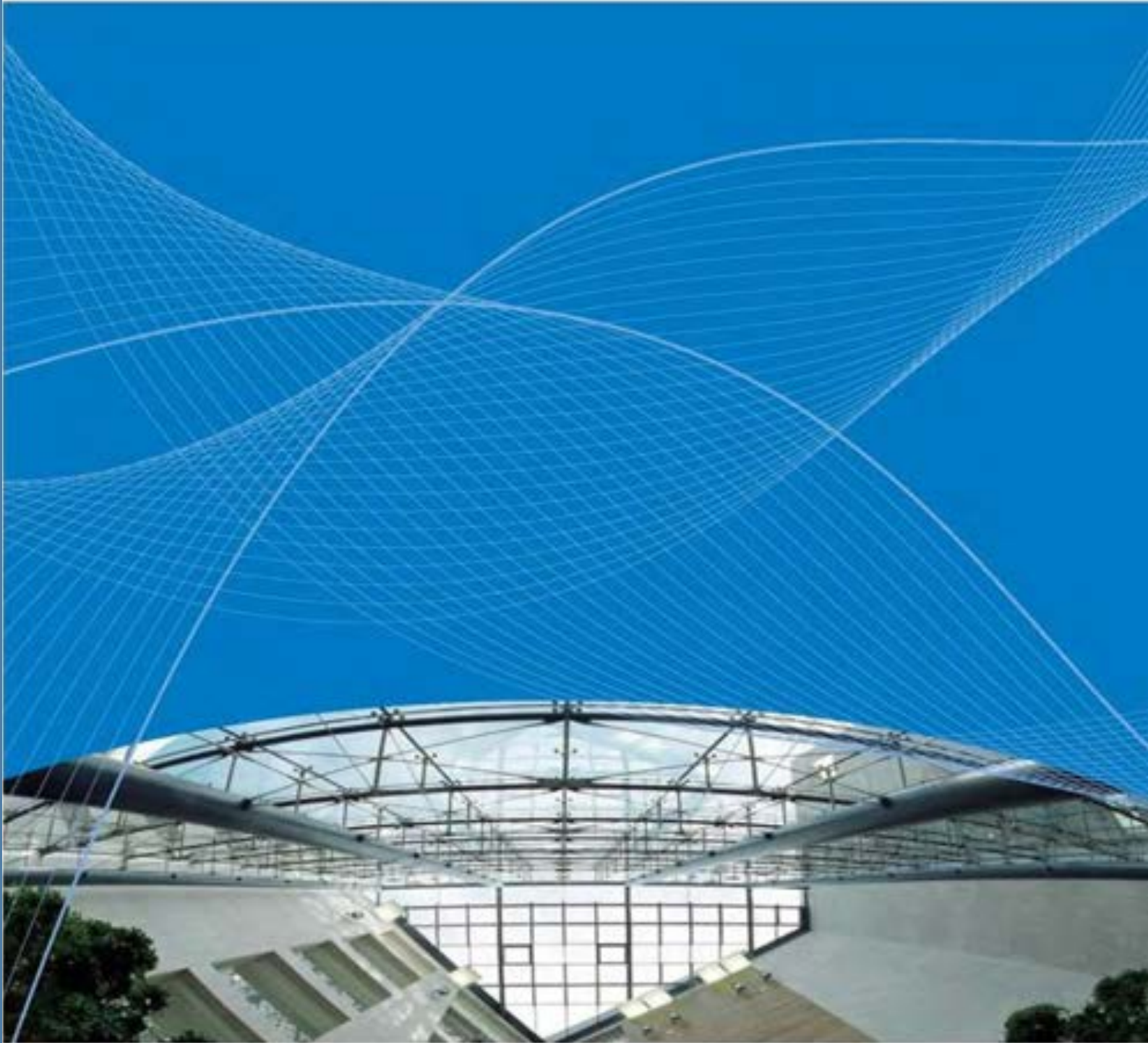


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Consulting Engineers & Project Managers



**PLANNING REPORT:
EXTERNAL LIGHTING DESIGN INTENT
STATEMENT
MEATH ARCHIVE**

MEATH COUNTY ARCHIVE

MEATH COUNTY COUNCIL

EXTERNAL LIGHTING DESIGN INTENT STATEMENT

FOR

PLANNING STAGE

March 2022

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1 INTRODUCTION

This report outlines the design approach proposed for the external lighting installations at the Proposed New **Meath County Archive** and takes into consideration the **employer's** requirements, and standards as listed below.

2 STANDARDS AND REGULATIONS

As Lighting Designers, the Site Lighting scheme, shall be based on best practice and, more importantly National & International Industry Standards, incorporating the following;

- Guide to Obtrusive light, The ILP Guidance Notes for the Reduction of Obtrusive Light GN01:2011
 - Building Research Establishment Information Paper - DG 529 Obtrusive Light from Proposed Developments (2013)
 - Guidance Notes For The Reduction Of Obtrusive **Light' Institution of Lighting Engineers**, 2011
 - Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations
 - Energy & Efficiency & Performance Standard for Light Bulbs, Public Consultation Document, October 2008
 - National Rules for Electrical Installations, Electro-Technical Council of Ireland 2008 (including recent Amendments)
 - BS 5489 (2013) Code of Practice for the Design of Road Lighting - Part 1:
• Lighting Roads and Public Amenity Areas
 - IS EN 12464-2, 2014 '**Lighting for Work Places. Outdoor work places'**
 - IS EN 13201 (2015) Road Lighting - Part 2: Performance Requirements,
 - CIBSE / SLL Lighting Handbook, 2012.
 - S.I. 151 of 2011
 - Building Control (Amended) Regulations 2014
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3 LIGHT POLLUTION - OVERVIEW

Light pollution is a recognized statutory nuisance. Obtrusive light from floodlighting within the site boundary onto adjacent roads and local wild-life district shall be minimized taking into consideration the following; (a) sky glow (direct upward waste light), (b) light trespass (intrusive light and light into windows/windcreens), over illumination, glare (source intensity) and clutter. Refer to Illustration 1.

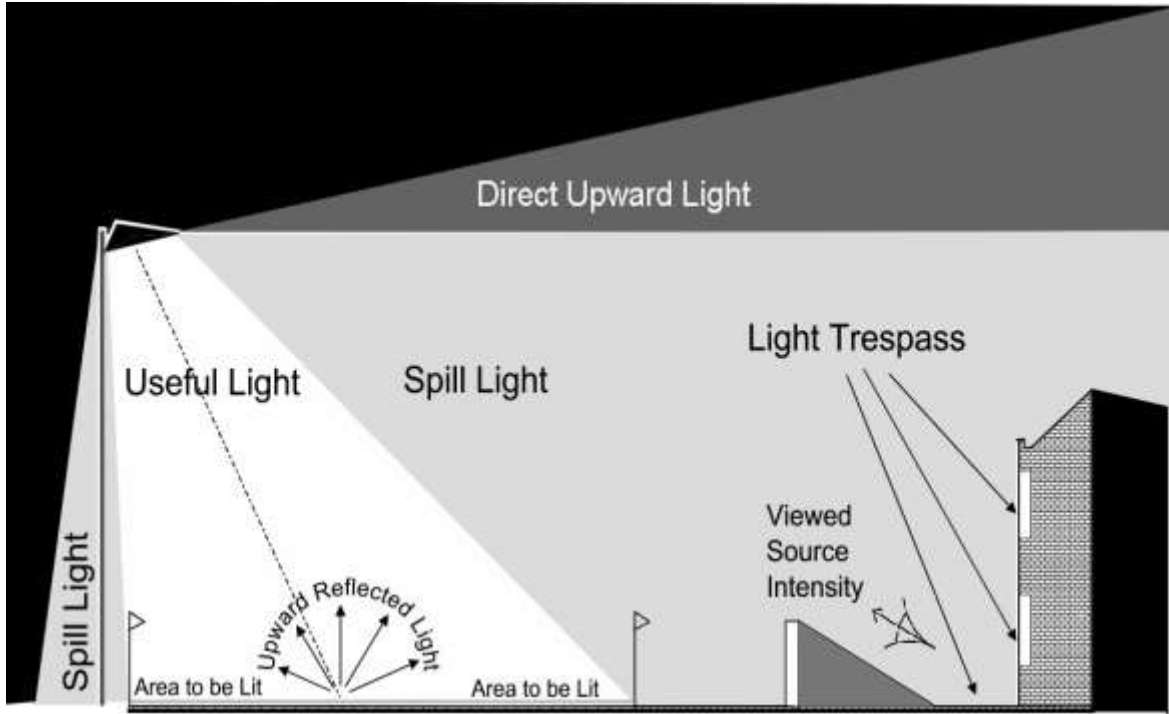


ILLUSTRATION 1

4 ENVIRONMENTAL CLASSIFICATION

Predictive modeling shall be undertaken to study, identify and reduce potential light pollution from the proposed site to achieve compliance with ILE Guidance Notes, Environmental Zone E4.

Table 1: Environmental zone descriptions in ILP guidance²³⁸

Category	Lighting environment	Examples
E0	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	intrinsically dark landscapes	National parks, areas of outstanding national beauty, etc
E2	Low district brightness areas	Rural, small village or relatively dark urban locations
E3	Medium district brightness areas	Small town centres or urban locations
E4	High district brightness areas	Township centres with high levels of night-time activity

(BRE, 2013, p.4)

5 OBTRUSIVE LIGHT LEVELS

In accordance with the ILE/ILP Guidance Notes, the Environmental Zone will be designed to Classification E4, i.e. medium district brightness, with a maximum sky glow (URL) of 15%, light trespass (onto windows of adjoining properties) of between 5 to 25 lux (pre and post curfew).

Potential problems from glare and over-illumination shall be evaluated and addressed to ensure that the design intent proposals include for high quality optics coupled with aiming and commissioning to mitigate against potential light spill and sky glow issues, as part of the detailed design process.

Table 2: ILP numerical guidance on obtrusive light

Obtrusive light limitations for exterior lighting installations

Environmental zone	Sky glow ULA (max %)	Light trespass into windows E, (lux)		source intensity (lx/d)		Building luminance pre-curfew
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average L (cd/m ²)
E0	0	0	0	0	0	0
E1	0	2	1*	2.5	0	0
E2	2.5	5	1	7.5	0.5	5
E3	5.0	10	2	10	1.0	10
E4	15.0	25	5	25	2.5	25

(BRE, 2013, p.5)

It may be noted also that illumination spill calculations shall not take into consideration landscaping proposals which are intended to provide visual screening between adjacent properties and areas of illumination. Landscaping screening (trees) will further reduce light trespass below the required levels.

6 EXTERNAL LIGHTING - DESIGN CLASSIFICATION

It is declared that the Class of Road Lighting design shall be based on “P1” requirements, as stipulated in I.S. EN 13201-2:2015, Clause 6 which is intended for “intended for pedestrians and pedal cyclists on footways, cycleways, emergency lanes and other road areas lying separately or along the carriageway of a traffic route, and for residential roads, pedestrian streets, parking places, schoolyards etc” (I.S. EN 13201-2:2003, p.11).

Minimum maintained illuminance levels shall be designed to achieve between 5 and 15 lux, measured at road level.

Table 3 — S-series of lighting classes

Class	Horizontal illuminance	
	\bar{E} in lx ^a [minimum maintained]	E_{min} in lx [maintained]
S1	15	5
S2	10	3
S3	7,5	1,5
S4	5	1
S5	3	0,6
S6	2	0,6
S7	performance not determined	performance not determined

^a To provide for uniformity, the actual value of the maintained average illuminance may not exceed 1,5 times the minimum \bar{E} value indicated for the class.

(I.S. EN 13201-2:2003, p. 10)

7 EXTERNAL LIGHTING - DISABILITY ACCESS CERTIFICATE

Where identified in the Disability Access Certificate application, the design of external lighting along designated routes shall specify external illumination levels of 100 lux on ramps or steps (measured at ramp or tread level), and 20 lux on level and gently sloped surfaces in accordance with the Building Control Regulations Technical Guidance Document M, 2010, Section 1.1, Clause g.

8 PUBLIC LIGHTING - & CCTV

Please see drawing at Appendix A showing the indicative locations of site lighting & CCTV coverage to the site.

