuting and foraging along the woodland edge above the quarry face. Stone 2012 found light-emitting diode lights had no significant effect on P. pipistrellus, P. pygmaeus and Nyctalus/Eptesicus spp.5. Stone, 20134 also states that lighting has a low impact on the commuting and foraging activities of these species.

Pipistrelle species were detected during the survey, commuting and foraging along the woodland edge, however, this does rule out the presence of other species. As an example, surveyors at ground level may not have picked up quieter brown long-eared bats. Additionally, the local records show other nearby species (e.g., Daubenton's bat, Natterer's bat, Whiskered bat).

Whilst pipistrelle bats are known to feed on insects attracted to light, other bat species (including those species returned in the records) generally avoid all lights (Stone et al 2009¹, 2012², 2015a³). This puts these 'light intolerant' species at a competitive disadvantage.

Additionally, insects are thought to be attracted to lit areas, resulting in fewer insects being present in surrounding darker areas (a 'vacuum effect') which impacts bat populations further afield. This is an extra impact on the ability of light intolerant bat species in the area to feed.

The impacts of the proposed lighting therefore needs to be considered beyond the limits of those species detected during the surveys.

¹ Stone, E.L., Jones, G., Harris, S. (2009). Street lighting disturbs commuting bats. *Curr. Biol.* 19, 1123–1127

² Stone, E.L., Jones, G., Harris, S. (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. *Glob. Change Biol.* 18, 2458–2465.

³ Stone, E.L., Harris, S., Jones, G. (2015a). Impacts of artificial lighting on bats: A review of challenges and solutions. *Mammal. Biol.* 80, 213–219.

Other research (Mathews et al, 2015⁴) has compared the activity of common species of bat in lit areas with dark areas. Activity of three species (noctule, serotine and soprano pipistrelle) in lit areas was found to be either similar to, or lower than bat activity in dark areas. An increase in activity for common pipistrelle was seen, but only at locations that offered a high degree of shelter, e.g., from hedgerows or trees.

So, artificial light at night (ALAN) has an impact on all bat species including common pipistrelle.

This is the reason for the request regarding a lighting plan with illuminance diagrams, so that the impacts can be properly assessed.

Other issues

There are opportunities for enhancement of the site in terms of landscaping. A Landscape Management Plan (**still required**) would be required to demonstrate this. Native species of local provenance will be used and the plan should cover at least 5 years post-construction.

NB appropriate planting may mitigate some of the detrimental effects of ALAN on the site, including offsite light sources (e.g., nearby street lighting and residential security lighting).

The following is proposed:

‘Hawthorn hedging or similar to foot of the cliff to absorb potential falling debris from the cliff edge above and keep residents away.’ See Drawing Number A100, dated 2020-04-10.

This seems insufficient in my view, with no details regarding the width of the hedging and with the hedging seemingly within the gardens of each property, separated by fencing of each garden. This would leave residents free to remove the hedging if they so wished. A wider buffer would be better here, fenced off from the gardens and with a wider range of native species (of local provenance).

In addition, the shading created by the cliff-face will have a bearing on the species used in these areas.

⁴ Mathews, F., Roche, N., Aughney, T., Jones, N., Day, J., Baker, J., Langton, S. Barriers and benefits: implications of artificial night-lighting for the distribution of common bats in Britain and Ireland. Philosophical Transactions of the Royal Society B, March 2015