

JV TIERNEY & CO

MECHANICAL ELECTRICAL & SUSTAINABLE ENGINEERS

EXTERNAL LIGHTING STRATEGY

Rathcoole Apartment Development,
Rathcoole, Dublin 24


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**External Lighting Strategy
For
Rathcoole Apartment Development,
Rathcoole,
Dublin 24**

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 ACEI Member of the Association of Consulting Engineers of Ireland



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1. Executive Summary

The assessment below for Rathcoole Apartments development in Dublin 24 provides design evidence that the designed external lighting scheme shall be fit for purpose, achieve all applicable regulatory requirements and concludes that the light spill and glare from the new development and area around the building within the new development boundaries will have minimal impact on the surrounding area.

The recommendations made in this report for the area lighting are as follows;

- Zero Upwards Light Output Ratio (ULOR) column light fittings are used.
- The height of the roadway lights are restricted to 8m maximum.
- The lighting installation shall be controlled via a combination of timeclock and photocell operation which will restrict the lighting operation to only when essential.

The SDCC Public Lighting Department has recommended that additional public lighting is required in Tay Lane to ensure safety for pedestrians. The report states:

The existing public lighting provision on St.Brigids-Tay Lane is insufficient and has been subject to many resident complaints in recent years, particularly by the Women's Refuge where there are often security concerns.. The narrow footpaths and presence of ESB columns hosting distribution lines have limited the scope for improvement to the Public Lighting. The existing Public Lighting on St.Brigid's- Tay Lane would be insufficient to provide adequate light to the increased pedestrian and vehicular traffic under the proposed development. Undergrounding of 2 spans of the ESBN overhead distribution lines and the provision of a fully underground Public Lighting installation should be considered under this proposed development.'

The proposed design takes into consideration the above in lighting St Brigids –Tay lane inline with EN 13201 Road Lighting Standard. The proposed routing and alternations to the existing wiring for the public realmn lighting will be resolved during the detailed design stage of the project.

2. Design Guidelines

The lighting design for the proposed Rathcoole apartments development will be designed in line with the following industry standards, best practice guidelines and local authority guidelines;

- I. South Dublin County Council Public Lighting Standards.
- II. I.S 10101:2020 National Rules for Electrical Installations.



- III. ET211:2003 Code of Practice for Public Lighting.
- IV. EN 13201 Road Lighting Standards.
- V. BS 5498:2013 Code of Practice for Design of Road Lighting
- VI. Luminaires should be selected to ensure that when installed, there shall be zero direct upward light emitted to the sky (all output shall be at or below 90° to the horizontal) to help prevent sky glow from light pollution in the night sky.
- VII. The light emitted from these fittings shall have no photo biological risk and shall be categorised as 'Exempt Group' in relation to emissions of Blue Light, Infrared and Ultra-Violet Radiation in accordance with EN 62741:2008.
- VIII. All luminaires shall have a Luminous Intensity Classification of between G4 and G6 to IS EN 13201-2:2003/BS 5489-1:2013 and recommendations of Institution of Lighting Professionals and Bat Conservation Trust 'Bats and Lighting in the UK' documentation and Bat Conservation Ireland Guidance Notes for Planners, Engineers, Architects and Developers December 2010.
- IX. Guidance note for the Reduction of Obtrusive Light GN01:2011, produced by the Institute of Lighting Professionals (ILP).
- X. All luminaires shall comply with IS EN 60598; and all luminaires shall be energy efficient LED source fittings with sharp cut off optics.

3. Methodology

J.V. Tierney & Co. will contact all Public Utilities companies for telecom and electricity services and will carry out the full coordination of the utilities throughout, including security services for the scheme. These services will be collated and run in specific service zones with agreement from all the stakeholders.

The proposed lighting scheme will be designed using LED fittings with high performance optics to provide visual comfort. The lighting scheme will specifically respond to the landscape treatment and be sensitively designed to ensure minimum light pollution.

Luminaires will be selected to ensure that when installed there shall be zero direct upward light emitted to the sky (all output shall be at or below 90° to the horizontal) to help prevent sky glow from light pollution in the night sky.

The light emitted from these fittings shall have no photo biological risk and shall be categorised as 'Exempt Group' in relation to emissions of Blue light, Infrared and Ultraviolet Radiation in accordance with EN 62741:2008.

All luminaires shall have a Luminous Intensity Classification of between G4 and G6 to IS EN 13201-2:2003(E)/BS 5489-1:2013 and recommendations of Institution of Lighting Professionals



and Bat Conservation Trust 'Bats and Lighting in the UK' documentation and Bat Conservation Ireland Guidance Notes for Planners, Engineers, Architects and Developers December 2010. As also recommended in the above guides and standards, Variable Lighting and Part-Night Lighting shall be utilised. Following a grant of permission for the development a bat contour assessment will be carried out in line with the above standards.

4. Calculation Procedure

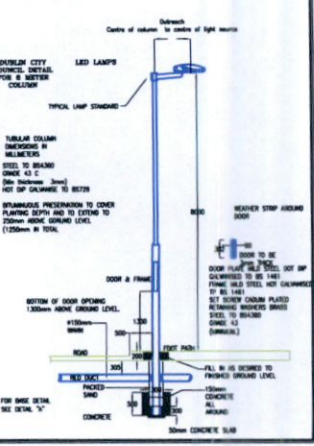
The proposed final lighting scheme will be designed using the lighting design software Relux to ensure all regulations are achieved and to review its effects on the local residents, ecology and environment.

The lighting design within the site boundary and public lighting area shall generally be carried out utilising up to 8metre high lighting poles and bollard lighting. The lighting shall be automatically controlled via photocell and timeclock combination.

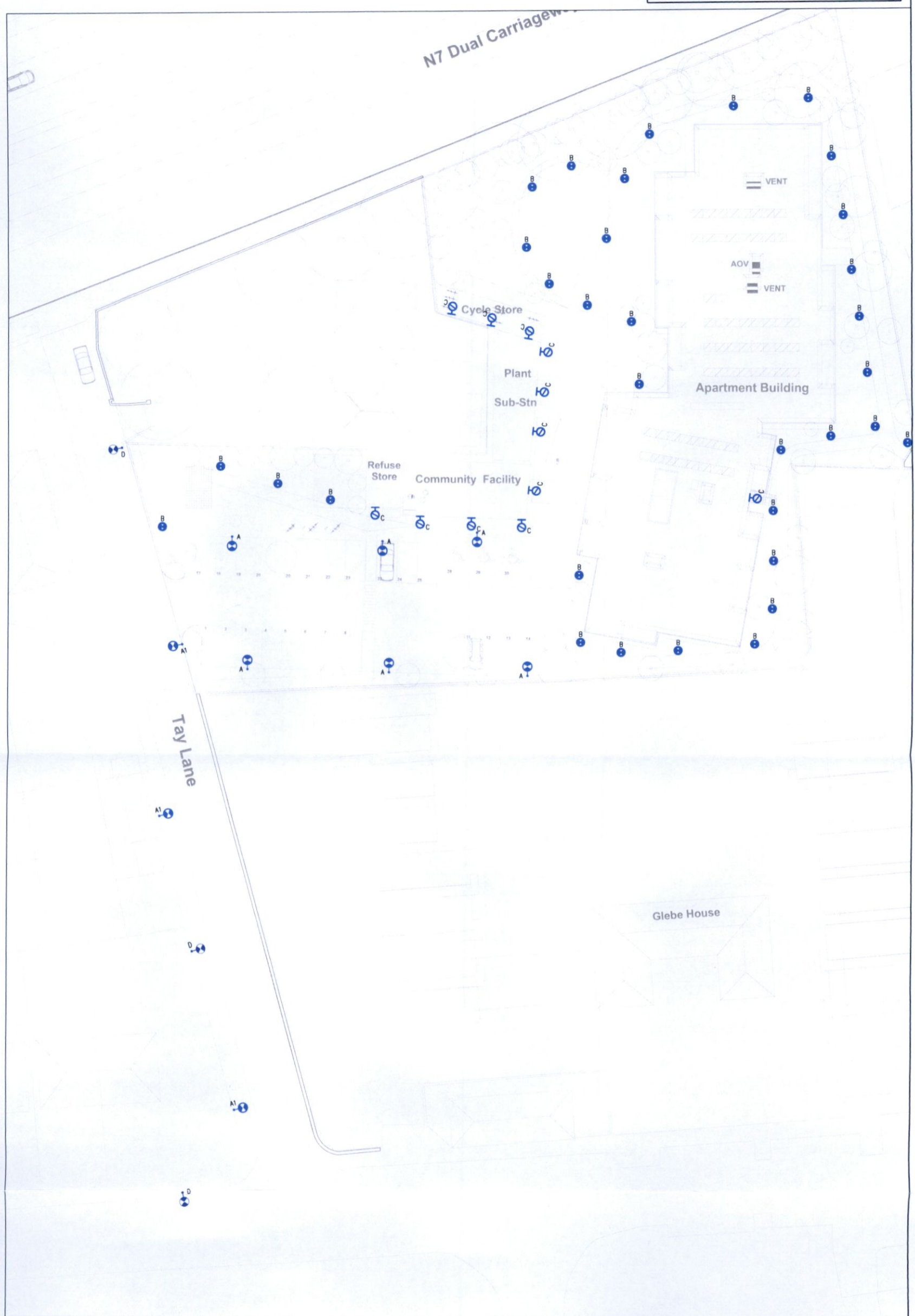
All light fittings used shall comply with the requirements set out within the Institute of Lighting Professionals Guidance notes for the Reduction of Obtrusive Light GN01:2011.

DETAILS OF POLE MOUNTED LIGHT FITTING

TYPICAL DETAIL OF COLUMN WITH 1 MTR. LAMP

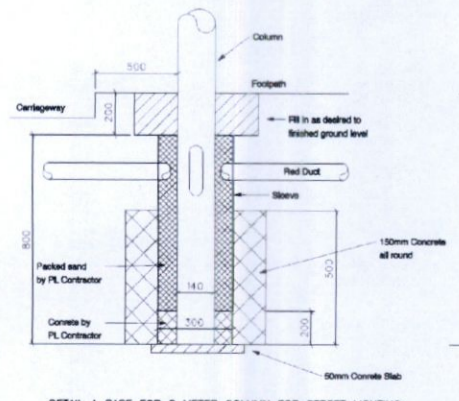


THIS IS A PERFORMANCE DRAWING ONLY. WORKING AND INSTALLATION DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR. FINAL POSITIONS OF ALL ITEMS SHOWN ARE FOR GUIDANCE AND PRICING PURPOSES ONLY. THE EXACT FINAL LOCATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR WHO SHALL CO-ORDINATE HIS INSTALLATIONS WITH THE MAIN CONTRACTOR AND ALL OTHER TRADES.



LEGEND:

- A1: 8M COLUMN C/W SINGLE HEAD LED LAMP SOURCE PUBLIC LIGHTING COLUMN.
- A: 8M COLUMN C/W SINGLE HEAD LED LAMP SOURCE WITH INTEGRAL LIGHTING CONTROL MODULE.
- D: EXISTING STREET LIGHTING
- B: IPES DECORATIVE BOLLARD LED LIGHT FITTING
- C: IPES DECORATIVE WALL MOUNTED LED LIGHT FITTING



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PROJECT: RATHCOOLE HOUSING
NEWCASTLE ROAD
RATHCOOLE
DUBLIN 24

DRAWING TITLE: PROPOSED SITE LIGHTING LAYOUT

REV	DATE	DESCRIPTION	BY	CHK
P01	14/12/22	ISSUED FOR PLANNING	SM	NT
P02	15-12-22	ISSUED FOR PLANNING	SM	NT
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ISO 45001:2018 I.S. EN ISO 9001:2015 I.S. EN ISO 14001:2015

DRAWING NUMBER: 4249 (60)-00-01

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SM	14/12/22	ISSUED FOR PLANNING		
CHECKED	DATE	SCALE	PROJECT NUMBER	REVISION
NT	14/12/22	1:250@A1P	4249	P02