



**PUBLIC LIGHTING REPORT
RESIDENTIAL DEVELOPMENT
DOLCAIN HOUSE RE-DEVELOPMENT**

**Dolcain House,
Monastery Road,
Clondalkin,
Dublin 22.**

Public Lighting Design

**Project: 1959
Issue: Planning
Date: Jan 2022**

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Project Details

Project: Dolcain House Development

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1. Introduction

This report will outline the design intent of public lighting design for the proposed re-development at Dolcain House. The existing entrance avenue public lighting is being retained and this report outlines new lighting within the development only, covering Option A & Option B.

This report outlines the lighting design as developed by Fallon Design to provide adequate illuminance to meet all regulations and requirements as follows;

- To provide adequate illumination to contribute toward the safe use of the access roads and pathways for vehicular and pedestrians.
- Minimise lighting pollution on surrounding areas and neighbours
- Reduce glare on pedestrians and other users of the access areas
- Use of highly efficient artificial lighting to reduce energy consumption

The complete installation will be required to meet the following regulatory standards and policies:

- S.I. No. 291 of 2013: Safety, Health and Welfare at work (Construction Reg. 2013)
- ETCI National Rules for electrical Installation ET101-2008
- BS 5489-1:2013 Code of Practice for the design of road lighting
- IS EN 13201-1 & 2 -2015
- IS EN 13201-5-2015 S2 & ME4A
- CIBSE Lighting Guide 7
- Housing Scheme: Guidebook ESB Networks Standards for Electrical Services
- Guidance Note 08/18: Bats and artificial lighting in the UK (Bat Conservation Trust, 2018)
- Bats & Lighting Guidance notes for: Planners, engineers, architects and developers (12/2010)
- County Council Street Lighting Technical Specification

2. Development Description

The development will consist of: - (i) Demolition of existing single storey shed (15.7sq.m), esb sub-station (29.5sq.m) and oil tank (12.1sq.m) located in the north-eastern section of the subject site; (ii) Change of use of the existing Blocks A, B and C at Dolcain House from office use to residential use which range in height from 4-5 storeys over basement, together with modifications to the existing blocks; (iii) alterations to the existing Blocks A, B and C will include the removal of the existing fourth floor level and replacement with a new fourth floor level at Block A only, the provision of an additional floor level to all blocks with 2 no. setback floors proposed to the atrium to now provide for a height of 4-5-6 storeys to Blocks A, B and C and upgrading of the existing external fabric of the building as well as internal modifications to layouts to accommodate the proposed residential apartments; (iv) alterations to Block A to include a 5 storey extension to northern elevation; (v) alterations to Block B include the demolition of the existing single storey element on the eastern façade (73.2sq.m) which comprises a kitchen area, office and storage space, the demolition of the existing three-storey connection between Blocks B and C (23sq.m) and the relocation of the existing telecommunications mast equipment at roof level; (vi) construction of a new 6-storey Block D to the east of Block B to accommodate 29 no. apartment units. The proposed alterations and modifications to the existing Blocks A, B and C and the proposed Block D will accommodate a total of 130 no. apartment units (comprising 61 no. one-bedroom apartments, 59 no. two-bedroom apartments and 10 no. three-bedroom apartments, as follows:-

- Block A (including atrium) will comprise 50 no. apartments (consisting of 22 no. one-bedroom apartments, 22 no. two-bedroom apartments and 6 no. three-bedroom apartments) and will range in height from 4-5 to 6 storeys over basement level;
- Block B will comprise 22 no. apartments (consisting of 9 no. one-bedroom apartments, 9 no. two-bedroom apartments and 4 no. three-bedroom apartments) and will be 5 storeys in height;
- Block C will comprise 29 no. apartments (consisting of 13 no. one-bedroom apartments, and 16 no. two-bedroom apartments) and will be 6 storeys in height; and,

- Block D will comprise 29 no. apartments (consisting of 17 no. one-bedroom apartments, and 12 no. two-bedroom apartments and will be 6 storeys in height.

The proposed development will be served by communal residential amenities/facilities at surface and basement level, including communal open space and outdoor areas at surface level; 310 no. bicycle parking spaces (254 no. at basement level and 56 no. at surface level); 78 no. car-parking spaces (62 no. at basement level and 16 no. surface level) including 5 no. car-club spaces and 3 no. accessible parking spaces and; 4 no. motorcycle parking spaces at basement level. The basement level also comprises a proposed bin storage area and plant room. The proposed development also includes landscaping, a pedestrian and cyclist access onto the adjacent Monastery Road to the north; and internal pedestrian and shared surfaces. (vii) Vehicular access to the development is proposed through the existing access/entrance to Dolcain House to the east. The application is accompanied by 2 no. site layout options, Option A and B. Option A includes a new public pedestrian footpath along the southern side of Monastery Road which extends east to the north-eastern application site boundary to facilitate a connection to future footpath. Option B provides for the omission of this footpath. (viii) Associated site and infrastructural works are also proposed which include; foul and surface water drainage; plant areas; ESB substation; and all associated site development works necessary to facilitate the proposed development.

3. Design Concept

The public lighting design is to provide adequate illuminance for vehicular and pedestrian access to the proposed development merging from the existing road.

The design of the public lighting includes low energy LED lighting throughout. Energy efficient light fittings are a key element in reducing the developments energy consumption.

4. Detailed Design

The design proposes to use 46 No. Luminaires with 5 No. types mounted with varying height columns and with varying beam widths across the development.

Proposed luminaire design layout as per drawing 1959-BW-04 & 05.

Lighting Dialux Calculations:

Development Lighting - Residential Zone:

- The Average Horizontal Illuminance is 5.33 Lux ($E_m \geq 5$ Lux) P4 to be compliant.
Average achieved: 5.17
- The Minimum Horizontal Illuminance is 1.15 Lux ($E_{min} \geq 1$ Lux) P4 to be compliant.
Average achieved: 1.0

Luminaire:

Luminaire A Data



Supplier	Urbis Schreder
Type	CITEA NG2 MINI 5304 Flat, Glass Extra Clear, Smooth 20 LH351
Lamp(s)	20 LH351C@300mA WW 730 230V 01-37-043
LampFlux(klm)/Colour	3.13 WW 3000K/70
File Name	CITEA NG2 MINI 5304 20 LH351C 300mA WW 730 19.4W 490612 Flat, Glass Extra C...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	231.3, 53.5, 0.0
No. in Project	2

Luminaire B Data



Supplier	Urbis Schreder
Type	CITEA NG2 MINI 5300 Flat, Glass Extra Clear, Smooth Back ligh
Lamp(s)	10 LH351C@300mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	1.57 WW 3000K/70
File Name	CITEA NG2 MINI 5300 10 LH351C 300mA WW 730 10.5W 490502 Flat, Glass Extra C...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	913.2, 60.5, 0.0
No. in Project	9

Luminaire C Data



Supplier	Urbis Schreder
Type	INDU WALL PACK 1 6550 Integrated lenses 24 LM302D@88mA NW 8
Lamp(s)	24 LM302D@88mA NW 840 230V
LampFlux(klm)/Colour	1.87 NW 4000K/60
File Name	INDU WALL PACK 1 6550 24 LM302D 88mA NW 840 15W 450172 Integrated lenses ...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	301.4, 52.3, 7.4
No. in Project	1

Luminaire D Data



Supplier	Urbis Schreder
Type	CITEA NG2 MINI 5304 Flat, Glass Extra Clear, Smooth Back ligh
Lamp(s)	20 LH351C@300mA WW 730 230V 01-37-043
LampFlux(klm)/Colour	3.13 WW 3000K/70
File Name	CITEA NG2 MINI 5304 20 LH351C 300mA WW 730 19.4W 490622 Flat, Glass Extra C...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	241.1, 30.8, 0.0
No. in Project	3

Luminaire E Data



Supplier	Urbis Schreder
Type	ALINEA Handrail 5121 - 3 LED 350mA WW Profiled Poly Clear, Sm
Lamp(s)	3 LEDs WW
Lamp Flux (klm)	0.37
File Name	ALINEA Handrail 5121 3 LED 350mA WW Profiled Poly Clear Smooth WO7314.ltd
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	230.6, 22.2, 4.1
No. in Project	31

5. Grid Results

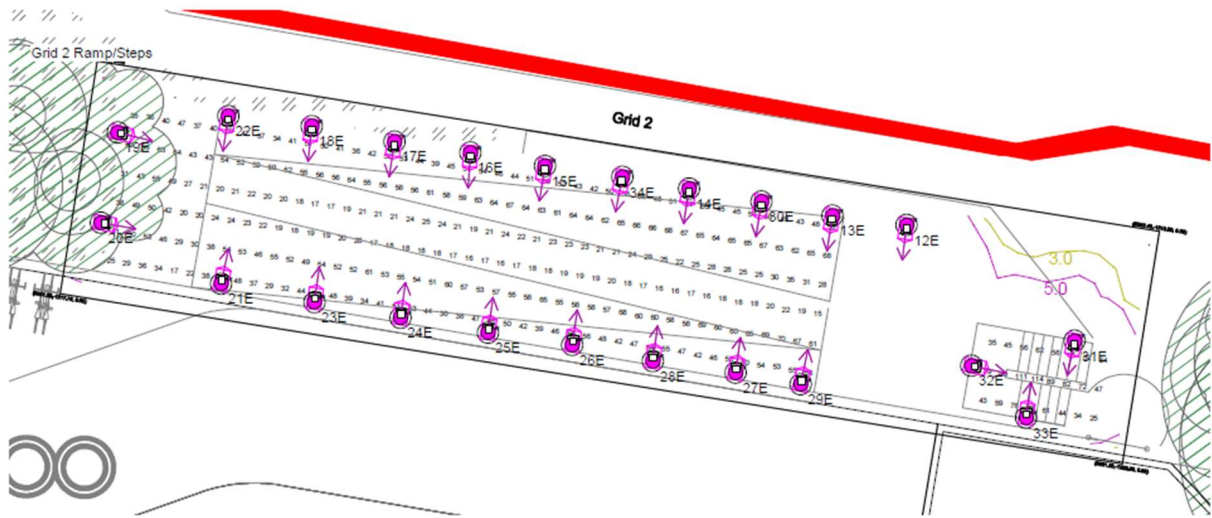
5.1 Horizontal Illuminance (Grid 1 Site)



Results

Eav	5.33
Emin	1.15
E _{max}	46.67
E _{min} /E _{max}	0.02
E _{min} /E _{av}	0.22

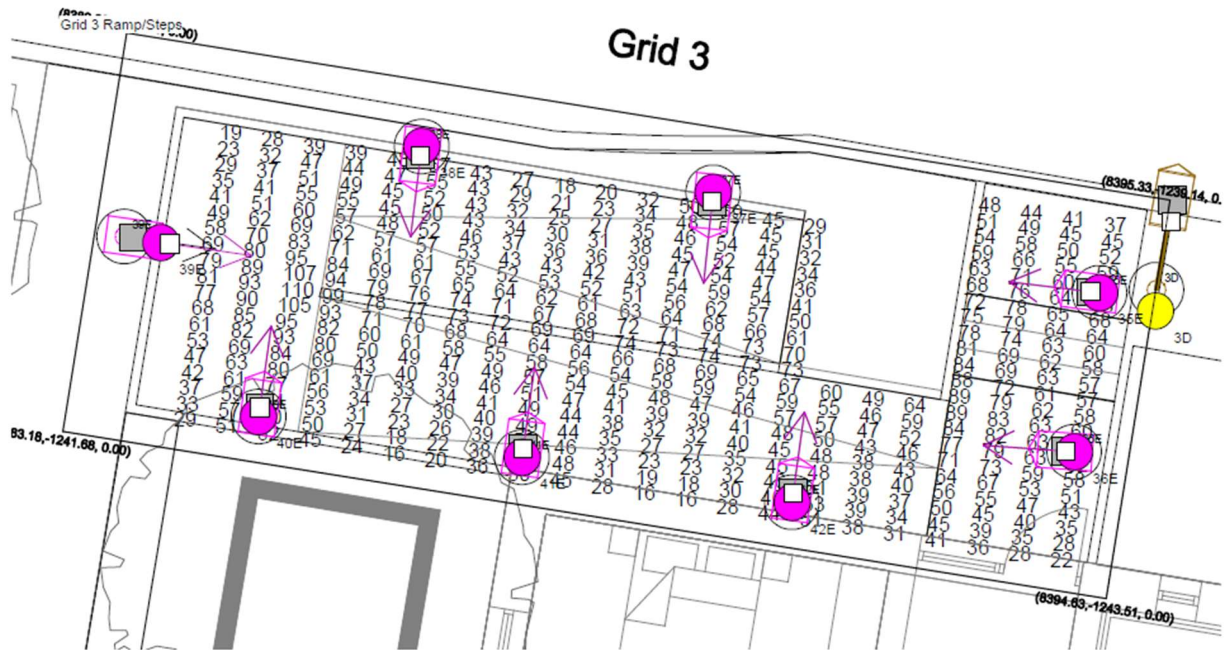
5.2 Horizontal Illuminance (Grid 2 Ramp/Steps)



Results

Eav	43.83
Emin	14.57
E _{max}	113.57
E _{min} /E _{max}	0.13
E _{min} /E _{av}	0.33

5.3 Horizontal Illuminance (Grid 3 Ramp/Steps)



Results

Eav	53.34
Emin	15.87
Emax	110.04
Emin/Emax	0.14
Emin/Eav	0.30