FALLON DESIGN
M&E ENGINEERING

PUBLIC LIGHTING REPORT

MECHANICAL & ELECTRICAL
MIXED RESIDENTIAL DEVELOPMENT
AT SWORDS, COUNTY DUBLIN.

Project: 2507

ADDRESS Avocet House, Riverwalk, Arklow, Co. Wicklow. Y14 XD68 CONTACT +353 (402) 20612 WEBSITE www.fallondesign.ie
DIRECTOR **MARK FALLON** CEng BEng MIEI MCIBSE EMAIL info@fallondesign.ie
VAT No. IE 3452860GH

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Project Details

Project: Proposed Mixed Residential Development at Forest Road, Swords, County Dublin.

Client:
Golden Port Homes Limited.,
Ardee House,
River Road,
Blanchardstown,
Dublin 15
D15 HW26

Architect:
Crawford Architecture,
The Building Block,
Bridge Street,
Sligo,
F91 XYZN.

Engineers:
Barrett Mahony Consulting Engineers.
Sandwith House,
52-54 Sandwith Street Lower,
Dublin.
D02 WR26.

M&E Consultant:
Fallon Design Ltd.
Avocet House,
Riverwalk,
Arklow,
Co. Wicklow.
Y14 XD68

Document Details:

Version	Issue Date	Title	Author
Rev 0	12.06.2025	Public Lighting Report	Fallon Design Ltd

1. Introduction

This report will outline the design intent for the public lighting design for the proposed development at Forest Road, Swords, County Dublin.

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)
- Local County Council Street Lighting Technical Specification

2. Development Description

Golden Port Homes Limited intend to apply for planning permission for a Large-Scale Residential Development (LRD) on lands at Forest Road, Swords, Co. Dublin. The proposed development will consist of a total of 109 No. residential units (42 No. duplex units; 41 No. apartments; 26 No. Houses) as follows:

(i) 42 No. Duplex units within 3-storey buildings comprising 21 No. 1 bed units at ground level and 21 No. 3 bed units over first and second floor levels with balconies/terraces, private and communal open space.

(ii) 41 No. Apartments within 2 blocks. Block A will be a 4 storey building with 14 No. Apartments (4 No. 1 bed units and 10 No. 2 bed units) with balconies/terraces to the north, south and west elevations, and bin, bicycle parking and plant at ground floor level and PV panels at roof level; Block B will be a 5 storey building with 27 No. Apartments (13 No. 1 bed and 14 No. 2 bed units) with balconies/terraces to the east and west elevations and bin, bicycle parking and plant at ground floor level and PV panels at roof level;

(iii) 26 No. houses (comprising 5 No. 2 bed, 2 storey terrace houses; 6 No. 3 bed, 2 storey terrace houses; 4 No. 3 bed, 2 storey semi-detached houses; and 11 No. 4 bed, 3 storey houses);

(iv) 96 No. Surface level car parking spaces and 4 No. Surface level motorcycle parking spaces as well as bike parking stores and spaces; and bin stores.

(v) 1 No. ESB substation.

(vi) Landscaping, including the provision of new public open spaces with play areas and a MUGA; footpaths and cycle paths, new vehicular access/egress from Forest Road; public lighting; boundary treatment and all associated site, drainage and development works necessary to facilitate the proposed development.

3. Design Concept

The public lighting design for residential development is to provide adequate illuminance for vehicular and pedestrian access for the residents and general public.

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 still uses the following:
33 x Metro Streetlight 19w 12LED 3000K Street Optic R01 mounted on 6m poles with no tilt to light the primary roads and paths
34 x Metro Streetlight 14w 8LED 3000K Street Optic R01 mounted on 6m poles with no tilt to light the secondary paths
8 x Metro Streetlight 36w 16LED 3000K Street Opti R03 mounted on 8m poles with 5 degree tilt to light Forrest Road.

Light levels are as follows:
Road & Paths - 5.1 lux average, 1.1 lux minimum (0.22 uniformity). This complies with IS EN 13201-2:2015 / BS 5489-1:2020 for roads and paths – class P4 (5.0 lux average, 1.0 lux minimum).
Entrance Junction – 10.8 lux average, 5.2 lux minimum (0.48 uniformity). This complies with IS EN 13201-2:2015 / BS 5489-1:2020 for conflict areas – class C4 (10.0 lux average, 0.40 uniformity).
Forrest Road – 8.4 lux average, 3.3 lux minimum (0.40 uniformity). This complies with IS EN 13201-2:2015 / BS 5489-1:2020 for roads – class C5 (7.5 lux average, 0.40 uniformity) and class P3 (7.5 lux average, 1.5 lux minimum).

Class P4 of IS EN 13201-2:2015 / BS 5489-1:2020

Proposed luminaire design layout as per drawings:

2262-FDE-EE-SS-50-01

Lighting Calculations:

Results

Eav	5.08
Emin	1.12
Emax	21.16
Emin/Emax	0.05
Emin/Eav	0.22

5. Luminaires:

Luminaire B Data

Supplier	
Type	Veelite Metro Streetlight 19w LED Street Optic R01
Lamp(s)	12 LED 3000K G4
Lamp Flux (klm)	2.35
File Name	SMTA10LGA-R01-3K.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	680.3, 387.6, 0.6
No. in Project	33

Luminaire C Data

Supplier	
Type	Veelite Metro Streetlight 36w LED Street Optic R03
Lamp(s)	16 LED 3000K G4
Lamp Flux (klm)	4.54
File Name	SMTA12LGA-R03-3K.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	537.8, 56.5, 0.3
No. in Project	8

Luminaire D Data

Supplier	
Type	Veelite Metro Streetlight 14w LED Street Optic R01
Lamp(s)	8 LED 3000K G4
Lamp Flux (klm)	1.57
File Name	SMTA08LGB-R01-3K.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	680.3, 387.6, 0.6
No. in Project	34

5.1 Metro Series

Metro Series

External Lighting

Modern functional LED streetlight, available in 3 sizes. Ideal for roadway, path or carpark applications.

Construction: Die-cast aluminium. IP66. IK09 as standard. Driver and LED Modules are accessible for maintenance or replacement.

Lens: Tempered glass as standard.

Installation: Luminaire supplied with 76mm mastfitter for post-top mounting or 60mm for side entry installation. Tiltable: 0°, 5° or 10°

Finish: Grey RAL 9006 as standard. Other RAL colours on request.

LED: Available in 10w to 134w LED (see ordering codes). CRI 70 4000K (standard). 3000K or other on request. Asymmetric street optic as standard. See ordering codes for more details.

Life: L90 B10 >100,000 hours. (at 25°C).

Driver: 220-240V AC 50/60 Hz. 700mA as Standard. 350mA, 500mA, 1050mA or custom setting on request. Lifetime (<10% failures): 100,000 hrs.

Mains Surge Protection: 10kV device included as standard.

Temperature: -30°C +50°C (-20°C +40°C with Emergency Kit)

Options: Dimming, DALI, Photocell, various optics available. Emergency available in some versions, please check with Veelite to clarify which.

Manufactured: Ireland

Product Compliance: EN 60598; CE.

Veelite

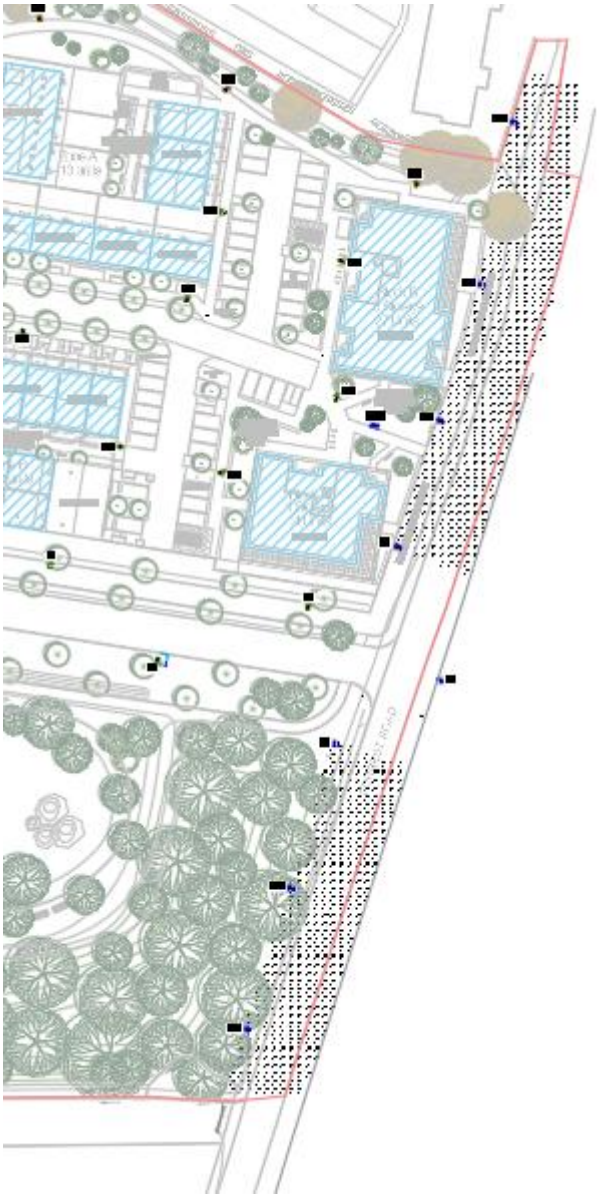
6. Grid Results

6.1 Horizontal Illuminance (lux) – Road & Paths

Results

Eav	5.08
Emin	1.12
Emax	21.16
Emin/Emax	0.05
Emin/Eav	0.22

6.2 Horizontal Illuminance (lux) – Forrest Road



Results

Eav	8.49
Emin	3.36
Emax	18.98
Emin/Emax	0.18
Emin/Eav	0.40

6.3 Horizontal Illuminance (lux) – Junctions

Junction

Results

Eav	10.87
Emin	5.24
Emax	19.44
Emin/Emax	0.27
Emin/Eav	0.48

6.4 Horizontal Illuminance (lux) – Isolines

6.5 Lux Point Levels

Reference drawing FRS-FDE-60-SW-DR-EE-1000 for a full lux plot across the development.

7. Energy Efficiency

The design of Public Lighting with regard to the energy consumption has been carefully considered for the lifetime of the development.

- Low energy LED light fittings with high quality efficient lamps will provide considerable operational saving for the development.

- Greater energy savings will also result using the inbuilt multi-step dimming program during late hours of darkens along the public lighting spaces.