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Ecology, Infra, Sustainability Seviles - Resi Development, Athlumney, Navan Site Lighting Report





**Ecology, Infra, Sustainability Services - Resi Development, Athlumney, Navan
Site Lighting Report**

Document Control Sheet

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Introduction

ORS were engaged by Albert Developments Ltd. to undertake an external lighting design of the proposed development at Athlumney, Navan. The report provides the design intent proposed for the client.

The report details the preliminary lighting design of the development, including:

- Providing adequate illumination for both pedestrians and vehicles
- Minimising light pollution on the surrounding areas and neighbours
- Reducing glare on users
- The use of efficiency LED lighting technology

The complete installation shall be in accordance with all relevant Irish and European Standards including:

- IS 10101:2020 - National Rules for Electrical Installations;
- S.I. No. 291 of 2013: Safety. Health and Welfare at Work (Construction) Regulations 2013;
- IS EN 13201-2:2015 Road Lighting – Part 2: Performance Requirements;
- IS EN 13201-3:2015 Road Lighting – Part 3: Calculation of Performance;
- IS EN 13201-4:2015 Road Lighting – Part 4: Methods of Measuring Lighting Performance;
- BS 5489-1:2020 Code of Practice for the Design of Road Lighting. Part 1: Lighting of Roads and Public Amenity Areas;
- ESB Networks National Code of Practice for Customer Interface
- ESB Networks – Housing Schemes: Guidebook for ESB Networks Standards for Electrical Services
- Recommendations for Site Development Works in Housing Areas, DoEHLG
- Westmeath Public Lighting Technical Specification & Requirements
- Ecologist's recommendations

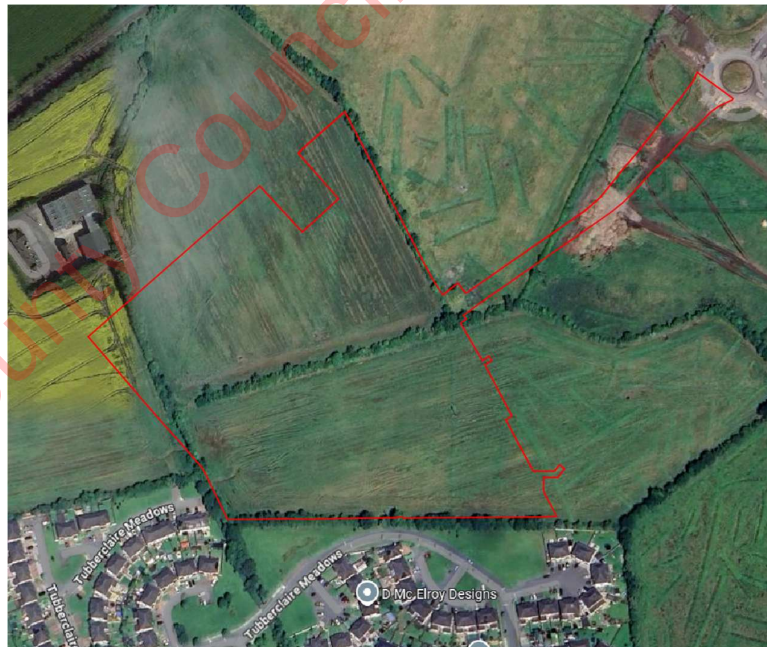


Figure 1: Athlumney, Navan as outlined in red. Source: Google Satellite imagery

1 Site Lighting Design

It is proposed to install new luminaires throughout the scheme:

- 21 x Metro Streetlight 19w LED Street Optic R03
- 9 x Metro Streetlight 19w LED Street Optic R01

1.1 Proposed Light Fitting Details

The lighting design is based on the following light fittings:

Veelite MetroStreetlight LED Street Optic R03		
	Led:	No. 21 x 19w LED/3000K
	Construction:	Die-cast aluminium. IP66. IK09 as standard. Driver and LED Modules are accessible for maintenance or replacement.
	Finish:	Grey RAL 9006 as standard. Other RAL colours on request.
	Life:	100,000h - L90@25°C
	Height:	Mounted on 6 m poles with no tilt

Veelite MetroStreetlight LED Street Optic R01		
	Led:	No. 9 x 19w LED/3000K
	Construction:	Die-cast aluminium. IP66. IK09 as standard. Driver and LED Modules are accessible for maintenance or replacement.
	Finish:	Grey RAL 9006 as standard. Other RAL colours on request.
	Life:	100,000h - L90@25°C
	Height:	Mounted on 6 m poles with no tilt

Please note that the design will be developed during the detailed design stage and the exact position and manufacturer of the light fittings may change, however the overall lighting installation will comply with the Standards listed in the Introduction.

The preliminary calculations were carried out using Lighting Reality software. Results below and on the drawings:

- Public Lighting Layout
- Reality Contour Layout
- Public Lighting Calculations Layout

1.2 General Data

ID:	Type:	Location			Angle	Tilt	Cant	Outreach
		X	Y	Height				
1	B	162.40	154.41	6.00	300.00	0.00	0.00	0.50
2	B	133.88	134.70	6.00	300.00	0.00	0.00	0.50
3	B	104.88	114.73	6.00	300.00	0.00	0.00	0.50
4	B	75.79	93.89	6.00	304.00	0.00	0.00	0.50
5	B	50.90	69.79	6.00	341.00	0.00	0.00	0.50
6	B	56.71	43.80	6.00	38.00	0.00	0.00	0.50
7	B	66.13	24.60	6.00	90.00	0.00	0.00	0.50
8	B	94.52	24.65	6.00	90.00	0.00	0.00	0.50
9	B	128.47	24.55	6.00	90.00	0.00	0.00	0.50
10	B	170.97	24.54	6.00	90.00	0.00	0.00	0.50
11	B	196.55	24.69	6.00	90.00	0.00	0.00	0.50
12	B	148.56	33.63	6.00	270.00	0.00	0.00	0.50
13	B	224.92	24.63	6.00	90.00	0.00	0.00	0.50
14	C	239.02	33.75	6.00	287.00	0.00	0.00	0.50
15	B	216.34	54.48	6.00	212.00	0.00	0.00	0.50
16	B	197.06	84.41	6.00	212.00	0.00	0.00	0.50
17	B	183.26	115.22	6.00	215.00	0.00	0.00	0.50
18	C	190.05	109.60	6.00	126.00	0.00	0.00	0.50
19	C	171.36	139.71	6.00	212.00	0.00	0.00	0.50
20	B	122.92	93.20	6.00	215.00	0.00	0.00	0.50
21	B	140.58	65.57	6.00	212.00	0.00	0.00	0.50
22	B	155.84	43.32	6.00	212.00	0.00	0.00	0.50
23	B	121.94	55.23	6.00	305.00	0.00	0.00	0.50
24	B	101.08	40.19	6.00	305.00	0.00	0.00	0.50
25	C	21.30	8.76	6.00	95.00	0.00	0.00	0.50
26	C	-2.13	31.86	6.00	2.00	0.00	0.00	0.50
27	C	-7.45	53.25	6.00	349.00	0.00	0.00	0.50
28	C	19.97	70.62	6.00	276.00	0.00	0.00	0.50
29	C	45.09	48.45	6.00	219.00	0.00	0.00	0.50
30	C	41.14	24.21	6.00	126.00	0.00	0.00	0.50

The average light level is 5.6 lux with a minimum of 1.1 lux (0.20 uniformity). This complies with class P4 of IS EN 13201-2:2015 / BS 5489-1:2020 for residential roads & paths (5.0 lux average, 1.0 lux minimum).

2 Ecology

Optics/ shields/ cowls shall be installed where necessary, in consideration of wildlife (e.g. bats) and to prevent unnecessary up lighting or illumination of nearby trees, buildings etc. The site lighting design will be developed further during the detailed design stage, taking on board any further recommendations from the Ecologist or Meath County Council.

3 Future Design Submission

In accordance with Meath County Council. Public Lighting requirements, a formal design submission shall be made to Meath County Council for approval, prior to the installation of any public lighting, or associated columns/ poles, ducts etc. on site.

The formal submission will include the following, as required:

- Lighting performance modelling calculations by Lighting Reality® in soft format. The cover shall show:
 - The identity of the lighting designer;
 - The project name;
 - The lighting classification designed to;
 - The combined maintenance factor for the luminaire and how it was derived.
- Lighting Reality® report in PDF format.
- CAD drawing in soft format showing the following information:
 - The site boundary;
 - All landscaping details;
 - All services;
 - All private areas to be hatched and identified;
 - Individually numbered columns with icons of a size to allow accurate assessment of column positions;
 - Public Lighting Ducts and Cable Access Chambers;
 - Individually numbered micro pillar locations;
 - ESB cabinet locations;
 - Individually numbered single line circuit diagrams;
 - All duct, column foundation or any other detail shall only show Meath County Council approved versions;
- Technical specifications for the proposed equipment, including TM21 and LM80 reports.
- Written details outlining the Original Equipment Manufacturer(OEM) warranty and the procedure for transferring warranty to Westmeath County Council after the project is taken in charge.
- Voltage drop calculations for each circuit.
- Lantern details including number of LEDs and drive current must be provided.
- Energy calculations including the designed dimming regi



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