

Supporting Information relating to Condition 20

We have reviewed the Environmental report and whilst the report states there is negligible potential for roosting bats we have made the following changes requested in the recommendations:

1. Lower the fittings to 4m columns - It is common to use lower height columns in residential areas, which I believe this to be. This means the spill light to surrounding properties is less (not completely eliminated but considerably less than when it was at 6m). However, this does have a negative impact to the light levels and uniformity received in the carpark.
2. Remove the tilts from all fittings. This also has an impact on the light levels and uniformity.

We are currently achieving 17lx with 0.18 uO over the entire carpark area. The parking bays are achieving between 22-32lx with between 0.12 - 0.34uO, the worst being the long parking area to the rear of the site. However, we are only achieving 3lx in the driving route. This is due to having to reduce the column height and remove the tilts. We have tried using different optics (narrower, more forward through) to achieve better illumination on the driving route but this requires significantly more fittings.

I have also supplied the Compliance Report Summary again as a separate document but have reduced this to Environmental Zone E2 as I think E4 is probably being too generous until the client can confirm this please.

The recommendation in the environmental report are as follows (TRILUX notes in red):

*A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures:*

- *Use Narrow spectrum light sources to lower the range of species affect by lighting.*

*TRILUX: We are using 3000K (warm white)*

- *Use light sources that emit minimal ultra-violet light*

*TRILUX: We are using high quality LED technology. There is no UV light emitted from these fittings.*

- *Avoid white and blue wavelengths on the light spectrum to reduce the insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm/neutral temperature <4,200 kelvin*

*TRILUX: Please see above, we are using 3000K (warm white).*

- *Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal.*

TRILUX: There are no bare bulbs in the proposed scheme. All fittings are 0% Upward Light Distribution. All tilts are shown on the drawing and have been set to 0 degrees. This does have an impact on the light levels and uniformity of the scheme.

- *Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvres and shields. Lights will also be directed to the intended area only.*

TRILUX: Spill light to surround properties has been reduced by lowering the columns from 6m to 4m. This also has a knock-on effect to the light levels and uniformity achieved in the carpark.

- *External lighting will be in PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on.*

TRILUX: We would suggest some form of lighting control system to be included but this is to be supplied by others.

- *Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.*
- TRILUX: We would suggest some form of lighting control system to be included but this is to be supplied by others.

We have added the below note to the attached drawing which should cover the above:

THE FOLLOWING RECOMMENDATIONS FROM THE ENVIRONMENTAL REPORT HAVE BEEN CONSIDERED IN RELATION TO THE EXISTENCE OF BATS:

- ALL LUMINAIRE SUPPLIED IN 3000k
- ALL MOUNTING HEIGHTS AND TILTS HAVE BEEN INCLUDED ON DRAWINGS AND HAVE BEEN KEPT BELOW 0DEG.
- IT IS ASSUMED THAT POST CURFEW ALL LIGHTING WILL BE EITHER TURNED OFF (VIA TIMECLOCK SUPPLIED BY OTHERS) OR REDUCED TO 50%.