

Dear Graham

Thank you for your e-mail.

We have had the tricky problem of bats on previous occasions and found that it is very difficult to satisfy both the requirements of the design specification and compliance with the limitations and guidelines when illuminating an area which reduces the impact on the surrounding environment. As the guidelines/requirements for lighting environments containing bats are being continually discussed and assessed, we previously contacted an expert for his input (Chris Toohie of Wold Ecology Ltd). It seems LED should be considered as LED produces little or zero UV albeit other considerations regarding usage, levels, positioning etc must be considered. Please see an extract from his e-mail...

Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds.

The principles are:

- Reduce or remove the UV component of light emitted. To achieve this, a lamp that does not emit UV or a filtration product is recommended
- External lighting requirements will be carefully designed to avoid light spillage affecting foraging bats and bat box entrances. Thus creating a dark and green infrastructure and can be achieved by using hoods, cowls, shields and louvers. Planting or manmade barriers can also protect against light spillage.
- Security lighting will be on a short timer and motion sensitive to large objects only.
- Use of timers to reduce the hours lit and tailors this specifically to wildlife affected.
- Lights will not be mounted where they will shine directly on to the surrounding habitat used by foraging bats.

We can confirm that we have designed the area to our best intention – in accordance with the requirements of the ecological report. We have done this whilst complying to the lighting design specification and using the guidelines mentioned above. We have:

- Used very low output LED Lighting Technology (2426 lumens)
- Proposed a low mounting height of 5m – whilst considering the commercial aspect and the lighting design specification (lower columns = reduced uniformity, hence more lighting points/columns required)
- Used a Lighting product that is Zone 1 rated which produces zero upward light component
- Used a lighting product which complies with the design specification which is decorative, robust (in terms of vandal resistant IK09) and has excellent light control in terms of spillage.
- Supplied a lighting plan showing maintained illumination levels at floor level
- Supplied a 3 dimensional plan indicating maintained vertical illumination levels achieved along the south boundary – **up to 8m high**. The plots clearly indicate that the majority of the boundary will have 0 lux being achieved
- Considered positioning of the columns/light fixtures – ensuring they are away from the adjacent trees and boundaries as far as possible – whilst complying with the minimum illumination level requirement

The final consideration is operational hours which should be discussed with the relevant parties and local authority.

Please note that we have amended a column position from our original design – to aid in achieving the above. Fixture/Column quantities remain unchanged.

Attached includes the AutoCAD drawing, PDF elevation, PDF plan, confirmation quotation & product information.

We hope this meets with your requirements. Should you have any queries, please do not hesitate to contact ourselves.



