



Williams Lighting Consultants Ltd.

February 2020

Lighting Mitigation Report

Prepared for: Abbey M&E

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1. Introduction

- 1.1 This Lighting Mitigation Report has been prepared by Williams Lighting Consultants Ltd. for and on behalf of Abbey M&E. The report assesses the proposed lighting and methods used to reduce its impact on the surrounding area.

2. Proposed Lighting

2.1 Lighting Columns and Lanterns

- 2.1.1 Lighting columns with lanterns mounted at 5m in height are proposed to reduce light pollution and light spill onto surrounding areas. Due to the nature of the site and its users, it was considered appropriate to provide low level lighting at a lighting class of P5 with an SP ratio of 1.3 applied for a warm white light source.

2.2 Luminaire Review

- 2.2.1 The following section reviews the ILP Guidance Note 08/18 Bats and artificial lighting in the UK recommendations for appropriate luminaire specification.

Recommendation 1: All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.

Proposal: All proposed lighting utilizes LED light sources and avoids light sources with high UV content.

Recommendation 2: LED Luminaires should be used where possible due to their sharp cut off, lower intensity, good colour rendition and dimming capability.

Proposal: LED luminaires have been specified. Careful consideration has been given to the selection from the available luminaires.

Recommendation 3: Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).

Proposal: All light sources proposed have a colour temperature of 3000K avoiding the green / blue end of the spectrum.

Recommendation 4: Heights should be carefully considered to minimize light spill.

Proposal: Maximum proposed mounting height is 5m. Light spill has further been reduced through the careful selection of the most efficient optics for the site. Avoiding light spill on sensitive areas and surrounding properties.

Recommendation 5: Luminaires should always be mounted on the horizontal, ie no upward tilt.

Proposal: All proposed units are set at the horizontal (0 degree tilt) and the luminaires provide 0% upward light.

2.3 Proposed Lighting Levels (refer to Lighting Calculation Report and drawing WLC322-1300-001)

2.3.1 Lux levels for both horizontal and vertical planes have been provided to show minimal impact on site perimeters, vegetation and badger areas.

2.3.2 The ILP Guidance Note makes the following statement:

N.B. It is acknowledged that, especially for vertical calculation planes, very low levels of light (<0.5 lux) may occur even at considerable distances from the source if there is little intervening attenuation. It is therefore very difficult to demonstrate 'complete darkness' or a 'complete absence of illumination' on vertical planes where some form of lighting is proposed on site despite efforts to reduce them as far as possible and where horizontal plane illuminance levels are zero. Consequently, 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. These figures are still lower than what may be expected on a moonlit night and are in line with research findings for the illuminance found at hedgerows used by lesser horseshoe bats, a species well known for its light averse behaviour (Stone, 2012).

Comments: The 0.2 lux contour line has been shown on drawing WLC322-1300-001.

3. Limitations

3.1 Lighting Levels

3.1.1 The blocking effect of buildings has not fully been considered. If considered the blocking effect would be advantageous as it provides shaded areas.