



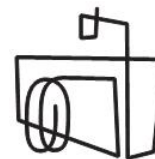
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Date	Author	Revision	Details
23/04/18	PJH	R0	Issued for comment
24/04/18	PJH	R1	Impact section added & summary amended
30/04/18	PJH	R2	Ecology added: final



Harrison Lighting Limited

Land South of Newark Road, Sutton-in-Ashfield, Ref. SKA3e

Commentary on Lighting Strategy and Mitigation Report, submitted by DPA Lighting Consultants.

PURPOSE OF THE REPORT

Sutton-in-Ashfield District Council are considering a planning application for the construction of residential properties on land south of Newark Road, Sutton-in-Ashfield; ref. SKA3e. The realisation of this development and the installation of public lighting is likely to impact on existing properties at Searby Road. In addition, there is a possible impact on Sherwood Observatory, located on B6139 Coxmoor Road.

To understand the possible lighting impacts this development could have, DPA Lighting Consultants have prepared a lighting strategy and mitigation report on behalf of the developers. The submitted report "Land South of Newark Road, Sutton-in-Ashfield - Lighting Strategy and Mitigation Report for the Proposed Development", dated 22nd September 2017. Harrison Lighting Limited have been commissioned by Sutton-in-Ashfield District Council to review and comment on the DPA report.

Details of the author of this report is contained in Appendix 1.

SUMMARY

The following is a summary of comments:

- The report suggests an E2 Environmental zone with E1 requirements at the south and south eastern site boundaries. Whereas this would be acceptable, as an alternative the whole site could be designated as E2 with any areas in line of site of Sherwood Observatory designated E1. In addition, it is recommended that all public lighting used on the development have a 0% Upward Light Output Ratio; in other words, it is classified as being full cut-off with no light emanating at or above the horizontal.
- Sutton-in-Ashfield Council work with the Highway Authority to agree the lighting specification. In particular:
 - Public lighting luminaires be installed flat, with no uplift
 - Consideration be given to using 3,000⁰K LED lighting as this is likely to reduce the impact on Sherwood Observatory.

- All public lighting luminaires are supplied with facilities for manufacturer supplied shields to be fitted to any combination of front, back or side of each LED luminaire array.
- The ecology report accompanying the planning application for this development indicated that two trees and/or hedgerows had a high potential for roosting and foraging bats. Should any public lighting planned for this development be within 30m of the trees and hedgerows mentioned in the ecology report, then consultation must take place between the lighting designer and a suitably qualified and experienced ecologist to agree mitigation measures.
- Sutton-in-Ashfield Council may wish to consider a covenant be placed on all properties restricting any external lighting to 2,000 lumens and for such lighting be installed and maintained such that light emitted at or above the horizontal is minimised.
- Acceptance of the DPA Lighting Strategy and Mitigation Report with recommendations contained in this commentary will minimise the impact of public lighting on adjacent residential properties and Sherwood Observatory.

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REPORT METHODOLOGY

This commentary should be read in conjunction with the “Lighting Strategy and Mitigation Report” submitted by DPA Lighting Consultants, dated 22nd September 2017, pertaining to the planning application at Newark Road, Sutton-in-Ashfield, ref. SKA3a. The commentary will review each section of the DPA report and suggests other factors that Sutton-in-Ashfield Council may wish to consider.

STANDARDS & GUIDANCE

The report suggests the development should be treated as E2 Environmental Zone. It goes on to describe the topography and that the observatory will not be in line of sight and suggests the more stringent E1 should be the target for the east/south east section of the development.

This approach could be confusing as there are no specific proposals as to how this hybrid arrangement should be applied in practice. An E2 Environmental Zone treatment will mitigate the impact of public lighting on existing properties at Searby Road. As Sherwood Observatory is not in line of sight of the proposed development, the recommendations shown in Table A of the report; the light intrusion (into windows), luminaire intensity (light source brightness) and building luminance (building floodlighting brightness) are relatively unimportant. However, upward light emanating from public lighting and domestic lighting has the potential to cause site aura and contributes to sky glow that will affect Sherwood Observatory.

For this development it is suggested the Environmental Zone be agreed as E2 with the additional requirement that the Sky Glow Upward Light Output Ratio (ULR) be 0% for all the public lighting on the site. Should any part of the development be in line of sight of Sherwood Observatory, then Environmental Zone 1 should be applied.

GENERIC LIGHTING TREATMENT - ROADWAYS

It is expected that the public lighting will be subject to a Section 38 Agreement with the Highway Authority, Nottinghamshire County Council. The specification for the lighting equipment to be used will be a matter between the developer and the Highway Authority. However, specific requirements in relation to planning will also need to be considered as part of the Section 38 Agreement and the subsequent adoption of the equipment for maintenance at public expense.

An ecology report submitted as part of the planning application suggests there is a presence of bats in two trees contained within the site and the possibility of bats foraging along the hedges. New guidance regarding lighting and bats is due to be published in June and this suggests that if these features are within 30m of any lighting then mitigation measures will be needed to ensure minimal impact. Where any lighting is to be installed less than 30m from these features then consultation should take place with a suitably qualified ecologist. Chartered Institute of Ecology and Environmental Management (www.cieem.net) will provide details of those with the relevant skills and experience.

It is suggested in this part that LED lighting will be used for most of the site and goes on to suggest the specification for the lighting should be for the LED's to have a colour temperature of 3,000^oK. It is understood the preferred LED colour temperature the Highway Authority uses is 4,000^oK. because of the location and proximity it is recommended that Sutton-in-Ashfield Council should recommend 3,000^oK be used on this development.

The report suggests that 4 and 6 metre lighting columns would be used and the possible use of very low level (bollard) lighting on the south and south eastern site boundaries. 4 metre lighting columns and bollards are likely to be unacceptable to the Highway Authority because of the increased maintenance and energy costs. A more likely combination will be for 6 metre lighting to be installed throughout the site with 5 metre raise and lower (hinged) lighting for footpaths where access by maintenance vehicles is not possible.

The Standards & Guidance part of this commentary suggested the requirement of a 0% ULR. This could be reinforced with a requirement for all public lighting luminaires to be installed with a 0° uplift ie flat. In addition, it could be considered that all public lighting luminaires have a facility for manufacturer shields to be fitted in any combination of front back and sides. This requirement will allow for some modification to be made after the lighting is installed to address any light intrusion issues that may be reported.

The lighting standards to be applied will be a matter for the developer and the Highway Authority to agree as part of the Section 38 Agreement, but they are likely to be lower than those suggested in the DPA report.

The DPA report mentions domestic lighting and Clean Neighborhoods Act and that where domestic lighting is installed be the developer will be sensitive to the environment. Clean Neighborhoods Act enforcement can be very difficult to enforce as a nuisance and loss of amenity needs to be demonstrated. Though it is commendable for the developer to be aware of environmentally friendly lighting during construction the installation of post construction inappropriate security lighting by residents is likely to have a much bigger impact on ULR and sky glow and is something that will be difficult to control.

Sutton-in-Ashfield Council may wish consider positive action in this area requiring a covenant, planning condition or similar on the properties to restrict the light emanating from any exterior luminaire to be restricted to 2,000 lumens and that all reasonable endeavors be taken to restrict and maintain the light emitted from the luminaire to be at or below the horizontal.

INDICATIVE LIGHTING LAYOUTS

The lighting layouts demonstrate typical public lighting arrangements. However, the type, style arrangement and spacing of the luminaires will be a matter for the developer and the Highway Authority to agree, so could be different to those in the illustrations.

CONCLUSION

The reports concludes that a lighting hierarchy should be established and that 3,000°K LED light sources should be used. These conclusions are not unreasonable.

It is considered that the report in conjunction with the comments contained in this commentary should be accepted by Sutton-in-Ashfield Council as acceptable mitigation measures to reduce the impact of public lighting installed at this development.

IMPACT OF DEVELOPMENT PROPOSALS ON ADJACENT PROPERTIES & SHERWOOD OBSERVATORY

Based on the development layout contained in the DPA report, the impact of public lighting due to site construction on adjacent existing residential properties, primarily on Searby Road, will be minimal. This is because the requirement for lighting to be installed compliant with an E2 Environmental Zone and the open space buffer between the existing and proposed properties will all but eliminate light spill. In the unlikely event of there being a reported received from existing properties, a low costs shield could be fitted to the offending luminaire. The main cause of obtrusive light affecting existing residential properties is likely to be from domestic security lighting, installed by the new residents. Modern relatively low power LED lighting used for this purpose can be inappropriately installed and operated. A mitigation for this could be to impose a planning condition, covenant or similar on all properties on this development to limit the light power of luminaires and for them to be installed and maintained in a downward aiming angle.

With regard to Sherwood Observatory, it is unlikely that any properties on this development will be in line of sight of the observatory, where this is the case glare and source intensity issues are not important. However, upward light emanating from the site could affect the observatory and this should be mitigated by having a 0% limit on upward light emitted from public lighting luminaires. It is inevitable there will be some upward light from installed public lighting as road surfaces are being lit and they will reflect a certain amount of that light upwards. The more probable causes of significantly increased sky glow is likely to be due to domestic security lighting emitting too much light and being inappropriately installed. There is little that can be done to stop this happening or power to persuade residents to make alterations once it has been installed. One of the few options could be by planning condition, covenant or similar to promote appropriate lighting solutions and controls. The mitigations described in the report and recommendations contained in this commentary will minimise, as far as is reasonably possible, additional to sky glow to the adjacent urban conurbation.

APPENDIX 1: DETAILS OF REPORT AUTHOR

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1981: HNC Electrical and Electronic Engineering, Wigan Technical College

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2014: Prince2

Professional achievements:

2008: Chartered Engineer

2007: Fellow of the Institution of Lighting Professionals

Experience record

2016 – Present	Director of Harrison Lighting Limited
2015 – 2016	Head of Lighting Design & Additional Revenue – Balfour Beatty Living Places
2010 – 2015	Senior Consultant – Jacobs UK
2005 – 2010	Street Lighting Manager – Birmingham City Council
1991 – 2005	County Lighting Engineer – Staffordshire County Council
1987 – 1991	Senior Lighting Engineer - Preston Borough Council
1971 – 1987	Apprentice electrician then craftsman - British Nuclear Fuels, North West Water Authority and Preston Borough Council