

Our Ref: EVO20010364-SL-001-D

Your Ref: 5015560

Peter Drury
Horton Heath
Technical Manager
Strategy One Horton Heath
Eastleigh Borough Council
Eastleigh House
Upper Market Street
Eastleigh
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02/10/2023

Dear Peter Drury,

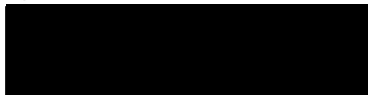
Lower Acre – Spine Road – One Horton Heath

Thank you for your scheme enquiry for the Lower Acre, Spine Road, One Horton Heath.

We have undertaken a lighting design for the area using Axia 3.1 lanterns on 6 metre post top columns. Lighting has been designed in accordance with BS5489-01:2020, and lighting classes of P3, P4 and P5 was applied.

Following the completed design work if there are changes to the road layouts which require design revisions these may incur further charges.

Yours sincerely,



James Duffin BA (Hons) IEng MILP
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Enerveo

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Design Commentary

Lower Acre – Spine Road – One Horton Heath

1. Introduction

- 1.1. Enerveo has been commissioned by Eastleigh Borough Council to develop a detailed lighting design to design the infrastructure road for the Lower Acre, at One Horton Heath
- 1.2. The purpose of this document is to provide commentary on the lighting design methodology adopted for the proposed works including decisions for design constraints and deviations from design standards.

2. Drawings

- 2.1. Drawing at 1:500 scale.

3. Standards

- 3.1. The proposed lighting design has been carried out using the following non-exhaustive list of standards and documents:
 - BS 5489-1:2020, *Code of practice for the design of road lighting - Part 1: Lighting of roads and public amenity areas.*
 - BS EN 13201-2:2015, *Road lighting — Part 2: Performance requirements*
 - ILP Professional Lighting Guide 02, PLG02, *The Application of Conflict Areas on the Highway.*
 - ILP Guidance Note, GN01:2021, *Guidance Notes for the Reduction of Obtrusive Light.*

4. General Layout

- 4.1. The location of the proposed works is Horton Heath North West of Burnetts Lane.
- 4.2. The works consist of a section 38 infrastructure road and footpaths, linking to segment 3 at its southern end.

5. Street Lighting Class

- 5.1. The lighting design has been carried out in accordance with the requirements of BS5489-01:2020, Table A.5.
- 5.2. Footpaths separated from the carriage way by a verge have been lit to 2 classes lower than the main carriageway, this is the same approach as the already used for the segment 3 infrastructure road.

	Spine Road	Footpath link to Segment 3	Footpath
Reference Table	A.5	A.5	A.5
Environmental Zone	E3, moderate ambient brightness	E3, moderate ambient brightness	E3, moderate ambient brightness
Traffic flow	Busy	Busy	Quiet
Traffic composition	Mixed	Pedestrians & cyclists	Pedestrians & cyclists
Road Speed	30 mph	30 mph	N/A
Other Considerations	Bus route	Link to main road	None
Lighting Class	P3	P4	P5

Lighting Class	Average Illuminance, Eave (Lux)	Average Illuminance Maximum, Eave (Lux)	Minimum Illuminance, Eave (Lux)
P3	7.50	11.25	1.50
P4	5.00	7.50	1.00
P5	3.00	4.50	0.6

6. Lighting Design Notes

- 6.1. Light intrusion into adjacent properties has been minimised using rear louvres and through careful positioning of lighting columns.
- 6.2. For much of the site light intrusion has been kept below 2 lux as per HCC TG13.
- 6.3. For block C (plots 222-230) light intrusion at ground floor level exceeds 2 lux (see grid 6). This is due the adjacent junction and illuminating it to C3 (as part of Segment 3, ref. SSE296001). The adjacent column (no 1) needs to be 8 metres in height and have a larger lumen output due to it contributing to the adjacent conflict area on the segment 3 road. Light intrusion is well below the 10-lux maximum as per GN01/21, and this is mostly at the ground floor only.
- 6.4. For block D (plots 235-243) light intrusion at ground floor level exceeds 2 lux (see grid 6). This is due the adjacent junction being on the bend and the need for a header column on the opposite side of the road. Light intrusion is well below the 10-lux maximum as per GN01/21.

7. Environmental

- 7.1. The designer has been notified by the client about site-specific Environmental Impact Assessments, mitigations, or other designations of nature conservation (including but not limited to SSSI, SAC, SPA).
- 7.2. Bats are present on the site, therefore 3000K Warm White LEDs have been used in line with HCC TG13 v3.0 3.29.1.

8. Maintenance factor

- 8.1. Environmental maintenance factor assuming a 48-month clean is 0.94.
- 8.2. Luminaire maintenance is 0.9 (this considers lumen depreciation and LED failures, L90B10).
- 8.3. Giving overall maintenance factors of 0.85 (as per HCC TG13).

9. Column Locations

- 9.1. Columns are to be installed rear of footway/footpath.
- 9.2. Where verges are at least 1-metre-wide columns are to be installed with 1 metre setback in the verge.

10. Column Type

- 10.1. Columns to be 6 metre galvanized tubular steel straight shaft (no outreach bracket), painted (factory finished), colour BS4800 00E53 Black.
- 10.2. Raise and lower columns are to be installed on footpaths and are to be of the mid hinge type.

11. Lantern Type

- 11.1. Urbis Axia 3.1 with DALI dimming ballast fitted with Mayflower six pin NEMA socket, post-top mounted, tilt 0 degree.
- 11.2. Lanterns to be finished in BS4800 00E53 Black.
- 11.3. Every lighting scheme is required to install one Mayflower Complete Lighting Control DALI Sub-master unit to control Nodes and link to Central Management System

12. Revision B Notes

- 12.1. Tie-in to Parcel 1.1 Road S1 added to calculation (see grid 17).
- 12.2. Updated road layout and section 28 hatches added to the lighting layout drawing.

13. Revision C Notes

- 13.1. Columns and lanterns to be BS4800 00E53 black.

14. Rev D Changes

- 14.1. Isolux contours shown on layout drawing in line with GN08/23.
- 14.2. Column positions from separate designs for Lower Acre shown for information only.