22_02066_FUL-RESPONSE_TO_OBJECTIONS_FROM_VARIOUS_PARTIES-6038871

22_02066_FUL-RESPONSE_TO_LPA_ECOLOGY_COMMENTS-6034273

22_02066_FUL-MKA_OWLSTONE_LIGHTING_RESPONSE_FOR_CCC-6039363

GM Comments 30/09/2022 rev1

1) This report has been prepared to make some key comments on the following planning submissions in relation to ecology:

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2) Taking each document in turn, and responding to selected points considered most pertinent to ecology:

   22_02066_FUL-RESPONSE_TO_OBJECTIONS_FROM_VARIOUS_PARTIES-6038871
   (Turley, 9th September 2022)

3) Section 2. Points of clarification.

   The appropriate lighting level at the boundary was agreed as 0.5lux by the Council's Ecologist during the pre-application discussions.

   It is important to note that this was agreed prior to bat data being provided demonstrating the importance of the LNR / site boundary for the rare bat species barbastelle. The Ecology Officer presumably has the right to reconsider pre-application advice following the provision of key additional information. In Bioscan's view, the discovery of the importance of the site for the rare (and light sensitive) bat species barbastelle makes it more appropriate to follow the guidance provided by Bat and Artificial Lighting in the UK (Bat Conservation Trust, 2018), which state: 'Where 'complete darkness' on a feature or buffer is required, it may be appropriate to consider this to be where illuminance is **below 0.2 lux on the horizontal plane** and **below 0.4 lux on the vertical plane**.'

   The discovery of regular use of the LNR / site boundary by the rare bat species barbastelle underlines the importance of ecology for this site as a key consideration in whether or not to grant planning permission.

4) Section 3.3. Impacts on the PNR.

   • *The edge of the PNR has been highlighted as a potential corridor for bat activity and commuting. The current maximum lux level along this edge is 7.28lux (Point 19). The modelling undertaken by Hoare Lea shows that post-construction the maximum lux level along this edge will reduce to 2.98lux (Point 18). In this area close to the existing nursery building the illuminance levels will significantly decrease. Consequently, the maximum lux level along this potential corridor for bat activity and commuting will also significantly decrease.*

The key points to make here are:

- The current floodlights along the site boundary are understood from Friends of Paradise LNR to be almost always turned off. Friends of Paradise LNR raised the point about harm to wildlife from new security floodlighting in this area in 2019 and the Bursar agreed there was no need for it and it could be switched off. Members of Friends of Paradise LNR walk the boundary regularly, and have noted that the floodlighting has almost always been turned off since then. **As such the floodlights being switched off should be taken as the baseline situation.**
- The floodlights along this boundary are not considered appropriate for use in the context of the regular activity recorded from the rare bat species barbastelle along this boundary.
- The floodlighting was turned on when the lighting assessment was carried out. This is not considered to be an accurate assessment of the baseline situation, and in our view **the lighting assessment should be repeated with the floodlighting excluded from the calculations.**
- In other words it is thought unacceptable to consider 7.28 lux to be the baseline situation, and use this to argue that the development will constitute an improvement in the lighting situation. **The key point is that the development will give a maximum post-development lighting impact of 2.98 lux (vertical) at point 18, which exceeds the BCT recommended cut-off of 0.4 lux (vertical) by a factor of 7.4 times.**

• For the remaining sections along this potential corridor for bat activity and commuting there are two locations where the lux levels will be above the 0.4 threshold, which is accepted as 'complete darkness'. Point 12, where illuminance levels are anticipated to increase from 0.23lux to 0.47lux and Point 21, where illuminance levels are anticipated to increase from 0.14lux to 0.45lux. Whilst these lux levels are above 'complete darkness' (0.4lux) they remain below the accepted 'very low light levels' (0.5lux). Furthermore, the modelling undertaken by Hoare Lea demonstrates that illuminance levels are predicted above 0.4lux at very few locations on a vertical measuring plane 10m from the proposed building at the edge of Paradise LNR. On this vertical measuring plane only 3.5% of 1,800 sample points fall above 'complete darkness' but still 4 below 'very low light levels'. This only represents a very minor level of illuminance above the 'complete darkness' threshold.

Nonetheless, in the context of regular use by a rare and light sensitive bat species, it is considered that the BCT Guidance should not be deviated from at all. The key point remains Point 18, where the development lighting will be 2.98 lux (vertical), 7.4 times higher than the BCT recommended cut-off of 0.4 lux. Having one area where light levels are significantly too high could constitute a permanent impact on bat activity and have the potential to sever bat commuting along the LNR boundary / woodland edge. The current design is not considered appropriate in this regard.

• The data gathered on site during the activity surveys demonstrates that light-sensitive bats are using the edge irrespective of current lux levels which are above the thresholds for 'complete darkness' and 'very low light levels'. Barbastelle have been recorded in the locations close to nursery where there are currently illuminance levels (7.28lux) well above these thresholds (see summary of data from July and August 2022 below).

Please note the point above that the floodlighting is almost always turned off, and does not constitute the baseline situation for bat activity.

Based on observations from Friends of Paradise LNR the floodlighting is not considered to have been turned on at the times the remote bat data was collected (and certainly not for the full duration of the monitoring periods.) On this basis it is considered misleading to cite barbastelle records from the monitoring periods close to the floodlights.

The data which has been provided is not assessed to constitute evidence that the floodlighting does not impact bats on the rare occasions when it is turned on.

In consideration of these points, we would like to emphasise that maximum illuminance levels close to the nursery along the potential corridor for bat activity and commuting are predicted to decrease, and remaining areas will show very minor levels of illuminance above the 'complete darkness' threshold. We would also like to emphasise that it is important to focus on the evidence provided in the data, as opposed to an absolute reliance on guidance. These data show that light-sensitive species such as barbastelle are already using areas of illuminance well above 'complete darkness' and 'very low light levels' in this location. These three factors suggest that there will not be a significant change in the levels of bat activity or species composition along this edge of PNR. It can also be anticipated that by maintaining these low light levels (a lux level of 0.4 is lower than what might be expected on a moonlit night) impacts on other nocturnal or light sensitive species can be minimised.

Given the problems pointed out above, it is not considered that this argument should be afforded any significant weight.

5) Section 3.4. July and August bat data.

Importantly, the data also shows that in August the highest levels of bat activity for each of these light sensitive species were recorded in the well-lit area adjacent to the Nursery Building, Static Location 3

Again it is noted from observations of Friends of Paradise LNR that the floodlighting is not considered to have been turned on during the monitoring periods (and certainly not for the entirety of the monitoring periods), meaning the dataset contains 'dark' nights with no floodlighting, and must be considered in this context.

These data only act to further confirm the significance of the LNR / site boundary for light sensitive bat species, including the rare species barbastelle.

While we have yet to see the full dataset, given the clear importance of the LNR / site boundary for the rare species barbastelle we feel it is essential for the full suite of surveys to be carried out, so that any decisions can be informed by an appropriate level of information. For a site with high suitability bat habitat (as stated by the Ecology Officer comments on 18th July 2022), the survey requirement is:

- (Transect / spot count / timed search surveys) Up to two survey visits per month (April to October) in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24 hour period.

- (Automated / static bat detector surveys) Three locations per transect, data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats.

Currently we have only seen data from May, July and August (and only in August has the coverage been complete, with three static detector locations per transect). Data from missing months should be provided, in particular as we currently have zero information on levels of barbastelle activity in the early spring, and in the autumn, which is insufficient data to enable the County Ecologist to make an informed decision.

Lastly, whilst considered less critical than the LNR boundary, the line of large lime tree on the eastern boundary of the application site (see photo below) is also likely to be a conduit for bat activity (potentially including the rare species barbastelle), and so should also be included in the bat survey data coverage. This is important because the modelled light spill on this line of trees at location 3 in the lighting report is 13.64 lux horizontal and 2.75 lux vertical (far in excess of the Bat Conservation Trust guidelines for 'complete darkness' of 0.2 lux horizontal and 0.4 lux vertical). If there is barbastelle bat activity along this line of trees then they could also be impacted by significant light spill at this location.

6) Section 4. Loss of Trees.

The proposal involves the loss of five category C trees in total (G002 – three poplars and T008 and T009 – 2 ash). We are proposing to plant 55 new trees which is a significant increase of tree cover on the site. The strategy for tree removal has been discussed, plans modified and ultimately agreed with the Tree Officer through the several pre-application meetings. The proposals are in line with Local Plan Policy 71 in that trees of value are being retained and more than adequate replacements provided for the few 'C' category trees to be removed.

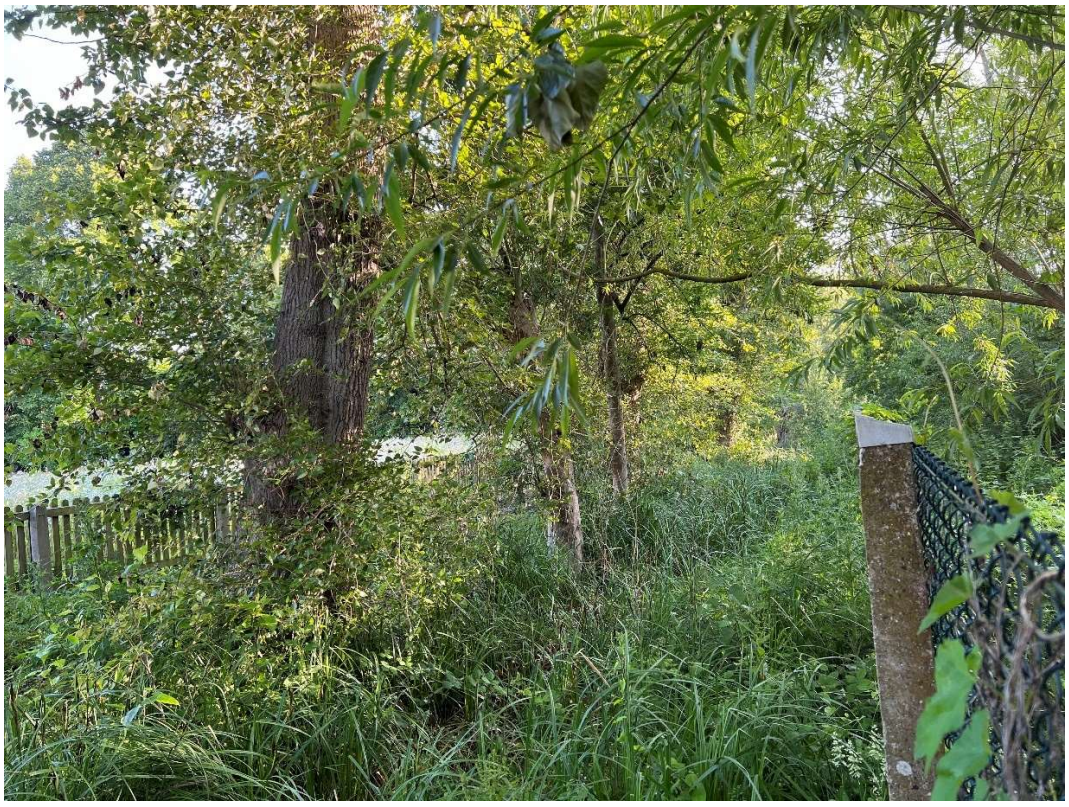
These trees require removal as part of the proposed scheme as specified elsewhere in this response. The landscape scheme specifies that this area will comprise the drainage feature, as well as areas of damp meadow. These are habitats of significant value in their own right and will support a wide variety of species. These habitats will also compliment the wet habitats of PNR and the wider River Cam Corridor. Additional tree planting has been proposed along this edge which will mature over time to further enhance this edge.

Some objectors quote a comment from the Council's Tree Officer at pre-application stage. Having overcome her concerns, the officer now has no objections to the proposals. The officer's comments on the application support the limited removal of trees and the increased planting on the boundary with the nature reserve.

There is also a suggestion that the removal of this small number of trees will have an adverse impact on the ecological value of the PNR and site. In the context of the number of trees in the area, that is 10 considered to be an exaggeration, and in the longer term, planting 55 additional trees will be a benefit to the area and its ecological value.

The key point here is that Turley have not considered the trees in the context of their providing a habitat along which bat activity has been noted.

As Bioscan have pointed out in previous reports, the tree line is assessed to be ecologically continuous with the nature reserve in terms of usage by bats (see photos below). As such, **the removal of these trees would be expected to have an impact on bat activity (including on the rare bat species barbastelle)**, and must be considered in this context.



Seasonally wet ditch and line of poplar trees within application site (between wooden and mesh fences).

Linkage of above habitats within application site to the edge of Paradise Local Nature Reserve (divided by mesh fence).

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(Dominic Meyrick, Lighting Consultant)

7) Many of these points duplicate those made above and our response to them is the same, but the following points are highlighted:

8) *DDM – It is worth recognising that existing lighting along the LNR boundary and the current site exceed the BCT guidance at a number of locations. Therefore, this development constitutes a betterment for these locations, bring lighting levels down from some of the current, higher than recommended, lighting levels.*

   For the reasons given above concerning the floodlighting being turned off almost all the time, this statement is considered to be incorrect.

   The key point is that at Point 18 the proposed development lighting will be 2.98 lux (vertical), 7.4 times higher than the BCT recommended cut-off of 0.4 lux, which is assessed as likely to be a significant impact on bat activity, including that of the rare species barbastelle.

9) Numbers higher than 0.4lux made up only 2% of the total number of calculations points of 1,800 (a diagram of this can be provided). Therefore, the modelling demonstrates that vertical lighting levels less than 0.4lux are the norm.

   Having even one area (e.g. Point 18) where light levels are significantly too high could constitute a permanent impact on bat activity and have the potential to sever bat commuting along the LNR boundary / woodland edge.

10) Secondly, with regard concerns over any localised light to the 'proposed outdoor seating area', at present no permanent lighting to this area closest to the LNR boundary is proposed. However, if any is proposed at the detailed design stage, as the diagram below indicates, it will be possible to keep such lighting 'local' to the seating area and therefore any light spill away from the LNR boundary. This will be confirmed at the detailed design stage.

   Given how close the seating area is to the LNR boundary, it is considered unlikely that any effective lighting here could result in less than 0.4 lux along the LNR boundary. In addition, a seating area at this location could encourage people to bring along their own light sources (a potential impact which cannot be controlled).

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(Will O'Conner, MKA Ecology)

11) *We can confirm that we are currently undertaking one monthly walked transect combined with static bat detector surveys along the edge of the woodland. This differs from the approach for 'high' suitability locations as there is only one monthly walked transect rather than two. However, we are gathering more data from the static bat detectors as we feel this is more useful in this instance. Few of the light sensitive species' passes have been recorded during the walked transects in comparison to the static surveys. We believe this is a proportionate and effective level of survey effort.*

    This comment is made in response to the County Ecologist's recommendation that survey information should satisfy the BCT Guidelines for sites with 'high' suitability for bats (an assessment which Bioscan supports).

    The requirements for a site with 'high' suitability are:

    -(Transect / spot count / timed search surveys) Up to two survey visits per month (April to October) in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24 hour period.
    -(Automated / static bat detector surveys) Three locations per transect, data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats.

    The remote data provided thus far is from two remote bat detectors in May and in July (not meeting the guidelines for sites with 'high' suitability for bats), and from three remote bat detectors in August. It is assessed that the lack of a third static bat detector in May and July is likely to be a more significant deviation from the guidelines than only a single transect being walked.

    But crucially, there is no data yet provided for the months of April, June, August, September or October. Data from these months will be necessary for the County Ecologist to be able to make an informed assessment. In particular it is noted that there is not yet any data representing the **early spring** or **autumn** periods.

12) The remaining comments made within this report are included in the Turley submission, and have been covered in detail above.

    Geoff Moxon
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