

Wrexham Technology Park Access Road, Wrexham.

Proposed Lighting Scheme

The Lighting scheme has been designed in accordance with the following documents to achieve the maximum Health and Safety benefits for the road user but also minimising the impact on the ecology and environment:-

- Standards and Advice Notes contained in the Design Manual for Roads and Bridges published by HM Stationery Office.
- Highway Construction Details, published by the Stationery Office as Volume 3 of the Model Contract Document for Highway Works and as modified and amended by the Employer's Drawings and other Standard Details.
- The Works Information (Volume 3)
- Interim Advice Notes issued by the Highways Agency and the Welsh Government.
- Road Circulars and other documents, published by the Stationery Office.
- Relevant British Standards. (BS5489-1:2013)
- Relevant EC and UK legislation

In detailing this design it was specified that LED lanterns would be used, in accordance with the Council's current policy to maximise energy savings on any new Highway lighting installations. Low pressure sodium lighting is not acceptable.

The lighting has been designed to the requirements of BS5489-1:2013 and as such is will provide lighting that is suitable for the application taking into account traffic flow and usage.

LED street lighting lanterns produce less spill than HID lanterns and as such will reduce light spill to a minimum. The lanterns used will be installed with zero tilt and will not produce any direct upward light. The LED lanterns used do not produce any UV light.

The brightness of lamps will be as low as legally possible considering the above health and safety requirements, light will be directed only to where it is needed to avoid light spillage into surrounding areas.

The height of lighting columns will be the absolute minimum required in that location, (8.0m high) with light directed at the lowest height level possible to reduce the ecological impact.

The lantern mounting height is as low as possible to allow the correct amount of light to be provided onto the surface of the carriageway, footway and cycleway. Lantern optics are designed to allow large spacing between columns to reduce the number of lanterns required to a minimum. It is therefore likely to be difficult to achieve using less columns without compromising the road lighting.

A corridor(s) of permanent darkness will be maintained across the site to ensure that foraging and commuting habitats do not become fragmented or isolated. This can be achieved through

(a) ensuring no lighting and no light spill occurs between the roundabout of the new access road and the A483 underpass and

(b) ensuring a dark break across the access road in which no lighting occurs or in which lighting is switched off during the stipulated times during the night, the break will stretch across the road between T3 and W1 (Appendix A) and will create a dark corridor width of at least 5m.

In order to achieve these dark area's in proximity to retained or newly planted linear features and to maintain the currently dark area's to the North of the attenuation lagoon and to the North of the New roundabout it is proposed to limit the times during which lighting will be used. We propose to link the darkness between these two area's between the hours of Midnight and 5.0am so as to provide this dark corridor across the road. This is best achieved by switching off the lanterns on Columns No 4 and 5 and dimming the lighting on Columns No 3 and 6 by 50% during the same time period.

To the west of the roundabout a dark corridor will still exist between the roundabout and A483