



COMHAIRLE CONTAE FHINE GALL FINGAL COUNTY COUNCIL

Appendix 9

General Specification for Public Lighting Installations in Residential, Industrial and Commercial Developments

October 2026



Revision	Date	Prepared By	Approved By
0	June 2020		
1	April 2022	MB	MB
2	October 2026	MB	MB



Appendix 9 Change Summary

No	Section / location	Original PDF wording	October 2026 Word wording	Change type	Practical effect
1	Cover / issue date and revision status	"April 2022"; no revision-history table.	"October 2026"; revision 2 table records Revision 0, June 2020, and Revision 1, April 2022.	Document control / inconsistency	Identifies the Word document as a October 2026 issue but does not formally record that issue in the revision history.
2	Introduction / Council contact details	Public Lighting office at Grove Road; telephone number 8905870.	General Council number changed to 01 8905000 and direct email lighting@fingal.ie added.	Contact update	Provides updated contact routes for public-lighting enquiries and submissions.
3	Introduction / electrical certification	Contractor must belong to the ESSB designated by CER; ETCI Completion Certificates required.	Identifies Safe Electric as the current ESSB and requires Safe Electric Completion Certificates.	Regulatory / certification update	Updates the certification body and certificate terminology used for electrical installations.
4	Landlord-supplied installations	Landlord supplies must be converted to unmetered supply before taking in charge.	Conversion must include all works necessary to bring the complete installation to FCC Taking in Charge standard.	Expanded developer responsibility	Clarifies that changing the supply type alone is insufficient; the complete installation must meet the Council's TIC requirements.
5	Alterations to existing public lighting	Prior Council agreement required before existing lighting is altered or removed.	Alteration requests must be submitted in writing at least eight weeks in advance.	Added procedural requirement	Establishes a formal written-notice period for alterations affecting existing public lighting.
6	Council-produced lighting design / site information	Site layout must show road names, house numbers, ESB pillars, footpaths, verges, driveways and	AutoCAD drawing must identify all site features, and a colour-coded PDF site layout must also be provided.	Expanded drawing requirement	Requires both editable CAD information and a clearly presented PDF showing the site features affecting the lighting design.



		relevant site features.			
7	Alternative luminaires	Alternative must be at least as effective and energy efficient as the Council-specified luminaire.	Developer must also provide luminaire details, a Lighting Reality calculation report and a proposed layout drawing.	Expanded technical submission	Requires evidence that the proposed alternative will deliver an acceptable lighting design and performance.
8	Developer-produced lighting design	Developer may submit a Lighting Reality design for approval.	Design must be completed by a competent public-lighting designer proficient in public-lighting design software.	Added competency requirement	Establishes a defined competency expectation for the person preparing the lighting design.
9	Luminaire compliance approach	Lists seven framework manufacturers and permits alternatives that comply with the framework specification.	Requires compliance with the detailed LED luminaire specification in Appendix B , supported by the technical and handover documentation in Appendices C and L.	Specification expansion	Moves from a manufacturer-focused requirement to a detailed performance, testing, certification and documentation regime.
10	Lighting design standards	Residential design generally to P4 under BS 5489-1:2013 and IS EN 13201-3:2015.	Design to current IS EN 13201 Parts 1 to 5 ; generally P4 for residential areas, P5 for pedestrian walkways, with minimum overall uniformity Uo 0.2 for P classes.	Updated and expanded design standard	Updates the design basis and introduces express pedestrian-walkway, uniformity and calculation-grid requirements.
11	Colour temperature and mounting height	Neutral-white LED on six-metre columns; post-top mounting preferred.	Specifies 4000 K neutral white, warmer temperatures only with prior written approval, and generally five-metre mounting for pedestrian walkways.	Added design criteria	Establishes measurable colour-temperature and pedestrian-walkway mounting requirements.
12	Maintenance factor	Fixed LMF values of 0.84 up to six metres and 0.92 above six metres.	LMF calculated using a six-year cleaning cycle , mounting height and environmental zone under BS	Updated calculation method	Replaces fixed maintenance factors with a site- and maintenance-based



			5489-1:2020 Annex C.		calculation method.
13	Obtrusive light and ecology	No detailed boundary or ecological-lighting calculations required.	Requires horizontal and vertical boundary calculations under GN01/2021 , with GN08/2023 Bats and Artificial Lighting at Night considered in sensitive areas.	Added environmental requirement	Introduces formal assessment of light spill and possible effects on bats, ecological corridors and sensitive properties.
14	Isolux modelling	Isolux plot required down to the minimum calculated illuminance.	Plot must also model existing adjacent lights on all sides of the site boundary.	Expanded design modelling	Helps demonstrate lighting continuity between the development and surrounding roads or public areas.
15	Ducting design	Ducting information included in the general lighting plan.	Requires a separate ducting layout, full circuit schematic and JB2 access chambers at road crossings and changes in duct direction.	Added design and construction requirement	Provides clearer documentation and access arrangements for underground lighting infrastructure.
16	Tree clearance	Mature tree drip line must be at least 5 metres from a lighting column.	Requires at least 7 metres between all existing or proposed trees and lighting positions, shown on the lighting drawing.	Increased clearance requirement	Increases separation to reduce future obstruction of lighting and conflicts between trees and columns.
17	Hinged columns	No detailed raising-and-lowering column requirement.	Hinged columns required on pedestrian routes and where maintenance-truck access is unavailable, generally where clearance is under 3.5 metres; detailed material, door, locking and lowering-device requirements added.	Major added technical requirement	Provides a maintainable column solution where truck-mounted access cannot safely be provided.



18	Columns in shared surfaces	Columns may require refuges or barriers; impact-exposed columns will not be taken in charge.	Columns must be protected , and protection details must be submitted at design stage.	Strengthened protection requirement	Makes impact protection mandatory rather than conditional in shared-surface locations.
19	Developer documentation	Submission requirements are distributed throughout the original specification.	Appendix L establishes detailed documentation requirements for design, construction and completion/as-built stages.	Added handover framework	Creates a single staged schedule identifying the information required before approval and Taking in Charge.
20	Warranty transfer	Developer responsible for equipment failures for one year after ESNB connection completion.	Retains the one-year liability and requires details of how equipment warranties will transfer to FCC.	Added warranty administration	Helps ensure the Council receives the benefit of manufacturer and supplier warranties after handover.
21	Electrical certification and subsequent alterations	ETCI certificate and post-connection test results required.	Safe Electric certificates required, with a test record for each section pillar. Later disconnection or alteration requires prior written FCC approval.	Certification update / expanded control	Strengthens electrical evidence for each supply point and controls alterations to certified installations.
22	Applicable electrical standards	ET 101:2008, ET211/2003, ESNB interface code and UK street-lighting erection code.	IS 10101:2020 , including amendments, and the current ESB Networks National Code of Practice for Customer Interface.	Standards update	Replaces older electrical references with the current Irish installation rules and ESB Networks interface requirements.
23	Inspection and compliance documentation	Council inspections described generally.	Adds civil and electrical inspection sheets, a column design compliance sheet and installation-details records.	Added inspection framework	Formalises construction and completion inspections and introduces standard evidence for acceptance.



24	Column service life and traceability	Columns comply with IS EN 40 and the stated dimensional requirements.	Adds minimum fatigue-design lives of 30 years for steel and 50 years for aluminium , ground-level markings, product ID labels and material traceability.	Added structural and traceability requirements	Strengthens evidence of durability and allows installed columns to be traced to manufacturing and material records.
25	Column corrosion protection	Bituminous protection extends 150 mm above ground level .	Protection extends 250 mm above ground level ; galvanising standard updated to IS EN ISO 1461:2022.	Increased corrosion protection	Provides additional protection at the vulnerable ground-line area of the column.
26	Column mounting and brackets	Brackets permitted within specified maximum lengths; post-top mounting may be used.	Luminaires generally post-top mounted with no tilt; brackets require written FCC approval; minimum sleeve diameters added.	Design restriction / construction requirement	Makes post-top mounting the default and introduces tighter control over brackets and column sleeves.
27	Columns in grassed verges	No concrete maintenance surround specified.	Requires a 0.5 metre concrete surround at ground level.	Added maintenance requirement	Facilitates vegetation maintenance and reduces interference from grass immediately around the column.
28	Unmetered service pillars	Single-phase 80 A cut-out and minimum of three fuse units.	Three-phase 80 A cut-out, maximum of five single-phase fuse units, fixed dimensions and defined allocation of baseboard space.	Major technical revision	Standardises the electrical capacity, dimensions and internal arrangement of unmetered section pillars.
29	Metered service pillars	Dual-compartment pillar required, with no stated dimensions.	Adds minimum pillar dimensions, door-opening dimensions and separate ESN and FCC compartments.	Added dimensional standard	Establishes a consistent minimum physical arrangement for metered public-lighting pillars.
30	Underground ducts	HDPE to IS 135 Class B or PVC to IS EN 61386-24:2010; depth	HDPE to IS EN 12201 and IS EN 50626-1:2023; depth under HSA, road-opening and IS 10101	Standards update / expanded construction requirement	Updates duct standards and establishes clearer trench, bedding, surround and



		under ET 101:2008.	guidance; detailed sand bedding and backfill requirements added.		backfill requirements.
31	Cable access and inspection chambers	No dedicated chamber specification or JB1 to JB4 schedule.	Adds B125, C250 and D400 load classes; locking and identification requirements; and dimensions for JB1 to JB4 chambers.	Major added construction specification	Standardises public-lighting chamber size, strength, access, security and identification.
32	Alternative SWA cable	SWA accepted as an alternative to NYCY where appropriately bonded.	SWA use requires prior written PLS approval .	Added approval control	Gives the Public Lighting Section direct control over use of the alternative cable system.
33	PECU warranty	Minimum warranty of six years .	Minimum warranty increased to eight years .	Warranty increase	Extends required manufacturer support for photocell control equipment by two years.
34	LED luminaire specification	Approved-manufacturer list and limited technical-data form.	Detailed Appendix B specification covering construction, standards, testing, photometric performance, drivers, photocells, CMS compatibility and documentation.	Major technical expansion	Introduces a performance-based testing and acceptance regime for LED luminaires.
35	Luminaire performance	Limited parameters including IP65, IK08, CCT below 4000 K, CRI above 60 and surge protection.	Adds minimum 20-year design life, operating-temperature limits, 10 kA/10 kV surge protection, efficacy, glare classes, ULOR no more than 0.5%, thermal data and LED depreciation information.	Expanded performance criteria	Provides a more comprehensive basis for assessing safety, efficiency, durability, glare, upward light and long-term output.
36	Central Management System compatibility	No detailed CMS requirement.	Drivers must support DALI communications, be pre-wired for data and be compatible with	Added technology requirement	Prepares lighting installations for remote monitoring, diagnostics



			an FCC-approved CMS.		and dimming control.
37	Luminaire warranty	No general eight-year warranty for the complete luminaire and its components.	Requires an eight-year minimum warranty covering luminaires, drivers, photocells, electronics and finishes.	Added warranty requirement	Broadens and extends manufacturer protection for the complete luminaire assembly.
38	Marking-out procedure	No dedicated marking-out procedure.	Appendix G specifies site readiness, kerb-line information, paint and stake marking, spacing, setbacks and obstruction checks.	Added construction procedure	Formalises how column locations must be established and verified before installation.
39	Column structural compliance	No standard compliance form.	Adds a column design compliance sheet covering EN 40, design life, terrain, wind speed, doors, signs, banners, brackets and luminaire windage.	Added structural certification	Requires the manufacturer to demonstrate that each proposed column type is structurally suitable for its location and attachments.
40	Installation asset data	No comprehensive asset-information schedule.	Form 6 requires 124 data fields covering coordinates, supply, columns, brackets, luminaires, drivers, photocells, circuits, pillars, attachments and maintenance history.	Major asset-management requirement	Provides structured information needed to import, operate, inspect and maintain the assets after handover.
41	Completion documentation	Requirements distributed throughout the document, primarily covering certificates and selected drawings.	Appendix L requires a comprehensive package of as-built drawings, Excel asset data, calculations, inspection records, certificates, warranties, technical data and maintenance	Major handover requirement	Makes submission of a detailed evidence package a condition of acceptance and Taking in Charge.



			method statements.		
42	Contractor liability period	One-year period begins from ESNB connection completion.	Twelve-month period begins when the section pillars are energised and Public Lighting receives the required pre- and post-connection certificates and test records.	Procedural clarification	Establishes a defined, evidence-based trigger for the contractor liability period.

Key Substantive Changes

1. Much broader design requirements

The May 2026 document introduces updated lighting standards, pedestrian-walkway criteria, minimum uniformity, separate calculation grids, obtrusive-light assessments, bat-sensitive design and modelling of surrounding existing lights.

2. New maintainability requirements

The updated specification introduces mandatory hinged columns in locations inaccessible to maintenance trucks, column-protection details in shared surfaces, maintenance method statements and concrete surrounds for columns in grassed verges.

3. Expanded civil and electrical specifications

Significant new requirements cover column design life and traceability, service-pillar dimensions, trench bedding, inspection chambers, electrical test records, circuit schematics and controlled use of SWA cable.

4. Detailed LED luminaire specification

Appendix B now provides a comprehensive performance specification addressing product safety, photobiological safety, EMC, performance standards, CMS compatibility, photometric testing, thermal performance, glare, surge protection and warranties.

5. Formal inspection and compliance forms

New forms cover LED luminaire details, supply-point duct completion, civil inspections, electrical inspections, column-design compliance and installation asset details.

6. Comprehensive handover package



Appendix L consolidates design-stage, construction-stage and completion-stage documentation. The required completion package now includes as-built drawings, calculations, inspection records, certificates, warranties, maintenance information and structured Excel asset data.



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1 INTRODUCTION

It is the policy of Fingal County Council and normally a condition of Planning Permission that in any new residential and industrial development to be taken-in-charge a Developer must install public lighting to a design approved by the Council. This work normally includes the supply and installation of all ducting, cabling, service-pillars, columns, lanterns and other necessary electrical equipment and control gear as specified by the Council and generally elaborated in this document. It is recommended that the Developer employ an experienced PL contractor to execute the works.

The Public Lighting Section (PLS), part of the Operations Department of Fingal County Council, has responsibility for public lighting matters in the County. The office address is: Civic Offices, Grove Road, Blanchardstown, Dublin 15. The Fingal County Council contact number is 01 8905000. Alternatively, the Public Lighting Section can be contacted directly by email, at lighting@fingal.ie.

In order to comply with national requirements, the developer's electrical contractor must be a registered member of the relevant Electrical Safety Supervisory Body (ESSB) designated by CER as the approved regulatory body for the Electrical Contracting Trade. The current ESSB is Safe Electric. Safe Electric Completion Certificates will be required for each supply point requiring ESB connection and only certificates from Qualified Certifiers will be accepted.

A lighting installation will only be taken in charge when it complies fully with the agreed design and electrical specification issued by the Council and fully electrically certified. All installations will be subject to inspection by the Public Lighting Section during works and on completion. The Developer is completely responsible for ensuring that all aspects of the agreed lighting design are completed to the Council's satisfaction.

Developments intended to be privately managed are also normally required by Planning Permission to install an approved lighting scheme. The PLS can provide a design for such developments but should a Developer decide to proceed with a design utilising equipment and installation methods of their own choosing the Developer/Management Company will be responsible at their own expense for all works that may be required to make the installation compliant with taking-in-charge standard in relation to light levels, energy efficiency and maintainability of installation should a request be made subsequently for the development to be taken in charge.

Developers should note that lighting installations powered via landlord-supplies will NOT be taken in charge; such supplies will require conversion to Unmetered Supply in public ground and at the expense of the Developer/Management



Company, including all works to bring the installation to Fingal County Council Taking in Charge standard, prior to taking in charge.

No existing public lighting affected by the Developer's works, whether on Fingal County Council columns or ESB poles, shall be altered or removed without the prior express agreement of the Council; and in such cases the Developer will normally be required to have the agreed permanent lighting operational in advance of any such removal or alternatively install at his own expense temporary public lighting as agreed with the Council. The Developer will be liable for any costs incurred by the Council in remedying any unauthorised removal/modification of street lighting. Any requests for alterations to the existing public lighting infrastructure shall be requested in writing at least eight (8) weeks in advance.

2 GENERAL PROCEDURE

2.1 Lighting Design Provided by Public Lighting Section (PLS)

To facilitate provision of an appropriate lighting design the PLS will require a soft copy of the site layout in the Lighting Reality Outdoor software or an AutoCAD format drawing, including the Planning Reference Number, which should be e-mailed to:
lighting@fingal.ie.

The site layout must show clearly road names, house numbers, ESB LT distribution pillars, footpaths, verges, driveways and any features that may require special consideration for lighting, e.g. shared surface areas, cycle tracks, chicanes and other traffic calming measures. Where necessary the layout shall clearly distinguish between areas to be taken-in-charge by Fingal County Council and areas which will be in the care of any private management company.

The AutoCAD drawing shall include all site features such as trees, kerb lines, traffic management measures, etc., clearly identified. A colour-coded site layout clearly identifying all site features, shall also be provided in PDF format.

The Council's policy is to minimise energy usage and maintenance costs in lighting installations subject to achieving appropriate lighting levels. With a balance of these objectives in mind, the Public Lighting Section will provide a public lighting layout mapped on the site drawings provided by the Developer. Column positions, nominal height of columns, lantern types, cable sizes, underground circuits and column numbering scheme will all be indicated. The design hours will be billed to the developer on completing of the design.



A Developer proposing to use an alternative lantern to that indicated on the Council lighting plan must demonstrate that the alternative is at least as effective and energy efficient as that originally specified by the Council, and shall provide all relevant details of their alternative luminaire, a lighting calculation report in Lighting Reality software format, and a proposed layout drawing.

2.2 Lighting Design by Developer

Alternatively, a Developer may submit (Lighting Reality Outdoor soft copy) a public lighting plan to PLS for approval and agreement prior to commencing installation. The lighting design shall be designed by a competent public lighting designer proficient in the use of public lighting design software, in particular, the Lighting Reality Software.

Without prior approval the Council may require the Developer to modify equipment or the installation at his own expense in order to comply with Council requirements. The main requirements for any development lighting plan submitted for approval to PLS are as below.

- 1) It is a requirement that LED light sources are used in all new lighting installations, both public and private. The design must utilise LED lighting from reputable manufacturers.

LED luminaires must comply with the LED luminaire specification detailed in Appendix B of this document.

The Developer shall submit all documentation detailed in Appendix L of this document for approval of their proposed public lighting installation, including data for the proposed fittings on the LED Luminaire Technical Details Data Form included within Appendix C.

- 2) All lighting schemes shall be designed in accordance with the current versions of IS EN 13201 parts 1-5 inclusive, using LED luminaires.

The LED light source shall have a 'neutral white' colour temperature of 4000 Kelvin and post-top mounting of lanterns is the preferred option.

Alternative warmer colour temperatures of the LED light source may be required in limited specific circumstances, and will be subject to the prior written agreement of the PLS.

The residential lighting design will usually be based on Illuminance calculations and shall achieve P4 Class lighting and using a maximum grid spacing of 1.5m



x 1.5m. Unless otherwise advised by the PLS, the design shall be submitted based on luminaires mounted on 6 metre columns.

For pedestrian walkways, in general, the lighting scheme shall be designed to achieve a P5 lighting Class, a 5-metre column and luminaire mounting height shall be used, unless otherwise advised by the PLS.

For access roads and local distributor roads, consultation with PLS will be required for advice on the appropriate lighting class to be achieved.

All lighting scheme calculations for P-type Lighting Classes must achieve an overall uniformity U_o , of a minimum of 0.2.

Separate calculation grids are required for different parts of a site and areas within a site that would have a different lighting class, such as a road with adjacent footpaths, pedestrian walkways, junctions with the surrounding road network, etc. Where there are multiple roads in a development, it is preferable that each road has a separate calculation grid.

- 3) The overall maintenance factors used in the design calculations for LED light sources shall be calculated using a Luminaire Maintenance Factor (LMF) based on a 6-year (72 month) cleaning cycle for the luminaire mounting height and appropriate environmental zone, as shown in Annex C Table C.1 of BS 5489-1:2020.
- 4) The developer shall ensure there is minimum obtrusive light emitted from the proposed lighting scheme. The lighting scheme shall be in accordance with Guidance Note GN01/2021 – The Reduction of Obtrusive light, published by the Institution of Lighting Professionals and any subsequent revisions of this document.

A lighting calculation shall be provided for obtrusive light along each of the site boundaries. These obtrusive light calculations shall use a maintenance factor of 1.0 and shall consist of both horizontal illuminance and vertical illuminance calculation grids. If requested by the PLS, the developer shall provide additional obtrusive light calculation grids for areas of sensitive importance within the site, for example, building facades facing a courtyard, bat commuting routes across a site, etc.

In environmentally sensitive areas, the lighting design shall take account of Guidance Note GN08/2023 – Bats and Artificial Lighting at Night, published by the Institution of Lighting Professionals and the Bat Conservation Trust UK, and any subsequent revisions of this document.



- 5) The design submitted shall include an Isolux contour plot ranging down to minimum calculated illuminance.

The lighting layout design and Isolux contours drawings shall extend to include the modelling of existing adjacent lights on all sides of a site boundary to ensure that the proposed installation is located at appropriate distances from the existing installation, to give continuous lighting to the required standard along the road or area surrounding the development site.

- 6) A separate proposed ducting layout shall also be provided.
- 7) All ducts, columns and PL distribution pillars shall be located entirely in areas which are designated to be taken in charge, i.e. public ground, by the Council. No ducts shall be run in or through lands not scheduled for taking in charge.
- 8) Ducts shall be arranged to run longitudinally under verges/footpaths. Columns and PL distribution pillars are to be placed in the rear of footpaths, in grassed verges or other un-planted areas as appropriate to road/verge housing layouts.
- 9) Other than road crossings, which must run perpendicularly from kerb-kerb/verge-verge, no lighting duct must be run longitudinally in a road. JB2 type access chambers are required on each side of a road crossing, or where ducts change direction.
- 10) Electricity supplies must be Unmetered type with PL section pillars arranged as per ESB Networks National Code of Practice for Customer Interface. All PL columns and pillars shall be sited at least 2m from ESB source pillar. PL Section Pillars may be placed immediately adjacent to the first column of a circuit fused from that pillar. In all cases, ducting between the PL Section Pillar and ESB pillar must comply fully with ESB Interface requirements.
- 11) To comply with Unmetered Supply requirements the maximum connected load at a PL Section Pillar must be no greater than 2kVA. The design submitted must indicate the proposed circuit arrangements including cable and fuse sizing. A full proposed circuit schematic must be provided.
- 12) The preferred underground cable is NYCY type with concentric screen/protective conductor.



- 13) **FINGAL TREE POLICY:** In accordance with the requirements of Fingal County Council's policy document 'Forest of Fingal A Tree Strategy for Fingal', there must be a minimum of seven (7) metres clearance between the locations of all trees (existing trees and proposed new trees), within a development in relation to the proposed lighting positions. This minimum clearance line shall be shown around each tree on the public lighting layout drawing.
Trees shall not be grouped or clustered in such a way as to impede the effective lighting of the development when mature.
- 14) Cable routes across a green space shall be aligned along the perimeter of the space in the interest of safety by maximising traceability of cable route and minimising likelihood of damage which might occur should later excavation/landscaping of the space take place.
- 15) The Council does not accept the use of illuminated bollards or uplighters, as a means of providing public lighting in any circumstances.
- 16) Columns must be manufactured in accordance with IS EN 40, stepped tubular or octagonal steel style, with galvanised finish. Concrete used to secure column roots should not extend above level of the lower edge of cable entry.
- 17) Raising and lowering hinged-type columns shall be used in pedestrian walkways, or in locations with less than 3.5m wide clearance and inaccessible to a maintenance truck, e.g. on steps / embankments / narrow laneways etc., to allow for future maintenance of the installation.

Pathways and/or laneways are considered to be accessible for the truck-mounted bucket hoist if they are at least 3.5 metres wide and the pathway or laneway surface is designed to support trucks.

All columns not accessible for maintenance from a truck-mounted bucket hoist shall be of the raising and lowering type and shall, in general, be for a 5-metre mounting height. Other mounting heights for the hinged columns may be used in certain situations, subject to the prior written approval of the PLS.

Hinged Columns shall comply with the specifications as detailed within Section 6.2 and shall be equipped with a locking facility. Detailed drawings of the hinged columns proposed shall be submitted to the PLS for approval. The developer must supply the PLS with any mechanical drop-down device needed to lower the columns.

- 18) Columns placed in 'shared surface' areas must be protected, and will require kerbed refuges or other barriers to prevent impacts from manoeuvring



vehicles. Details of column protection measures in shared surfaces shall be provided as part of the documentation required for approval of the proposed lighting design.

Columns exposed to the likelihood of impact from vehicles will not be taken in charge by the Council.

- 19) Individual Photoelectric Control Unit (PECU) are to be used for switching lights to operate on dusk-dawn profile, which shall be 35 lux on/18 lux off.

Any conflicts between the lighting design and site conditions such as geological survey, environmental conditions, etc., whether related to construction difficulties or health and safety issues, must be notified to the Public Lighting Section for prior agreement on modification as any unapproved modifications will not be accepted for taking-in-charge.

2.3 Documentation to be Provided by Developer

A summary of the documentation the Developer must provide at each stage of the development process, is provided in Appendix L.

3 WARRANTY PERIOD

The Developer is liable for replacement of any equipment which fails in normal service or otherwise needs corrective action if detected by the Council or their agents during a period of one year from the date of connection completion by ESB Networks.

The Developer shall provide details of the warranty transfer procedure of the public lighting infrastructure equipment to Fingal County Council.

4 ELECTRICITY SUPPLY, ESB NETWORKS and CERTIFICATION REQUIREMENTS

4.1 Supply Agreement

For public lighting that will be taken in charge a Developer does not need to establish a Supply Agreement as the Council has a Supply Agreement in place for such lighting.



4.2 Connection Agreement

A formal application to ESB Networks (ESBN) is required for each new public lighting supply point. The application process is normally completed by the Council for lighting that will be taken in charge. ESBN requires prior payment for each new connection point and the Developer is liable for this payment.

The normal procedure for obtaining a Connection Agreement is:

- (a) Fingal County Council will make the necessary application to ESBN for the number of supply points required based on the agreed Lighting Plan.
- (b) ESBN will issue to Fingal County Council a TMPRN for each supply point in the installation and an invoice for prepayment of the contributions required.
- (c) Fingal will issue an Invoice to the Developer for the ESBN payment plus a fee to cover Fingal administration and inspection costs. PROMPT PAYMENT OF THIS INVOICE WILL AVOID UNNECESSARY DELAY IN CONNECTION OF SUPPLY POINTS.
- (d) The Council will pay in full the contribution amount invoiced by ESBN.

4.3 Certification

When a lighting installation has proceeded to the stage of being ready for supply connection the Developer must provide the following information to the Council:

- (a) Fingal County Council Supply Point Duct Completion Certificate

The Developer shall submit a completed Supply Point Duct Completion Certificate Form (Form 2), included within Appendix F of this specification. This certificate is required to confirm that all ducts necessary for ESBN to lead cables into the supply point are clear and fitted with suitable draw rope. The Developer is liable for all attendance of ESBN should this duct subsequently be found to be missing/defective or otherwise unsuitable for ESBN use.

- (b) Safe Electric Completion Certificate for Electrical Installations

To enable ESBN to complete the supply connection, the appropriate Safe Electric completion certificate must be completed on-line by the Developer's electrical contractor. This will require inclusion of the relevant TMPRN assigned by ESB. The PLS will release the relevant number to the



Developer's contractor subject to PLS staff completing a pre-connection inspection to confirm compliance with Council requirements. The Developer/Electrical Contractor must contact PLS to request this inspection and must provide a test record sheet for each public lighting section pillar within the development. Subject to the installation being deemed satisfactory and the Developer/Electrical Contractor having corrected any notified defects, the PLS will notify the relevant TMPRN to the Contractor which will enable submission of the Completion Certificate to ESNB. In all cases the Developer/Electrical Contractor must provide Customer copies of all Completion Certificates.

(c) Post Connection Testing

To fully comply with testing requirements the Electrical Contractor must ensure that all relevant post-connection tests have been completed and then forward results to the Council.

Developers/Electrical Contractors should note that once an Electrical Completion Certificate has been submitted for all or a portion of any public lighting installation, no subsequent disconnection or alteration may be made to it unless specifically agreed in advance in writing by Fingal County Council.

For any Council approved completion of or addition/extension to circuits already energised, the Developer/Contractor must forward the appropriate Minor Works Completion Certificate to the Council to comply with CER regulations.

5 APPLICABLE INSTALLATION STANDARDS AND CODES OF PRACTICE

Erection and testing details shall be in accordance with the current editions of and amendments to:

- (a) IS 10101:2020 National Rules for Electrical Installations Fifth Edition, including all Amendments, published by the National Standards Authority of Ireland.
- (b) National Code of Practice for Customer Interface, as published by ESB Networks and available on-line.



6 INSPECTION OF INSTALLATION

Fingal County Council Public Lighting will carry out inspections of the public lighting installation during construction stage and on completion of the installation. Sample civil and electrical inspection sheets (Form 3 and Form 4 respectively), are provided in Appendix H.

the Developer shall also provide the following documentation to the Council:

(a) Fingal County Council Lighting Column Design Compliance Sheet

The Developer shall submit a completed Lighting Column Design Compliance Sheet (Form 5) included within Appendix I of this specification. A Column Design Compliance Sheet must be completed for each column type and column height used within the development. This shall be submitted prior to installation of the columns. Copies must also be provided as part of the As-Constructed Documentation

(b) Fingal County Council Required Lighting Installation Details

The Developer must complete the 'Required Lighting Installation Details' form (Form 6) provided within Appendix K, for all lights and section pillars in the lighting scheme of the development. These must be submitted in Microsoft Excel Format as part of the As-Constructed Documentation for the development's lighting scheme.

7 INSTALLATION DETAILS

ALL PUBLIC LIGHTING PILLARS, COLUMNS, DUCTS AND CABLES MUST BE PLACED OUTSIDE THE BOUNDARIES OF PRIVATE PROPERTY.

If there is any doubt as to the exact location of columns/pillars, or any difficulty in placing columns/pillars or arranging cable circuits according to the layout provided, or if the Developer changes the site/roads layout, the PLS must be consulted to agree any consequential alterations to the lighting design before work is carried out. Otherwise, the Council may not accept the altered installation and may require other changes to be carried out at the Developer's expense to provide a compliant arrangement.



7.1 Standard Columns

All columns shall be designed to comply with all sections of IS EN 40 and designed to suit topography/'k' factor appropriate to Irish conditions and will normally be planted root style.

Columns shall in general be constructed of steel, unless otherwise specified the PLS.

Manufacturers shall confirm that their steel columns have a fatigue design life of 30 years minimum, and 50 years minimum for aluminium columns in accordance with IS EN 40-3-3.

The column baseboard access door shall be centred at a height of 1.5 metres above finished road level. A cable entry slot, 150 mm. x 75 mm., reinforced if necessary, shall be provided in the column root in line with the compartment door open and the top of the entry shall be a minimum of 300mm below ground level when installed.

Each steel column and door shall be basically protected against corrosion by hot dip galvanising internally and externally after manufacture complying with the requirements of I.S. EN ISO 1461:2022. The outside of the planted portion of all columns shall additionally be protected by a bituminous coating extending to a height of 250mm above ground level. Ground level shall be marked on all columns by the manufacturer.

All 8 and 6 metre columns shall be of stepped-tubular steel construction fabricated from 3mm sheet steel or of tapered octagonal construction with a minimum wall thickness of 3mm. No circumferential butt-welding shall be used in column fabrication.

All 12 and 10 metre columns shall be of tapered octagonal design, formed from 3mm thick sheet steel and fabricated using longitudinal welding only.

In a multi-phase development, the Council may specify the use of octagonal or tubular columns in order to maintain a consistent and co-ordinated installation through the phases.



The door opening shall comprise a welded-in frame with all around weather strip and the door itself must be of flat steel and secured by 2 triangular head screws as per Drawing Number PL 1/2 Rev.2A.

A fireproofed insulating baseboard of 20mm thickness, shall be fitted in each column base compartment suitable for mounting cable termination/looping blocks, fuse unit and cell test switch. The clearance between baseboard and the inside face of door when secured shall be not less than 100 mm.

A bonding cable for bonding the doors to the columns shall be provided. The cable for bonding the doors to the column body shall be a 10 sq. mm stranded panel flex or flat-braided cable, PVC insulated copper earth cable, colour coded green and yellow.

A product ID label shall be fixed inside each column. The label shall identify the manufacturer, the product part code, the year of manufacture and the standard to which the column has been manufactured. A steel identification mark traceable to a material test cert shall also be provided.

7.2 Hinged Columns

Raising and Lowering Columns shall be for 5-metre, 6-metre and 8-metre column heights above ground level.

All columns shall be designed to comply with all sections of IS EN 40 and designed to suit topography/'k' factor appropriate to Irish conditions and will normally be planted root style.

Manufacturers shall confirm that their columns have a fatigue design life of 30 years minimum in accordance with IS EN 40-3-3.

Columns shall be of a hinged design and shall be constructed of heavy-duty steel, minimum steel grade S275J0, to the latest requirements of EN 10025-2 and EN 10219. The thickness of the steel shall be at least 3 mm.

Each steel column and door shall be basically protected against corrosion by hot dip galvanising internally and externally after manufacture complying with I.S. EN ISO 1461:2022. The outside of the planted portion of all columns shall additionally be protected by a bituminous coating extending to a height of 250mm above ground level. Ground level shall be marked on all columns by the manufacturer.



A cable entry slot, 150 mm. x 75 mm., reinforced if necessary, shall be provided in the column root in line with the compartment door ope and the top of the entry shall be a minimum of 300mm below ground level when installed.

A fireproofed insulating baseboard of 20mm minimum thickness, shall be fitted in each column base compartment suitable for mounting cable termination/looping blocks, fuse unit and cell test switch. The clearance between baseboard and the inside face of door when secured shall be not less than 100 mm.

A bonding cable for bonding the doors to the columns shall be provided. The cable for bonding the doors to the column body shall be a 10 sq. mm stranded panel flex or flat-braided cable, PVC insulated copper earth cable, colour coded green and yellow.

For 5-metre and 6-metre Hinged column types, the columns shall be of the stepped tubular steel type and for 8-metre column types, the columns shall be of the octagonal type. All hinged column types shall be equipped with flush doors.

Hinged Columns shall have fitted compartment doors. The doors shall be as high as possible, with a minimum height of 600 mm above ground level to the bottom of the door opening for 5-metre and 6-metre column types, and a minimum of 1.3 metres above ground level to the bottom of the door opening for 8-metre column types.

The door opening shall have a flush laser-cut door (not Plasma Cut) with an all-around weather strip. The door shall be secured by 2 triangular head screws. The column doors shall be consistent in dimensions, to ensure interchangeability.

The door shall be a tight-fitting laser cut door with little or no gap between the outside of the door and inside edge of the door opening (ignoring the weather strip). The maximum gap (or tolerance) between the door and the door opening surrounding it of 0.5 mm.

For all hinged columns, galvanised steel strips at least 6 mm thick shall be welded near the inside top and inside bottom of the door opening and these shall be tapped for M8 bolts that shall be used to secure the door of the column in position.

For 5-metre and 6-metre columns, the thickness of the steel door shall be at least 3 mm. The minimum dimensions of the door opening required to allow access for the cabling and fusing of the luminaire only, shall be 400 mm x 104 mm (height x width), and the minimum dimensions of the doors shall be 385 mm x 90 mm.

For 8-metre columns, the thickness of the steel door shall be at least 4 mm. The minimum dimensions of the door opening required to allow access for the cabling and



fusing of the luminaire only, shall be 626 mm x 122 mm (height x width) and the minimum dimensions of the doors shall be 612 mm x 108 mm.

NOTE: For all hinged columns, the dimensions listed above are the minimum dimensions required to allow for access for cabling and fusing the luminaires only. Should the hinge mechanism of all the column types listed above be also required to be accessed from within this base compartment, the door opening must be sufficient in size to allow for above dimension requirements and the additional space required to access the hinge mechanism.

Hinge Locking Mechanism

Hinged columns shall be equipped with a locking facility. Details of the locking mechanism in the proposed columns and a method statement on how to operate the proposed columns must be provided.

Columns must be supplied with any mechanical drop-down device required to lower the columns.

A product ID label shall be fixed inside each column. The label shall identify the manufacturer, the product part code, the year of manufacture and the standard to which the column has been manufactured. A steel identification mark traceable to a material test cert shall also be provided.

7.3 Bracket Arm Details

Where used, bracket arms shall be outreach types only, normally incorporating an uplift of 0 to 5 degrees as required by lighting design and subject to maximum lengths indicated in Table 1 below. The arms shall be removable and of the sleeve fitting type, fabricated from tubular steel and after manufacture shall be basically protected against corrosion by hot dip galvanising complying with BS EN ISO 1461:2009.

Bracket arms and column shafts shall be fitted with a device to prevent rotation of the brackets in service. Eight unobtrusive socket screws shall secure each bracket arm to the column.



7.4 Erection of Columns and Brackets

Luminaires shall generally be installed Post-Top mounted with no tilt, on columns. Brackets shall only be installed with the written agreement of Fingal County Council Public Lighting.

Table 1 Standard Installation Arrangements of Lighting Columns

Mounting Height (m)	Minimum Root Depth*	Standard Setback of Column Face from Front of Kerb	Max. Bracket Length (post-top mounting may be used where appropriate)	Minimum sleeve size Diameter
6 metre	1.0 metre	1.5 metre	1.0 metre	300 mm
8 metre	1.2 metre	2.0 metre	1.5 metre	400 mm
10 metre	1.5 metre	2.5 metre	2.0 metre	450 mm
12 metre	1.7 metre	3.0 metre	2.5 metre	450 mm

*The Developer shall determine from the manufacturer/supplier of the columns if a longer rooting depth is required where bracket and lantern combination is to be used.

IN STANDARD INSTALLATIONS THE INSTALLED COMBINATION OF COLUMN SETBACK AND BRACKET LENGTH SHALL NOMINALLY SUPPORT THE LANTERN DIRECTLY ABOVE THE ROAD KERB.

It is preferable that columns are normally placed in roadside grassed verges at the setback indicated in Table 1 above. Where the width of the verge is less than the preferred setback, the column shall be placed in the back of the verge and the bracket arm length reduced if necessary.

Note: All columns placed in grassed verges shall have a 0.5m concrete surround at ground level to facilitate future maintenance of the grassed area.

In the absence of verges, it is preferable that columns are placed in the back of footpaths. In cases of shared or un-kerbed surfaces the Developer shall make suitable arrangements by way of barriers/bollards or suitably sized kerbed islands to prevent columns being struck accidentally by normal vehicle manoeuvres.

In all situations and having regard to planning practice actual placement of columns shall take due account of clearances necessary to facilitate kerbside vehicle parking, normal use of cycle-ways and footpaths, and undue light trespass onto adjacent property.

Columns shall be erected by planting their root portion in excavations of suitable size and secured as shown in Drawing PL 5/1. The excavated hole must be pumped free of any water before being filled with concrete. Columns shall be erected exactly



vertical in a safe and workmanlike fashion using a crane or suitable hoist. All columns shall be set such that the centre of the column door opening is 1.5 metres above finished road level and normally faced away from oncoming traffic.

Columns shall be secured by uniformly filling the excavated hole around the base of the column with concrete up to the bottom of the cable entry slot. The concrete used shall be in accordance with the Department of the Environment Specification for Road Works, Clause 1502, Concrete for Ancillary Purposes (Class E).

The final one metre of incoming and outgoing cables shall be protected by Hydrodare piping or equivalent extending 300 mm. into the column and kept level with the bottom of the entry slot to avoid cable damage due to column settlement.

7.5 Column Numbering

The lighting layout shall show the numbering sequence on lighting plan. The Council will not issue TMPRNs to Developer/Lighting Contractor until the columns covered by the relevant Completion Certificate are numbered in accordance with the lighting plan and as described below.

Each column shall be numbered using white backing tape wrapped completely around the column at a height of 3 metres above ground with numbers securely affixed to this backing tape and facing the roadway. Number decals shall be white numbers, 75mm high, on a black background.

Painted/Stencilled numbers are not acceptable

7.6 Service-pillars

It is envisaged that two sizes of service pillar may be required depending on the nature of the development; refer to ESB Networks Code of Practice for Customer Interface for most up-to-date requirements.

(a) Residential Service Pillar (Unmetered Supply)

These are usually used in Residential Roads and Local Distributor roads for single-phase supply. The Baseboard shall be adequate to accommodate an ESB Three Phase 80A fused Cut-out, and Isolator if specified by ESB Networks, together with separate Neutral and Earth Terminal link blocks and a maximum of five single phase fuse units, i.e. incoming supply and four outgoing circuits.



Dimensions of unmetered section pillars shall be **215mm deep x 370mm wide x 660mm height above ground level, with a minimum rooting depth of 360mm.**

The minimum ope size shall be 330mm wide x 480mm high. Space on the baseboard shall be assigned as 150mm for ESB equipment, 180mm for FCC equipment.

(b) Road Service Pillar (Metered Supply)

These are usually used for higher wattage PL installations on regional roads and major traffic routes and where a 3-phase supply is required. The ESB metering equipment must be physically separated from PL distribution fuses in a separate compartment of a dual compartment pillar. The Metering compartment must comply with minimum ESB Networks requirements and the PL Distribution compartment sized to accommodate appropriate fuses/isolators and Earthing and Neutral terminals appropriate to the electrical design.

Dimensions of metered section pillars shall be **225mm deep x 500mm wide x 1250mm height above ground level, with a minimum rooting depth of 360mm.**

The minimum ope size in each door opening shall be 465mm wide x 600mm high. The top compartment shall be assigned for ESB Networks equipment, and the bottom compartment shall be assigned for FCC equipment. Each compartment shall have its own door.

In order to avoid possible delays in completion of connections by ESB Networks, Fingal County Council strongly recommends that the Developer, or his PL Contractor, discuss directly with ESB Networks the minimum size of pillar space to be allocated for the fitting of any Networks equipment.

All service pillars shall be fabricated from 3mm. thick sheet steel including the door and extension plates. Extension plates shall be provided at the bottom of the pillar to enable firm cementing into the ground. Ground level shall be clearly marked. Each pillar shall be adequately ventilated by means of a set of louvred slots near the top. Each pillar shall be secured against unauthorised access by a single unhinged flat plate door secured with one or more triangular-head locking bolts.

Each pillar and its door shall be finished for outdoor use by hot dip galvanising in accordance with BS EN ISO 1461:2009. In addition, the extension plates shall be protected below ground by a bituminous coating extending all round to the level of the door recess.



An insulating fireproofed baseboard, approximately 20mm. thick, shall be fitted in each pillar to facilitate mounting of supply cut-out and isolator, link blocks, fuse-units and any other specified equipment. All brass and metal components shall be electro-plated. The pillar shell shall have an earth bonding post.

The service pillars shall be secured by placing concrete complying with Department of the Environment Specification for Road Works, Clause 1502, Concrete for Ancillary Purposes (Class E) around the base of the extension plates. This concrete must not enclose any cables.

7.7 Underground Ducts.

Public lighting installations are powered by looping cables underground in ducts from column to column on their appropriate circuits and terminating in link blocks in the base of each column and service pillar.

ALL DUCTS SHALL BE PLACED OUTSIDE THE BOUNDARIES OF PRIVATE PROPERTY AND MUST NOT AT ANY TIME PASS THROUGH ESB OR TELECOMMS CHAMBERS. THE ONLY DUCT THAT SHALL ENTER AN ESB CHAMBER IS THE LINK DUCT BETWEEN THE ESB NETWORK LT PILLAR AND THE PL SUPPLY POINT PILLAR.

Ducts shall be constructed of High Density Polyethylene (HDPE) pipe to I.S. EN 12201 Class B complying as a minimum with I.S. EN 50626-1:2023 having a 750N load rating for 5% deflection. Cable ducts shall be **RED** in colour and stamped with the legend 'public lighting duct', the initials PL or otherwise identified to clearly distinguish them from other electrical cable ducts.

In residential developments ducts run in verges and footpaths are nominally 50mm diameter.

A spare 50 mm. duct shall be laid across all driveway aprons. Cables shall be run in 100 mm. diameter PVC duct at road crossings. A spare 100mm duct shall also be provided at such crossings.



Ducts shall be laid in fully coupled unbroken lengths at the appropriate depths to achieve the minimum buried depths of NYCY or SWA cable in HDPE pipe as specified in the following documents:

- Code of Practice for Avoiding Danger from Underground Services published by the Health and Safety Authority
- Guidelines for Managing Openings in Public Roads 2017, most current edition as issued by the Department of Transport, Tourism and Sport.
- I.S. 10101:2020 National Rules for Electrical Installations, Edition 5.0; including all Amendments or Supplements, published by the National Standards Authority of Ireland.

In all situations an Electrical Hazard warning tape, as per IS 10101:2020, shall be laid at the appropriate depth directly above the cable duct.

Ducting shall be laid in a bed of sand and surrounded by sand. The compacted thickness of sand above and below the duct shall be a minimum of 50mm. and at each side of the duct 25mm. The remainder of the trench shall be backfilled to ground level using selected material free of any larger or sharp stones greater in size than 50mm.

A Supply Point Duct Completion form shall be submitted with each Safe Electric Completion Certificate relating to a new supply connection for each PL Supply Point Pillar; otherwise Fingal County Council will not process the connection order and will return the Completion Certificate(s) to the Developer/Contractor.

7.8 Cable Access and Inspection Draw Chambers

Access and inspection chambers shall consist of a 100 mm deep concrete foundation base, 225 mm thick concrete blocks laid flat, with ducts continuing through the blockwork to slightly inside the chamber. It shall be complete with cable chamber frame/cover to finished pavement surface level.

Cable chamber frames and covers shall be ductile iron with a galvanized steel frame and shall conform to the following classifications to EN 124 grade:

- B125 – Footways, pedestrian and comparable areas, car parks
- C250 – Kerbside and verges
- D400 – Carriageways, parking areas and shared surfaces for vehicles and pedestrians



Chamber frames and covers shall be obtained from Cavanagh Foundry or approved equal and shall be certified by an accredited Third party. The cover shall be stamped 'Public Lighting'.

The covers shall be retained in position by a stainless steel bolt 'Allen Key' type M16 stainless steel locking bolt head. Locks shall make provision for the replacement of bolt and nut if damaged. Tapping of frames is not permitted.

Cable access and inspection chambers shall generally be JB2 type access chambers. In some installations, an alternative size chambers may be required to be installed.

(a) JB1 Type Chambers (Small Inspection Chamber)

Chambers with access cover located on footpaths for access to wall mounted lights at the base of buildings, road crossings and changes in duct direction shall have a frame opening of 385 mm x 260 mm.

(b) JB2 Type Chambers (Medium Inspection Chamber)

Chambers with access cover located on footpaths for road crossings, changes in duct direction, and straight through services (long routes), shall have a frame opening of 720 mm x 260 mm.

(c) JB3 Type Chambers (Large Inspection Chamber)

Chambers with access cover located on footpaths for road crossings, changes in duct direction, and straight through services (long routes), where the quantity of cables require a larger size access chamber, shall have a frame opening of 615 mm x 615 mm.

(d) JB4 Type Chambers (Very Large Inspection Chamber)

Chambers with access cover located on footpaths for road crossings, changes in duct direction, and straight through services (long routes), where the quantity of cables require a larger size access chamber, shall have a frame opening of 720 mm x 520 mm.

7.9 Underground Cables

Underground cables shall preferably be NYCY complying with DIN VDE 0271, or alternatively PVC/SWA/PVC to BS 6346 subject to the written approval of the PLS. Where SWA-type cable is used, the cable shall include a Protective Conductor core and at each column/pillar the steel armour shall be clamped onto suitable collars and bonded to the earth block via a 10-sq. mm. copper earth wire.



For standard residential installations single-phase circuits will normally be used and cables will normally be 2x6-sq. mm. NYCY type. On major distributor roads, conductor size may be larger and 4/5 core cable may be specified to utilise a three-phase supply; verge/footpath duct size may also be increased to 100mm and such requirements will be shown on the Council's Public Lighting Plan.

Cable joints are not permitted in any new development. Cables shall be looped from column to column on each circuit. If faults develop on service cables before commissioning/taking in charge of the development, the section of cable involved shall be replaced and not jointed. Where existing lighting cables are affected by a new development prior agreement must be made with the Council on any modifications. In rare situations where cable joints are allowed, only resin based cable joint kits such as 3M or Scotch-Cast are to be used. Heat shrink joints are not permitted.

7.10 Earthing and Bonding

A hot dip galvanised-steel earth rod at least 16 mm. in diameter shall be driven vertically into the ground to a minimum depth of 1200mm. adjacent to each service pillar. Earth rods shall be installed with a suitable inspection box allowing access to the earth conductor connection to the rod. An insulated 10 sq.mm. stranded copper earthing conductor shall be connected through a short length of duct between the Main Earthing Terminal in the Service Pillar and the earth rod. The ends of this duct shall enter both the inspection box and the Service Pillar.

In all columns and pillars metalwork shall be bonded to the earth terminal via a 10 sq. mm. stranded copper conductor fitted with a crimped lug for attachment to the bonding post.

7.11 Luminaires

Only LED luminaires shall be used on public lighting installations. **The use of ground floodlights, recessed up-lighter luminaires and bollard lighting is not permitted.**

LED luminaires which are not manufactured by the above may also be used in new installations but must comply with the specifications of the framework-available on request. The Developer must submit data for the proposed fittings on the LED Data Form included with this document.

Each lantern shall be fitted with a 7 pin NEMA-type socket for mounting of a Photoelectric Control Unit (PECU) unless otherwise directed by the Engineer. The socket shall be fitted with a watertight gasket and secured by 4 non-corrodible screws



that shall maintain the IP rating of the canopy. The NEMA socket shall be wired to the lantern control circuit.

7.12 Light Level Control

All luminaires shall be programmed with Constant Light Output (CLO) as standard and shall be dimmed to 75% CLO output between mid-night and 6.00 a.m.

7.13 Switching Control

Standard switching control of public lighting systems is achieved by means of electronic photocells which operate from dusk to dawn, based on 35/18 lux trigger level. The Council may specifically indicate a requirement for a different trigger level and remotely monitored units as part of its programme for energy management and fault monitoring.

An individual solid-state one-part Photo-Electric Control Unit, PECU, which shall include a “fail safe” circuit that switches the lantern on in the event of photocell failure, shall control each lantern. The PECU must comply with BS 5972 and shall incorporate a phototransistor complying with I.S. 428: 1991 as the light sensor. The unit shall have a guaranteed manufacturer’s **warranty period of at least 8 years**. The PECU shall be designed for mounting in the NEMA socket provided on each lantern housing. A test switch shall be provided in the base compartment of each column for daytime testing by short-circuiting the photoelectric cell.

7.14 Main Circuit Fuses

Main circuit fuse units shall be mounted on the baseboard in the Service Pillars. They shall be of the HRC cut-out type complying with the latest version of B.S.88. Fuse bases shall be sized to accept termination of the full incoming/outgoing conductor cross-section. The Fuse Links shall be appropriately rated for the cable size and loading of the relevant circuit.

7.15 Link Blocks

Link blocks are used for the termination of all conductors of underground cables in columns and shall also be used as the Main Earth/Neutral Terminals in all columns and pillars. Link blocks shall be BICC 63 Amp type, or approved equivalent. They shall be fully insulated and securely fixed with brass woodscrews to the column and service pillar baseboards. The holes in the cable termination block shall have a serrated inner surface for good conductor contact and the metal block shall be positively retained within its insulated base when the cover is removed. In addition, the link block cover shall have a retaining strap to prevent the cover falling into the root of the column.



7.16 Column Baseboard Electrical Components (Ref. Drawing PL 10A)

All electrical equipment located in the column baseboard compartment shall have at least the degree of protection IP33, either by construction or installation, as required by I.S. 10101:2020. All equipment shall be securely mounted with brass woodscrews.

The equipment shall normally include:

- Termination Blocks/Cut-outs for underground supply cables and earthing.
- 1-phase fuse unit for the column control circuit.
- Test Switch to enable bypassing of Photocell.

The equipment shall be arranged as per one of the following appropriate options.

(a) **6 metre columns** (Single phase system)

Three possible arrangements of equipment are acceptable

(1) Incoming and outgoing cables may be terminated in **three** 63 Amp BICC type link blocks as described above, being assigned to Phase, Neutral and Earth/Screen. and

A separately mounted column fuse unit suitable for a BS88 fuse or a Neozed fuse to DIN VDE 0636, rated 6 Amps.

and

A separately mounted architrave-type switch for bypassing the PECU.

or

(2) Incoming and outgoing cables may be terminated in a suitable single phase Street Lighting Cut-out, e.g. Lucy MC040SLE, or equivalent to comply with BS 7654 as agreed with in advance with Fingal County Council, incorporating **three terminals**, being assigned to Phase, Neutral and Earth/Screen, and including an integral column fuse unit suitable for a BS88 fuse or a Neozed fuse to DIN VDE 0636, rated 6 Amps. and



A separately mounted architrave-type switch for bypassing the PECU.

or

- (3) Incoming and outgoing cables may be terminated in **three** 63 Amp BICC type link blocks as described in (a) above, being assigned to Phase, Neutral and Earth/Screen.

and

An enclosure of heavy-duty plastic incorporating a fuse unit, test switch and earth and neutral terminals as detailed in (b) below.

(b) 8m/10m columns (Single and Three phase systems)

Incoming and outgoing cables shall be terminated in **three/five** 63 Amp BICC type link blocks as described above, with one block per phase, Neutral and Earth/Screen.

and

An enclosure of heavy-duty plastic rated IP 54, such as Hager C303U/PLU or approved equivalent, shall be provided for the fuse and test switch. This unit shall be sized to accommodate three 17.5mm wide modular units and shall house the following items: -

- Isolating Fuse Carrier with 6A fuse to BS 88. e.g. Hager L501 or equivalent.
- Photocell Test Switch. e.g. Hager NI16 or equivalent.
- A DIN-rail mounted Earth Terminal sized for 10 sq.mm.
- A DIN-rail mounted Neutral Terminal sized for 10sq.mm.
- Any unused ways shall be blanked off.

The fuse and switch shall be clearly identified with a permanently fixed engraved "Traffolite" label.

Cable entry to the enclosure shall be via PG glands, or equivalent, which shall maintain the IP54 rating of the enclosure.



7.17 Column Internal Cabling

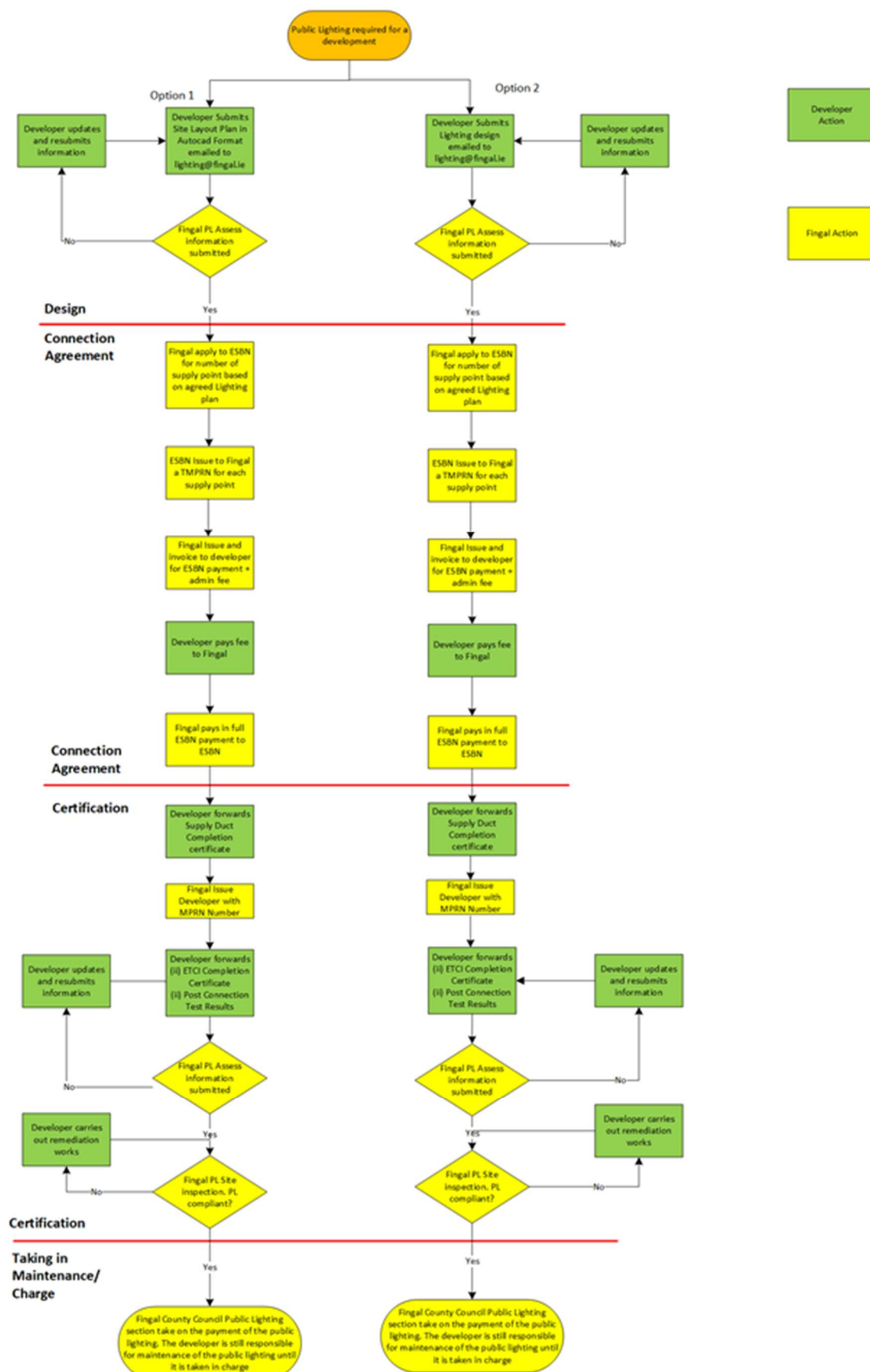
The earth continuity conductor for the lantern shall be 2.5 sq.mm. PVC single core stranded copper conductor coloured in accordance with I.S. 10101:2020. All other circuit cables shall be 2.5 sq.mm. PVC/PVC single core cable with stranded copper conductors. Alternatively, a single 4-core Heavy Duty PVC/PVC flexible cable with 2.5 sq.mm stranded copper conductors may be utilised.



APPENDIX A – PUBLIC LIGHTING FLOWCHART



Public Lighting (PL) Flowchart





APPENDIX B – SPECIFICATION FOR LED LUMINAIRES

The proposed luminaires must comply with the following specification and requirements.

B.1 Standards

The LED luminaire shall comply with the following standards. As well as complying with the current requirements of IS EN 60598-2-3, the luminaires and components shall also comply with the requirements of the current edition of the following standards or equivalent where relevant:

Standard	Title
General	
EN 62504:2014+ A1:2018	General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions
Product electrical safety standards	
EN 60598-1:2015+A1:2018	Luminaires – Part 1: General requirements and tests
EN 60598-2-3:2003+A1:2011	Luminaires – Part 2-3: Particular requirements for road and street lighting
EN 60838-2-2:2006 + A1:2012	Miscellaneous lampholders. Part 2-2: Particular requirements. Connectors for LED modules
EN IEC 62031:2020/A11:2021	LED modules for general lighting. Safety specifications.
EN 61347-2-13:2014 + A1:2017	Lamp controlgear – Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
Photobiological safety standards	
EN 62471:2008	Photobiological safety of lamps and lamp systems
Electromagnetic compatibility	
EN IEC 55015:2019/A11:2020	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547:2009	Equipment for general lighting purposes – EMC immunity requirements
Product performance standards	
EN IEC 62384:2020	DC or AC supplied electronic control gear for LED modules. Performance requirements
IEC 62386-101:2022	Digital Addressable Lighting Interface – Part 101: General requirements - System Components
IEC 62386-102:2022	Digital Addressable Lighting Interface Part 102: General requirements - Control gear
EN IEC 62386-207:2018	Digital Addressable Lighting Interface – Part 207: Particular requirements for control gear. LED modules (device type 6)



EN 62707-1:2014	LED. Binning. Part 1: General requirements and white colour grid
EN 62717:2017 +A2:2019	LED modules for general lighting. Performance requirements
EN 62722-2-1:2016	Luminaire performance – Part 2-1: Particular requirements for LED luminaires
EN 61643-11:2012 + A11:2018	Low-Voltage Surge Protective Devices - Part 11: Surge protective devices connected to low-voltage power systems - requirements and test methods

B.2 Luminaires – Body and General

1. Luminaires shall be manufactured in accordance with the European Directive on Waste Electrical and Electronic Equipment.
2. The luminaire shall be purpose-built for LED light sources and not a retro-fit product. Luminaires originally designed for non-LED sources will not be accepted.
3. Luminaires shall be supplied completely assembled and ready for use.
4. The luminaire shall be designed and constructed to operate in Irish climatic conditions in an ambient temperature of -15°C to +30°C for a minimum period of 20 years.
5. The luminaires are required for operation on an ESB Networks supply, which is declared at 230 volts $\pm 10\%$, i.e. from 207 volts to 253 volts, at 50 Hertz.
6. The power factor shall be a minimum of 0.92.
7. The luminaires shall be fitted with surge protection in accordance with EN 61643-11:2012 & A11: 2018 and be rated 10kA/10kV. The surge protection shall be the first component encountered in the circuit to ensure protection for all components within the luminaire.
8. The luminaire shall be of the Constant Light Output type.
9. The rated input power and the total circuit wattage, in Watts, of the complete luminaire (including LEDs and LED Driver), shall be stated.
10. The luminaire loom shall be a flexible cable to BS 8436, such as the H07RN cable, or H05VV-F cable or approved equivalent. The loom size shall be 5 x 1.5 mm² for all column heights.
11. The luminaires shall be classified into a Risk Group in accordance with EN 62471:2008 – Photobiological Safety of Lamps and Lamp Systems. This risk group classification is to be advised by the supplier.
12. The luminaires shall bear the CE marking, awarded by an EU based certifying body.



13. The luminaire body shall be manufactured from die-cast aluminium. The luminaires shall be supplied in a painted finish. Thermoplastic or Thermoset Powder coating over the luminaire is acceptable.
14. All grub screws, hinges, toggle catches, captive screws and nuts shall be made of non-corrosive metal material.
15. The complete luminaire shall be rated at least IP65.
16. The luminaire shall have an impact resistance rating to IK08 minimum on the complete luminaire, including on the luminaire body and on the LED module protectors.
17. The spigot entry shall be die-cast aluminium alloy.
18. The light output ratio of the luminaire shall be greater than 90% with an Upward Light Output Ratio of no more than 0.5%.
19. The maximum weight of the luminaire shall be 8.5 kg for mounting on columns up to 6-metre height above ground. For columns of 8-metre height above ground, or greater, the maximum weight of the luminaire shall be 11.5 kg.
20. The maximum windage the luminaire is designed to shall be provided.
21. The Installed Luminous Intensity Class for the restriction of Disability Glare for the luminaire shall be as follows:
 - a) For standard residential roads and pedestrian walkways, the luminaire shall have an Installed Luminous Intensity Class for the restriction of Disability Glare of at least G1.
 - b) For access roads and distributor roads, the luminaire shall have an Installed Luminous Intensity Class for the restriction of Disability Glare of at least G3.
 - c) For main traffic routes and conflict areas, the luminaire shall have an Installed Luminous Intensity Class for the restriction of Disability Glare of G4, G5 or G6, as advised by the PLS.
22. All wiring shall be heat resistant and comply with IS EN 60598 or equivalent.
23. Details on the Thermal management design of the luminaire and how the luminaire transfers heat away from the LEDs shall be provided. **Note:** Active cooling systems utilising fans are not permitted.



B.3 Led Modules

1. The LED modules shall be manufactured by Nichia, Cree, Philips Lumileds or approved equivalent.
2. The LED modules must be neutral white with a Correlated Colour Temperature (CCT) of approximately 4000K as standard and a Colour Rendering Index (CRI) of at least 70 ($R_a \geq 70$).
3. The bin class of the LEDs used shall be within a 5-step macadam ellipse.
4. Lumen Depreciation information and failure rates at the declared L80 rated life (i.e. L80B50 and L80B10) shall be provided.
5. The initial lumen output of the luminaire at the proposed driver current shall be provided (in Lumens).
6. The maintained lumen output of the luminaire at 6,000 hours at the proposed driver current shall be provided (in Lumens).
7. The minimum lighting luminous efficacy of the complete luminaire at the proposed driver current shall be provided (in Lumens/Watt). Note: the luminous efficacy of the LED chip only will not be accepted. It must be given for the complete luminaire.
8. Suppliers shall state the operating temperature, the LED junction temperature and the maximum maintained LED junction temperature for all driver currents proposed for an ambient temperature of 20°C.

B.4 Photocell Control

1. Switching of public lighting shall be via a seven-prong twist lock NEMA socket with a photo-electronic switch such as Westire PC Acro photocell or the Lucy Zodion Super 6 photocell or approved equal, or, a miniature photocell to Zhaga Book 18 protocol such as the Lucy Zodion Precizion Halo, or approved equal that provides the same functionality of a seven-prong NEMA socket, integrated into the LED luminaire. Each luminaire shall be individually controlled by the photocells.

The socket/photocell shall be sealed with a weatherproof gasket and secured to the luminaire body by non-corrosive fixing screws. The photocells used must comply with the latest version of BS 5972.

2. The photocell switching shall be 35 lux on and have a 1:0.5 switching differential (i.e. 35 lux on / 18 lux off).
3. Details of the photocells shall be provided.



B.5 Led Driver

1. The type of LED Driver (e.g. Philips Xitanium LED Driver or approved equivalent) used in the proposed luminaire must be stated. All gear must be integrally mounted inside the luminaire.
2. The drivers shall be of the Constant Light Output type (CLO). The CLO value shall be 75% of the initial lumen output.
3. The driver current shall be a maximum of 1A.
4. The LED Driver shall be programmable and allow for dimming of the luminaire. It shall also have Dual Direction Communication in DALI protocols to allow for future remote monitoring of the installation.
5. The LED Driver shall be pre-programmed with the following dimming profile as standard:
 - Dusk to Midnight - 100% of CLO output
 - Midnight to 6.00 am - 75% of CLO output
 - 6.00 am Dawn - 100% of CLO output
6. The average wattage of the complete luminaire over one (1) year and over lifetime shall be provided and shall be based on the CLO and the pre-set dimming regime.
7. The LED Driver shall be enabled for use with a Central Management System (CMS) with **the data cable pre-wired**.
8. The luminaires must be fully compatible with a CMS system such as the Urbis Exedra, Signify InteractCity, or approved equivalent as advised by Public Lighting Services, that allows for full reporting, diagnostics and dimming functions.
9. The power factor used shall be provided. A power factor of 0.92 minimum is required.
10. The rated life of the proposed LED Driver shall be provided.

B.6 Photometric Data

1. The absolute photometric data indicating the optic setting and proposed driver current of the proposed luminaire must be provided. The data shall be supplied in electronic format (.ies / .cib / .ldt / .eul or equivalent) either by email or USB keys. Note all files must be clearly labelled.



B.7 Testing and Certification

1. All testing of the luminaire, LED modules and LED Driver to be carried out by an independently accredited test laboratory, located within the European Union.
2. The Certificate of Compliance of CE testing and marking of the complete luminaire (including LED modules and LED Driver) shall be provided. The CE marking must be awarded by an EU based certifying body.
3. A Declaration of Performance for the luminaire, in addition to CE marking, shall also be provided.
4. Suppliers shall have available to them full details and certificates of all testing carried out and these must be provided on request. Details and certificates of testing shall include but is not limited to:
 - IES LM-79-08 test report for the luminaire.
 - IES TM-21-11 report for the luminaire with LM-80 chip data and in situ temperature measurement test data, and shall clearly indicate the lumen maintenance after the test time expressed as a percentage of the initial lumen output, and the calculated and reported L80 values (in hours).
 - IES LM-80-08 test report for the LED chip to validate the data entered into the TM-21 report.
 - All Thermal Tests carried out on the luminaire and LED modules, including LED junction temperature testing and In-Situ Temperature Measurement Test (ISTMT) Report to validate ISTMT data entered into the TM-21 report.

B.8 Documentation Required

The contractor must supply the following information:

- Full technical details and product data sheets for the proposed luminaire, LED modules, LED Driver, and photocell.
- Details of the thermal management of the proposed luminaire.
- Details of warranties on the complete luminaire and how those warranties will transfer to Fingal County Council Public Lighting upon completion of the process to take in charge the public lighting within the development.
- LED Luminaire Technical Details data sheet (Form 1 in Appendix C of the specification) with the details listed.
- Certificate of Compliance of CE Testing and Marking and Declaration of Performance.
- Full details and certificates of all testing carried out on the proposed luminaire and LED modules at an ambient temperature of 20°C, as listed under Section B.7 of this appendix, shall be provided on request.

B.9 Warranty Period

Luminaires shall have a product warranty of eight (8) years minimum, as standard. This shall cover all luminaire components, inclusive of electronics, drivers, photocells, finishes, etc.



APPENDIX C – LED LUMINAIRE TECHNICAL DETAILS SHEET



FORM 1 - LED Luminaire Technical Details

Product Details		
Luminaire Manufacturer, Make & Model:		
Luminaire Product Order Code		
LED Module Manufacturer, Make & Model		
No. LEDs in Luminaire		
LED Driver Manufacturer, Make & Model		
Proposed Driver Current (mA)		
Maximum Driver Current (mA)		
CMS Enabled (Yes/No)		
Details of Electronic Photocell used Please state which of the following is proposed: • 7-prong NEMA socket with electronic photocell • Mini-Photocell to Zhaga Book 18 Protocol, with same functionality as 7-prong NEMA Socket (All photocells shall have 35/18 lux switching levels)		
Photocell Manufacturer, Make & Model		
Number of Burn Hours between Dusk and Dawn, at latitude and longitude for Dublin, based on 35/18 lux switching levels	4031	
Number of Burn Hours between Midnight and 6.00 am, at latitude and longitude for Dublin, based on 35/18 lux switching levels	1695	
Description	Value	Unit
Constant Light Output (CLO) Total Circuit Watts of complete luminaire (LEDs & Driver), CLO at 75% of initial lumen output. Also note that Circuits Watts shall take into account 35/18 lux switch on/off levels of integrated photocell.		W
Actual Maintenance Factor (based on Constant Light Output @ 75% of initial lumen output, 80,000 hrs life, and a 6-year cleaning cycle)		
Luminaire Outreach (distance to centre of optic from back of fitting)		
Spigot Sizes: Side entry (32 mm x 76 mm long - 42 mm x 100 mm long for P4 Class, 42 mm x 100 mm long – 60 mm x 115 mm long for P2 Classes and above) Post-top entry (60 mm – 76 mm x 115 mm long) Adaptors used? (Y/N)		mm mm
Angles of Tilt Available Adaptors used? (Y/N)		Degrees (°)



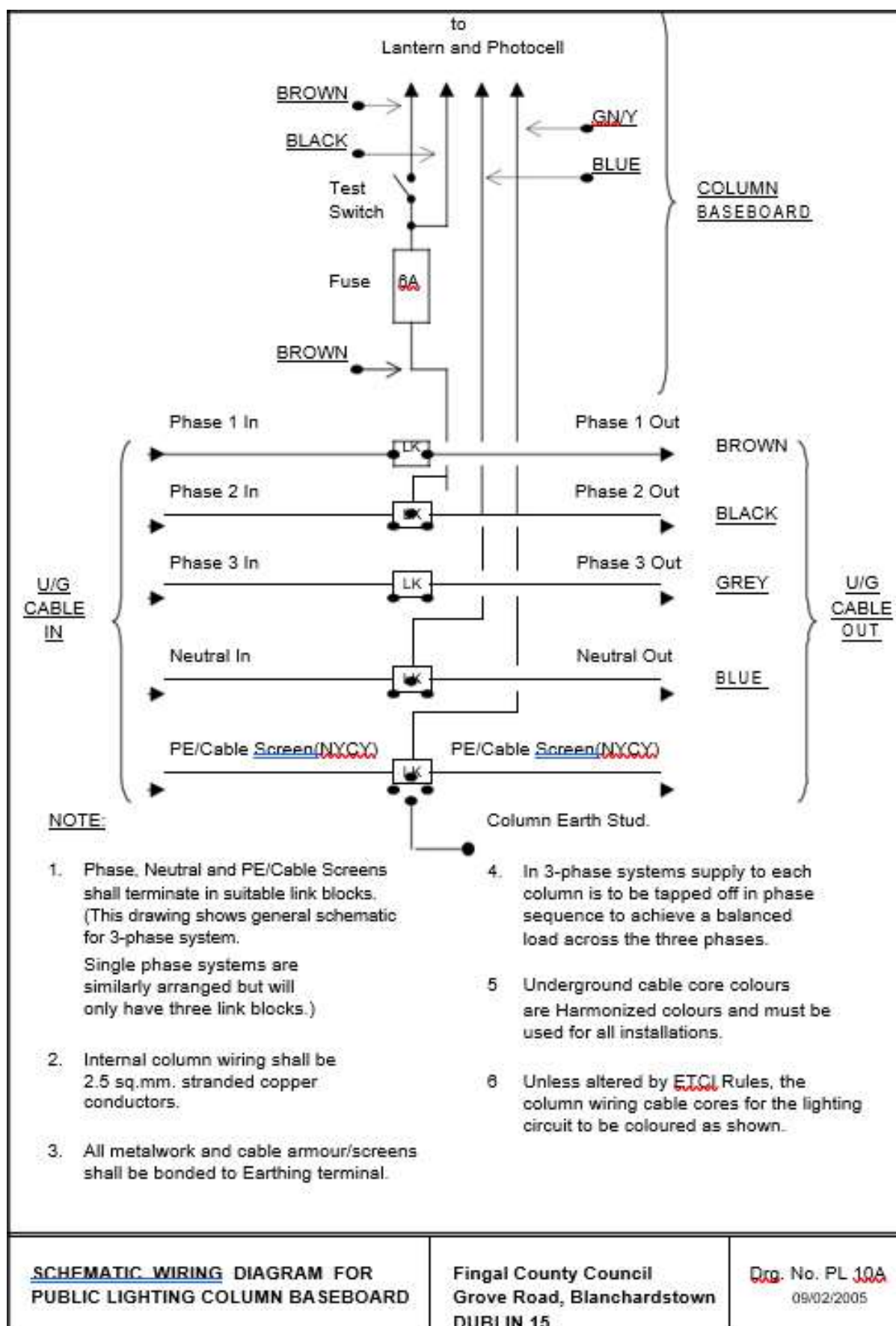
Description	Value	Unit
Weight of complete luminaire (Max 15 kg)		kg
Maximum Windage of luminaire		m ²
IP Rating – Complete Luminaire (Min IP65)		
Impact Resistance Rating (IK Rating) of luminaire (body & optic) (Min IK08)		
Luminaire Design Life (Min 20 years)		years
Rated Life of LED Driver (Min 10 years)		years
Risk Group Classification in accordance with EN 62471		
Rated Input Power (LM-79 Report)		W
Operating Voltage Range (230V ±10% (207V-253V), at 50 Hertz)		V
Power Factor – (Min 0.92) (LM-79 Report)		
Surge Protection Rating (as per IEC 61643-11) (10kA/10kV)		
Ambient temperature Range (Ta) luminaire is designed to operate in (Min -15°C - +30°C)		°C
Upward Light Output Ratio (ULOR) (Max 0.5%)		%
Disability Glare Class (G Class)		
Luminous efficacy of Complete Luminaire at 100% initial lumen output (LM-79 Report)		Lm/W
Correlated Colour Temperature (CCT) (Neutral White, approx. 4000K) (LM-79 Report) (Max range 3700K-4300K)		K
Colour Rendering Index (CRI) (Ra value, Ra ≥ 60) (LM-79 Report)		
LED Colour Stability (Bin Class) (LM-79 Report) (Max 5-Step Ellipse)		Step Ellipse
Initial Lumen Output of the luminaire (LM-79 Report)		Lumens
% Maintained Lumen Output of the luminaire @ 6,000 hours (TM-21 report)		%
Lamp Lumen Maintenance Factor (LLMF) (i.e. Lx)		
Lamp Survival Factor (LSF) (i.e. Fy)		
LxB ₅₀ at 80,000 hours (TM-21 report)		Hours
LxB ₁₀ at 80,000 hours (TM-21 report)		Hours
Operating temperature for proposed driver currents at an ambient temperature of 20°C.		
LED junction temperature for proposed driver currents at an ambient temperature of 20°C.		
Maximum maintained LED junction temperature for proposed driver currents at an ambient temperature of 20°C.		

PL Designer/Contractor: _____

PL Designer/Contractor's Signature: _____ Date: _____



APPENDIX D – SCHEMATIC WIRING DIAGRAM FOR PUBLIC LIGHTING COLUMN BASEBOARD





APPENDIX E – DRAWINGS



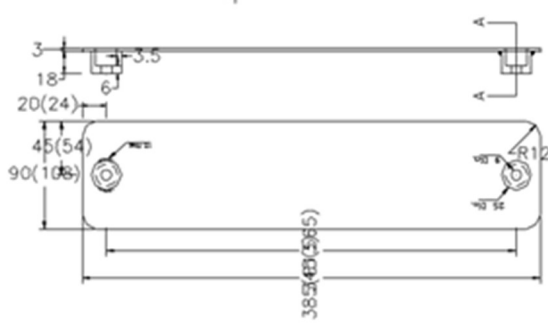
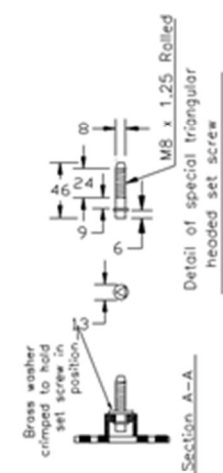
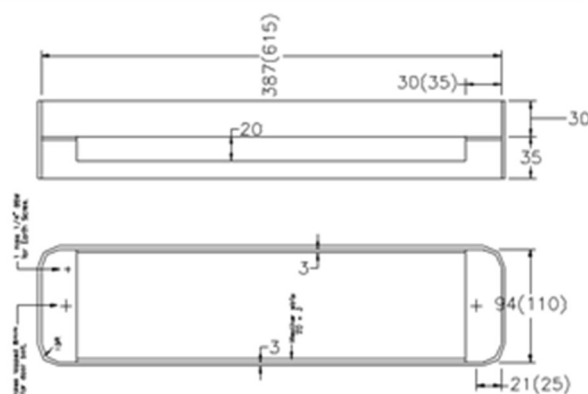
E.1 Column Door

REV	DESCRIPTION	DATE

NOTES

GENERAL

- (1) ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
(2) FIGURED DIMENSIONS ONLY-DO NOT SCALE.



Materials
Cover plate mild/steel galvanised.
Set screw stainless steel.
Retaining washers brass.
Finished dimensions of door shall include galvanised coating or equivalent.
Dimensions in brackets relate to 12m, 10m, & 8m columns only. All other dimensions are common to both sizes.

COMHAIRLE CHONTAE FHINE GALL
FINGAL COUNTY COUNCIL

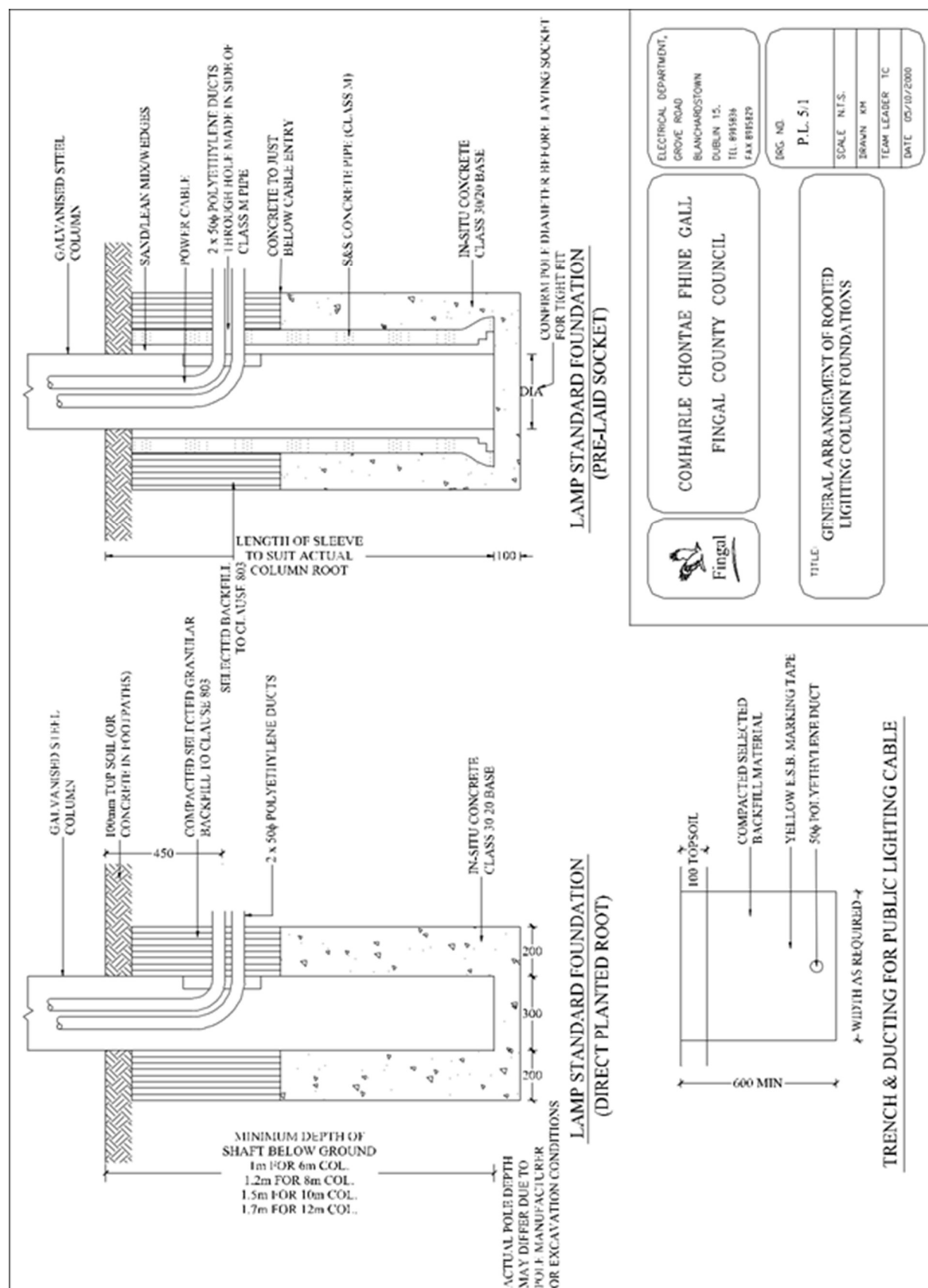
SECTION: EXTERNAL
DOOR: 800
BLANCHARDSON
TEL: 800838
FAX: 800829

DRG. NO.:
FL 1/2
REV. NO.:
SCALE: N.T.S.
DRAWN BY:
TEAM LEADER: AC
DATE: 27/04/2020

TRIG.
DOOR AND FRAME DETAILS FOR 12M, 10M,
8M & 6M LIGHTING COLUMNS.



E.2 Sleeve Detail





APPENDIX F –SUPPLY POINT DUCT COMPLETION FORM



FORM 2 - Supply Point Duct Completion Form

To: - Public Lighting Section

Operations Department

Fingal County Council

SUPPLY POINT DUCT COMPLETION FORM

Safe Electric Completion Cert Number: _____ Date: _____

Link Duct from ESB LT Pillar to Supply Point Pillar is complete, clear of obstruction and roped.

Signed: _____

Company: _____

NOTE:

'Complete' means duct is properly coupled into a continuous run, is clear and roped, with the mouth at each end of the run entered into the pillars.

Comment/Instructions:



APPENDIX G – MARKING OUT PROCEDURES

Before commencement of the marking out of the public lighting column locations on site, the developer must have completed enough of the civil works to enable the public lighting contractor (hereafter called the PL contractor) to get exact locations for the columns. This will ensure that the following can be achieved:

- The correct spacing for the columns;
- The correct setbacks for the columns; and
- The correct depth for the columns.

At a minimum, the developer shall have provided kerb lines to allow the correct setback for the columns to be obtained. In addition, the road surface shall be completed, so that the final depth of the columns, i.e. 1.3 metres from finished ground level to the bottom of the lighting column door, can be obtained. This will ensure that the correct mounting height for the luminaires will be achieved, with respect to the finished road surface level.

It is the developer's responsibility to ensure that the installation is installed in accordance with the design.

A combination of yellow agent paint on the kerb and stakes marked 'Public Lighting' shall be used to identify exact column positions. The paint is necessary to take into account of any stakes that may have been inadvertently moved.

Before marking out column positions, the PL contractor shall make sure that there are no overhead cables or obstructions that could prevent columns from being installed as required. The PL Contractor shall also check that at the proposed setbacks there is adequate and safe access to the columns for maintenance after they have been installed. Assuming all is in order, the following method of marking-up is suggested:

The PL contractor shall tentatively mark out the lighting column locations at the junctions first. This is probably best done by a yellow spot of paint on the kerb line at each column location.

- Using a measuring wheel, the PL contractor shall then measure the straight-line distance along the line of the Luminaires – usually the kerb line – from junction to junction. The PL contractor shall then equally space the columns along the straight line between those junctions. This spacing shall correspond with the design spacing on the drawing. Having tentatively marked out all the column positions on the junctions and the columns between the junctions, the PL contractor shall do a final check to verify that each column can be installed at its correct setback at that location.
- The PL contractor shall then place a stake at each proposed lighting location. This stake shall mark the exact location of the vertical centre-line of the column. Where column sleeves are being installed, it shall mark the centre line of the sleeve location.
- Finally, the tentative yellow spots shall be replaced with "PL" as appropriate, i.e. bigger markings.



APPENDIX H – INSPECTION SHEETS

FORM 3 - Inspection Sheet - Civil

Location: _____

Public Lighting Contractor: _____

Public Lighting Contractor's Representative: _____

Public Lighting Contractor's Signature: _____

Date: _____

Note: If the answer to any of the questions below is no, state why with reasons in the comments section

Column Number	Is the column located in accordance with the design and with correct setback? (Yes / No)	Is the column foundation in accordance with Fingal County Council's specification? (Yes / No)	Is the height from ground level to the bottom of the door opening 1300 mm? (Yes / No)	Does the column door face the direction of traffic? (Yes / No)	Is the vertical alignment of the column along the road and directly facing it from the kerb in accordance with Fingal County Council's specification? (Yes / No)

Comments

e.g. Approved Deviations From Specification



FORM 4 - Inspection Sheet - Electrical

Location: _____

Public Lighting Contractor: _____

Public Lighting Contractor's Representative: _____

Public Lighting Contractor's Signature: _____

Date: _____

Note: If the answer to any of the questions below is no, state why with reasons in the comments section

Column number	Is the proper cut-out (e.g. Lucy Zodian) installed, with correct-size column fuse? (Yes / No)	Are circuit cables in and out of column the correct size and type? (Yes / No)	Are circuit cables correctly installed, glanded and terminated? (Yes / No)	Is column properly earthed and bonded in accordance with Fingal County Council specification? (Yes / No)	Is Luminaire type and rating in accordance with design? (Yes / No)

Public lighting section pillar location	Is the section pillar fitted out in accordance with Fingal County Council specification? (Yes / No)	Are circuit cables in and out of section pillar the correct size and type? (Yes / No)	Are the circuit cables correctly glanded and terminated? (Yes / No)	Is the earth rod correctly installed? (Yes / No)	Is the section pillar properly earthed and bonded in accordance with Fingal County Council specification? (Yes / No)



Comments

--



APPENDIX I – LIGHTING COLUMN DESIGN COMPLIANCE SHEET

FORM 5 - Lighting Column Design Compliance Sheet

State Column Type (Conical, Stepped Tubular etc.)	
--	--

Data	Requirements to be completed by Column Manufacturer	Yes / No?	Supplied Value(s) by Column Manufacturer (Where Applicable)
EN 40	Do the Columns Comply with EN 40?		
Spec	Do the Columns Comply with the specification?		n/a
Design Life: (Years)	Do the Columns have a design life of 30 years?		n/a
Terrain Category: (I-IV)	Do the columns meet the required Terrain Category for the locations proposed (Terrain Category II etc.)?		
Wind Speed: (Vref-m/s)	Does the recorded 10 min mean wind velocity (not hourly) comply with Irish Government Department Guidance (Vref 31m/s RWF587)?		
Door Size	Does calculation data correctly reflect column specification for proposed door size?		
Banners	Have column structural calculations taken into account the banner size proposed in the specification (2.3m high x 0.75m wide at 3.4m above ground level)?		
Signs	Have column structural calculations taken into account the Sign size and orientation in the specification?		
Bracket Length	Have bracket lengths and weights been included in structural calculations for the column as stated in the specification?		
Luminaire Data	Have the correct luminaire values for windage been used in the calculations as stated in the specification?		
Height Above Ground	Not Applicable		
Material Strength	Has the correct material strength been used in calculations? Note that column material strengths as laid down in the EN 1999-1-1:2007 that MUST be adhered to.		

Signed: _____

Date: _____

Company Name: _____



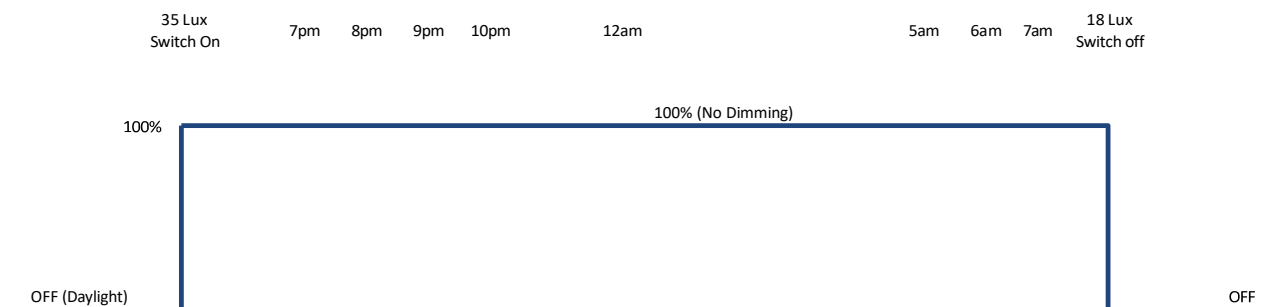
APPENDIX J – DIMMING PROFILES

Several unmetered dimming profiles for use with LED luminaires, named U13 to U23 inclusive, have been agreed with ESB Networks. The unmetered dimming profiles generally used by Fingal County Council Public Lighting are illustrated below:

Dusk to Dawn with Extra Trimming

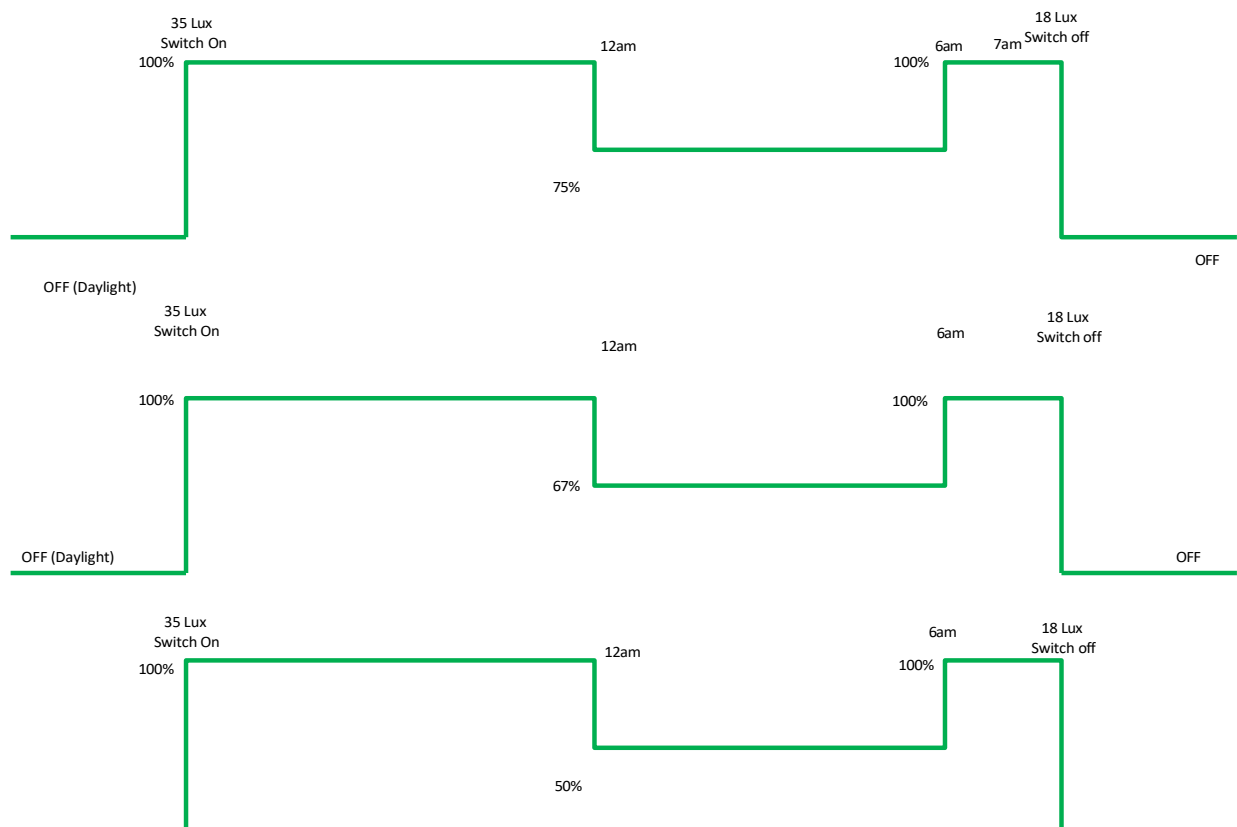
(Note: Extra Trimming refers to 35/18 Lux switch on/switch off levels)

Profile U13



1 Step Dimming – Dusk to Dawn with Extra Trimming and % dimming as detailed below between midnight and 06.00 hrs

Profiles U14, U15 & U16





OFF (Daylight)

OFF



APPENDIX K – REQUIRED LIGHTING INSTALLATION DETAILS

(INCLUDING ELECTRICITY SUPPLY, ESB NETWORKS and CERTIFICATION REQUIREMENTS)

Full details of what must be provided on the as-constructed drawings and in the supporting documentation are as detailed in Chapter 4 of this Specification.

The following form, (Form 2), must be completed for all lights and section pillars in the lighting scheme and must be submitted in Microsoft EXCEL format.



FORM 6 - Required Lighting Installation Details

SP1 = Section Pillar 1, P1 = Column / Light Standard 1 etc.					
Item No	FCC Field Name	Description	SP1	P1	etc.
1	Equipment Number	Automatically generated by FCC Asset Management Database			
2	Street	Street name			
3	Unit Number	Unit number (To match the numbering of the columns on site) The numbering sequence on site must match the numbering sequence on the approved PL drawings			
4	Location	Location Outside			
		Location Opposite			
		Location At (e.g. at road junction)			
5	Unit co-ordinate - Easting	Unit co-ordinate - Easting (In ITM Format)			
6	Unit co-ordinate - Northing	Unit co-ordinate - Northing (In ITM Format)			
7	Longitude				
8	Latitude				
9	Zone	To be recorded by FCC following Taking In Charge of the columns in the site			
10	Unit Owner	To be recorded by FCC following Taking In Charge of the columns in the site			
11	Installation Type	Please state if this is an extra column / light installed into an existing scheme, a completely new scheme being installed, or other. (i.e. Extra / New (New Scheme) / Other, Please Specify) (This Is Mandatory For All New PL Equipment Installed)			
12	Unit Type	Please State what the Unit Type is (i.e. Column / Wall Bracket / Catenary System / Carrier Pole / Column (Multi-Arm) / Extra Bracket (Multi-Arm) / ESB Rising Main / Meter Room / Metered PL Pillar / Section Pillar / Interface Box / Selfa Box / Other, Please Specify)			
13	Metered/Unmetered	Please state if supply is Metered / Unmetered			
14	Max Import Capac	Maximum Import Capacity (MIC) measured in kVA			
15	Number Phases	Number of phases of electricity supply (Please state if Single Phase / Three Phase)			



Item No	FCC Field Name	Description	SP1	P1	etc.
16	GMPRN	Group Metered Point Reference No. GMPRN (To be completed by FCC for areas that will be taken in charge)			
17	TMPRN	Metered Point Reference No: TMPRN (For Unmetered Supplies only)			
18	MPRN	Metered Point Reference No: MPRN (For Metered Supplies only)			
19	Environment Situation	Environment situation (e.g. E0=Protected Dark Sky Area, E4=High District Brightness) Refer to ILP document GN01 for guidance (E0 / E1 / E2 / E3 / E4)			
20	Lighting Standard	Please state the Lighting standard & Lighting Class the design and installation has been carried out to. (Standard: IS EN 13201:2015 and Lighting Class: P1 / P2 / P3 / P4 / P5 / C1 / C2 / C3 / M1 / M2 / M3 / M4 / M5) If another standard is used, Please Specify Standard and Lighting Class/lighting level parameters			
21	Struct Insp Cert	Column Structural test certificate reference number Specific Reference number that appears on the structural test certificate			
22	Last Struct Insp Date	Date of last Column Structural Inspection and Condition level determination was conducted			
23	Column Condition	Basic structural inspection and condition level Newly installed/ good – very poor condition needs to be replaced. 1 / 2 / 3 / 4 / 5			
24	Condition Lantern	Basic structural inspection and condition level Newly installed/ good – very poor condition needs to be replaced. 1 / 2 / 3 / 4 / 5			
25	Condition Bracket	Basic structural inspection and condition level Newly installed/ good – very poor condition, past design life needs to be replaced. 1 / 2 / 3 / 4 / 5			



Item No	FCC Field Name	Description	SP1	P1	etc.
26	Date Elect Insp	Date of Electrical Installation Test & Results			
27	Eelec Test Cert Num	Electrical Installation Test Certificate Reference Number Specific reference number that appears on the electrical test certificate			
28	TIC	To be completed by FCC In Charge of FCC Yes/No			
29	TIC Date	Date installation is Taken In Charge by FCC To be completed by FCC			
Column Details					
30	Column Age	Year Column Installed, if known			
31	Col Inst Date	Date Column Installed			
32	Number Brackets	Number of brackets per column (0 / 1 / 2 / 3 / 4 / 5 etc.) Post-Top Mounted = 0, Standard Column & Bracket = 1, Multi-Arm Columns = 2 / 3 / 4 etc.			
33	Number Luminaires	Number of luminaires per column			
34	Col Manufacturer	Name of Column manufacturer			
35	Column Manuf Ref	Column manufacturer type reference (Manufacturer's Reference Number on Column)			
36	Column Type	Column Type or Model (e.g. Tubular / Stepped Tubular / Octagonal / Anti Vandal Pillar / Raising & Lowering / Cast Aluminium / Cast Iron / Conical / Other, Please Specify etc.)			
37	Cross Section	Column cross sectional shape (TUB / TAP / OCT / HEX / Conical / Not Applicable / Other, Please Specify)			
38	Col Height	Column height (m) This is the height of the column above ground			
39	Column Material	Column material type (Steel / Aluminium / Cast Iron / Cast Aluminium / Cast Iron and Steel / Stainless Steel / Ductile Iron / Wrought Iron / Other, Please Specify)			



Item No	FCC Field Name	Description	SP1	P1	etc.
40	Col Protective Coat	Column and/or Bracket protective coating (Galvanised / Galvanised & Painted / Painted / Paint Colour / Not Applicable / etc.)			
41	Column Door Type	Column Door Type (Flush / Framed / Laser Cut / High Door Framed / Overlapping / Crested Overlapping / Double Door / Other, Please Specify, etc.)			
42	Column Door Height	Height of Column Door from ground level to bottom of door			
43	Col Base Type	Column base type (Rooted, in Foundation Sleeve / Concrete Flange Base / Retention Socket / Other, Please Specify)			
44	Ground Condition	This refers to the ground conditions in which the column is installed and how well the drainage is around the pole. Concrete / Tarmac / Grass etc. Average / Good / Not Applicable / Poor Refer to PD 6547:2009 in conjunction with EN 40-3-1 and -3 for guidance			
45	Designed for Fatigue	Is the column designed for fatigue? This applies to any column above 9m nominal height. (Refer to EN 40-3-3 Clause 8 for guidance) (Yes / No / Not Applicable)			
46	Pass/Safe Col Type	Passive Safe Column Type (High Energy Absorbing / Low Energy Absorbing / Non Energy Absorbing) HE / LE / NE / Not Applicable			
47	Pass/Safe Disconnect Type	Passive Safe Electrical Disconnection Type Electronic / Mechanical / Fuse / Not Applicable			
48	Pass/Safe Disconnect Details	passive Safe Electrical Disconnection Manufacturer and Model			



Item No	FCC Field Name	Description	SP1	P1	etc.
49	Pass/Safe Occ Level	Passive Safe Occupancy Level This refers to the grading of the support structure. Support Structures with no performance requirements for passive safety are classed as 0. 0 / 1 / 2 / 3 / Not Applicable / Other, Please Specify			
50	ESB Pole (M)	Is the light mounted on and ESB Network Pole Yes / No			
51	Alert Pole	ESB Safety Alert Pole (M) Is the ESB pole under a safety alert? Yes / No			
52	Over/Under	ESB Network Pole Luminaire Location Over Conductor / Under Conductor Over / Under / Top Entry / Not Applicable			
Bracket Details					
53	Bracket Age	Year Bracket Installed, if known			
54	Brkt Inst Date	Bracket installation date			
55	Bracket Number	<u>For Multi-Arm Columns Only</u> This relates to the bracket number of the light on a Multi-Arm Column (e.g. Bracket 1 / Bracket 2 etc. or Bracket A / B / C etc.)			
56	Bracket Manufacturer	Name of Bracket manufacturer			
57	Bracket Type	Bracket type (Integral / Demountable / Other Please Specify)			
58	Bracket Model Type	Bracket Model Type (e.g. 6m Tub Short Reach / 6m Tubular / 8m Tubular, Double Arm / Triple Arm / Small Swan Neck / Large Swan Neck / ESB Over conductor / ESB Under Conductor / Stirrup / Other, Please Specify)			
59	Bracket Material	Bracket material (Steel / Aluminium / Cast Iron / Cast Aluminium / Steel and Cast Iron / Not Applicable / Other, Please Specify)			



Item No	FCC Field Name	Description	SP1	P1	etc.
60	Bracket Upreach/Outreach	Please Specify Bracket Dimensions as "Upreach (h) x Outreach (o/r)" (e.g. 0m(h) x 1m(o/r), 0m x 1.2m, 0m x 1.5m, 0.5m(h) x 1m(o/r), 1m x 1m, 1m x 1.25m, 1m x 1.5m, Not Applicable, Other, Please Specify etc.)			
61	Bracket Tilt (Degrees)	Bracket tilt (degrees)			
Luminaire Details					
62	Luminaire Age	Year Luminaire Installed, if known			
63	Lum Install Date	Luminaire installation date			
64	Luminaire Height	Mounting Height of luminaire above ground level (m)			
65	Lum Manufacturer	Name of luminaire manufacturer			
66	Lum Model	Name of luminaire model			
67	Lamp Type	Lamp type (LED / Other, Please Specify)			
68	Wattage	Actual Wattage of luminaire. Note: This is the Total Circuit Watts of the luminaire (light source wattage and driver losses). For CLO luminaires, this is the Total CLO Circuit Watts of the luminaire			
69	Billable Wattage	For unmetered supplies only Billable wattage (Assessed Wattage) This refers to the nominal wattage of the luminaire and control gear that is to be billed. (To be completed by FCC for areas that will be taken in charge)			
70	Annual Burn Hours	Annual burn hours on UMR (4031 / 4150 / Not Applicable / Other, Please Specify)			
71	Lamp Full Description	e.g. 29W LED CLO, 33W LED CLO preset dim 75%, 37W LED CLO preset dim 50%, etc.			
72	Lumen Output	Lumen output of luminaire (Lm)			
73	Luminaire Entry	Type of luminaire entry (Side Entry / Bottom Entry (Post-Top) / Top Entry / Back Entry)			



Item No	FCC Field Name	Description	SP1	P1	etc.
74	Lum Profile	Luminaire profile (Flat Glass / Deep Bowl / Curved Bowl / Tear Drop / Other, Please Specify)			
75	Visor/Bowl Material	Luminaire Glass Type (e.g. Glass / Polycarbonate / Perspex etc.)			
76	Lum Distribution	Optic/Reflector setting of luminaire (The photometric optical distribution of the luminaire is required)			
77	Colour Temp	Colour Temperature of the Light source (in Kelvin)			
78	Luminaire Ingress Protectio	Luminaire Ingress Protection (IP) Rating (IP65, IP66, IP67, IP68 etc.)			
79	Luminaire Impact Resistance Rating	Luminaire Impact Resistance (IK) Rating (IK08, IK10 etc.)			
80	Luminaire Circut Prot Ratng	Luminaire circuit protection rating (BS 6A / BS 10A / BS 16A / BS 20A / Other Please Specify)			
81	Warranty Expiry	Luminaire warranty expiry date			
Driver Details					
82	Control Gear	Control Gear Type Name of Luminaire Driver Manufacturer and Luminaire Driver Model (Electronic / LED Driver – Manufacturer name and driver model)			
83	Driver Type	Luminaire driver type (e.g. 330mA / 350mA / 500mA / 700mA / 300mA CLO / 350mA CLO / 400mA CLO / 450mA CLO / 500mA CLO / 525mA CLO / 550mA CLO / 700mA CLO / 1050mA CLO / Not Applicable / Other, Please Specify)			
Photocell Details					
84	Photocell / Timeswitch Manufacturer and Model	Photocell / Time switch Manufacturer and Model			



Item No	FCC Field Name	Description	SP1	P1	etc.
85	Lighting Control	Lighting control (Photocell / Electronic PECU / Time switch / CMS/ Continuous / Mini Cell / Node / Other, Please Specify etc.)			
86	Switching Regime	Switching regime (35/18 LUX / Other, Please Specify)			
87	Control Location	Control location (Individual Cell / Group Cell / Time Switch / Other, Please Specify)			
Supply and Cabling Details					
88	Supply Point Street Name per ESB Connection Agreement	Location Details of supply points as stated on ESB Networks Connection Agreement			
89	UMR Burn Profile	UMR Billable Code (unmetered supplies only) Code that matches UMR Billable wattage DD / D2M / U13 / U14 / U15 / U16 / U17 / U18 / U19 / U20 / U21 / U22 / U23			
90	Date New Burn Profile Added				
91	Circuit ID	Circuit ID - The particular ID that is given to the lighting circuit			
92	Isolator Location	Please state where the isolator for the light is located. (Box / Meter Room / Column/Pole / Section Pillar / etc.)			
93	Outgoing Circuit Prot	Outgoing circuit protection (BS 6A / BS 10A / BS 16A / BS 20A / BS 25A / BS 32A / Other, Please Specify)			
94	Feed Point	Location of Supply Point (e.g. P1 ABC Street, MP1 DEF Road, etc.)			



Item No	FCC Field Name	Description	SP1	P1	etc.
95	Supply From	Supply from Number of the column connected to the feeder/interface pillar (preceding column no. / supply section pillar on the circuit)			
96	Supply To	Supply to Number of the next column in the lighting circuit			
97	Supply Point Inst Date	Installation date of the Electrical supply point			
98	Cable Type	Please specify the Supply Cable Type to the Column / Section Pillar etc. (e.g. NYCY / PVC/SWA/PVC / ESB Rising Main / Guardian / Sheathed / P/L U/G / PL Cleated Supply / Sami / SWA / Other, Please Specify etc.)			
99	Cable size	Supply Cable Size (e.g. 3 x 6 sq. / 5 x 6 sq. / 3 x 10 sq. / 5 X 10 sq. / 5 x 16 sq. etc.)			
100	PL Network	Where is the FCC PL-owned supply cable located on the column? (Overhead / Underground / Both / Not Applicable)			
101	Interface Box	<i>For Wall mounted lights or ESB Pole mounted lights only</i> Is an interface box installed? (LUCY or Selfa box on PL poles or on walls / Killarney box on ESB Poles) (Yes / No / Not Applicable)			
Section Pillar Details					
102	Interface Pillar Type	Interface pillar type (Please state if Single Phase Section Pillar / Three Phase Section Pillar / Metered Pillar / Other, Please Specify)			
103	Pillar Manuf	Interface pillar body manufacturer This refers to the section pillar			
104	Pillar Diag Num	Interface pillar drawing number			
105	Pillar Material	Interface pillar body material (3 mm Steel / 5 mm Steel / Stainless Steel / Cast Iron / Not Applicable / Other, Please Specify)			



Item No	FCC Field Name	Description	SP1	P1	etc.
106	Pillar Body Protection	Interface pillar body protection (Galvanised / Galvanised & Painted / Painted / Paint Colour / Not Applicable / etc.)			
Attachments Details					
107	Number Attachments	Number of approved attachments (if fitted to column)			
108	Attachment Type	Type of approved attachment (if fitted to column) (Traffic Sign / Traffic Signals / Banner / Flower Basket / CCTV / Not Applicable / Other, Please Specify)			
109	Attachmt/Traff Sign Size	Attachment / traffic sign size (if fitted to column)			
Other Details Required					
110	Road Environment	What is the Road environment of the lighting installation (Primarily Vehicular / Mixed Vehicle & Pedestrian / Shared Surface / Pedestrian and Cyclists Only / Pedestrian Only)			
111	Wind Exposure	Wind Profile expected at the column location Wind exposure (587 N/m ²) Exposed / Sheltered			
112	Traffic speed	Traffic speed of road the light is installed on (30 kph / 50 kph / 60 kph / 80 kph / 100 kph / 120 kph)			
113	On a Bridge	Is the column located on a bridge? (Yes / No)			
114	Salting (Road)	Salting of Road (O) Whether carriageway is salted or not. If salted, extra maintenance and/or increased protection may be required.			
115	Traffic Flow	Traffic Flow (O) Annual average daily traffic figures. For National roads these figures are available on www.tii.ie . In local instances, traffic flows can be manually recorded.			



Item No	FCC Field Name	Description	SP1	P1	etc.
116	Pedestrian Density	Pedestrian Density (O) Pedestrian traffic density on the road			
117	Last Cyclic Maint Date	Date last cycle of maintenance was conducted			
118	Last Lamp Replace Date	Date last group lamp replacement was conducted			
119	Last Clean Date	Date last cycle of cleaning was conducted			
120	Last Prot Coat	Date last re-application of protective coating was applied to column / section pillar / bracket			
121	Date Periodic Electrical Inspection & Results	Date of last periodic electrical inspection test & Results Date and results of the last periodic electrical inspection test of the scheme circuit.			
122	Periodic electrical inspection test cert reference	Specific reference number that appears on the electrical inspection test certificate			
123	Non Destr Col Test Type	Non-destructive column testing type (O) Visual or non-scientific methods of assessment e.g. hammer tap			
124	Non Destr Col Test Date	Date of last Non-destructive column testing was carried out (O)			



APPENDIX L – REQUIRED DOCUMENTATION SUMMARY (DESIGN STAGE, CONSTRUCTION STAGE, and COMPLETION STAGE)

The Developer shall provide the following documentation and drawings at design stage, construction stage, and following completion of the lighting installation within the development site.

H.1 Documentation required for lighting design by Council

- Site location map with location of site highlighted
- Planning Reference Number for the development site
- Site layout plan in AutoCAD format (DWG or DXF format)
 - The site layout drawing shall show the layout of roads in the new development and how they connect into the existing road network.
 - The site layout must clearly show road names, house numbers, ESB LT distribution pillars, and all site features such as footpaths, verges, driveways kerb lines, trees, etc., and any features that may require special consideration for lighting, e.g. shared surface areas, cycle tracks, chicanes and other traffic calming measures.
- A colour-coded site layout drawing clearly identifying all site features, shall also be provided in PDF format.
- A taking in charge site layout drawing that clearly distinguishes between areas to be taken-in-charge by Fingal County Council and areas which will be in the care of any private management company.
- Postal Plan layout for the development site.

H.2 Documentation required for lighting design by Developer

- Site location map with location of site highlighted
- Planning Reference Number for the development site
- Site layout plan in AutoCAD format (DWG or DXF format)
 - The site layout drawing shall show the layout of roads in the new development and how they connect into the existing road network.
 - The site layout must clearly show road names, house numbers, ESB LT distribution pillars, and all site features such as footpaths, verges, driveways kerb lines, trees, etc., and any features that may require special consideration for lighting, e.g. shared surface areas, cycle tracks, chicanes and other traffic calming measures.



- A colour-coded site layout drawing clearly identifying all site features, shall also be provided in PDF format.
- A taking in charge site layout drawing that clearly distinguishes between areas to be taken-in-charge by Fingal County Council and areas which will be in the care of any private management company.
- Postal Plan layout for the development site.
- Proposed lighting layout design drawing (scaled between 1:100 and 1:1000) in DWG format and in PDF format.

The lighting layout drawing must include the following:

- Column positions, lantern types, nominal height of columns, and column numbering scheme (all columns must be uniquely numbered)
 - The proposed lanterns shall be clearly indicated on the drawings.
 - Lantern details including lantern types, manufacturer, model, constant light output wattage (manufacturer must take into account 35/18 lux switch on/off levels of photocell), number of LEDs (in the luminaire), tilt, lantern entry type, photocell switching levels, and maintenance factor.
 - Column details including column type, column mounting height, and manufacturer, and column setback from kerb edge
 - Bracket details including manufacturer, outreach and tilt (if proposed and agreed for brackets to be used)
 - Position of any proposed trees including a circle around each tree with a radius of 7 metres.
 - Where applicable, the Developer shall show the demarcation of luminaires that will remain private and those that will be taken in charge by Fingal County Council.
- Isolux contour plot of light levels drawing in PDF format.
 - Ducting layout drawing in PDF format
The ducting layout drawing must show the routes and locations of all public lighting ducts, including road crossings; all public lighting section pillar locations (these must be on the public footpath); all ESB section pillar locations; all public lighting cable chamber locations; cable sizes and cable types; a comprehensive legend; and installation notes
 - Lighting Calculation Report (in Lighting Reality format)
 - The calculation report must include details of maintenance factors used, lighting standard and lighting class the lighting scheme is designed to, luminaire mounting heights, angles of tilt the luminaires are designed with, luminaire colour temperature, total outreach of luminaire optic from centre of column.
 - The glare rating of the proposed lighting layout. This rating must include any angles of tilts used in the design.
 - Separate calculation grids are required for separate types of areas within a development.



- Manufacturer product data sheets and drawing for all proposed public lighting infrastructure (columns, lanterns, section pillars, cabling, ducting, etc.).
- Column drawings for all column types and column heights proposed for use in the scheme.
- Details of hinge mechanism and operation where hinged columns are proposed
- FORM 1 - LED Luminaire Technical Details (Appendix C)
An LED Luminaire Technical Details Sheet must be completed for each luminaire type proposed for use in the scheme, as well as details of the warranty transfer procedure to Fingal County Council.
- LED Luminaire documentation detailed in Appendix B
- Obtrusive lighting calculations report
Obtrusive lighting calculation report shall be carried out at a maintenance factor of 1.
- Circuit schematics
- Volt drop calculations
- Details of proposed column protection measures where columns are located in shared surface areas
- Details of Public Lighting Designer and Electrical Layout Designer
 - The public lighting installation shall be designed by a competent public lighting designer proficient in the use of public lighting design software. Lighting Reality® is the preferred software of Fingal County Council.
 - All electrical infrastructure designs shall be carried out by a competent Electrical professional who is competent and familiar with the latest requirements of the National Rules for Electrical Installations, IS 10101.
 - The Lighting Designer and Electrical Engineer may be required to demonstrate an adequate knowledge and understanding of all current public lighting standards and electrical regulations respectively.
- A maintenance method statement shall be provided in respect of lighting columns that are not accessible from the public road or where vehicular access is limited or likely to be problematic.

H.3 Documentation required at Construction Stage

- Details of the public lighting contractor must be provided prior to commencement of public lighting works.
- Copy of Safe Electric pre-connection completion certificates and test record sheets.



- Developer's contact details and billing details for invoicing
- Confirmation of payment of invoice for ESB supply connection where FCC make the supply application
- FORM 2 - Supply Point Duct Completion Form (Appendix F)
A separate Supply Point Duct Completion Form must be completed for all public lighting supply points within the development.
- FORM 5 - Lighting Column Design Compliance Sheet (Appendix I)
A separate Lighting Column Design Compliance Sheet must be completed for all column types used in the scheme.

H.4 Documentation required at Completion Stage/As Built

The developer must submit the following As-Constructed Documentation to Fingal County Council Public Lighting for the lighting installation within the development site:

- Copies of Safe Electric pre and post connection completion certificates, and pre and post connection test record sheets for the public lighting installation.
When the public lighting section-pillar(s) are energised by ESB Networks and soft copies of the pre and post-connection test records and completion certificates are received by Public Lighting, then this shall mark the start of the 12 months contractor liability period.

- As-built installed lighting layout drawings of public lighting infrastructure within the site development.

The lighting layout drawing must include the following:

- Column positions, lantern types, nominal height of columns, and column numbering scheme (all columns must be uniquely numbered)
- The proposed lanterns shall be clearly indicated on the drawings.
- Lantern details including lantern types, manufacturer, model, constant light output wattage (manufacturer must take into account 35/18 lux switch on/off levels of photocell), number of LEDs (in the luminaire), tilt, lantern entry type, photocell switching levels, and maintenance factor.
- Column details including column type, column mounting height, and manufacturer, and column setback from kerb edge
- Bracket details including manufacturer, outreach and tilt (if proposed and agreed for brackets to be used)
- Position of any proposed trees including a circle around each tree with a radius of 7 metres.
- Where applicable, the Developer shall show the demarcation of luminaires that will remain private and those that will be taken in charge by Fingal County Council.

The site lighting layout drawing must also include road names, house numbers, ESB LT distribution pillars, all installed site features including kerb lines, footpaths, verges,



driveways, trees, traffic management measures, shared surface areas, cycle tracks, chicanes, etc., clearly identified. A comprehensive legend detailing the installed column and lanterns must also be included on the layout drawings.

- As built installed lighting ducting layout drawings
The installed ducting layout drawing must show the routes and locations of all public lighting ducts, including road crossings; all public lighting section pillar locations (these must be on the public footpath); all ESB section pillar locations; all public lighting cable chamber locations; cable sizes and cable types; a comprehensive legend; and installation notes.
- Taking in charge site layout drawing that clearly distinguishes between areas to be taken-in-charge by Fingal County Council and areas which will be in the care of any private management company.
- As built installed circuit schematics and volt drop calculations
- FORM 1 - LED Luminaire Technical Details (Appendix C)
An LED Luminaire Technical Details Sheet must be completed for each luminaire type proposed for use in the scheme, as well as details of the warranty transfer procedure to Fingal County Council.
- FORM 2 - Supply Point Duct Completion Form (Appendix F)
A separate Supply Point Duct Completion Form must be completed for all public lighting supply points within the development.
- Civil and electrical inspection sheets for the scheme (Form 3 and Form 4)
- FORM 5 - Lighting Column Design Compliance Sheet (Appendix I)
A separate Lighting Column Design Compliance Sheet must be completed for all column types used in the scheme.
- FORM 6 - Required Lighting Installation Details (Appendix K)
The Required Lighting Installation Details form must be completed for all lights and section pillars in the development and must be submitted in Microsoft Excel Format.
- Developer Details
- Details of Public Lighting Designer and Electrical Layout Designer
 - The public lighting installation shall be designed by a competent public lighting designer proficient in the use of public lighting design software. Lighting Reality® is the preferred software of Fingal County Council.
 - All electrical infrastructure designs shall be carried out by a competent Electrical professional who is competent and familiar with the latest requirements of the National Rules for Electrical Installations, IS 10101.



- The Lighting Designer and Electrical Engineer may be required to demonstrate an adequate knowledge and understanding of all current public lighting standards and electrical regulations respectively.
- Lighting Calculation Report and Obtrusive Light Calculation Report
- Lighting Infrastructure details, including manufacturer product data sheets and drawing for all proposed public lighting infrastructure (columns, lanterns, section pillars, cabling, ducting, etc.).
- LED Luminaire documentation detailed in Appendix B
- Warranty details of installed public lighting infrastructure and transfer of warranty to Fingal County Council Public Lighting
All luminaires shall have a product warranty of eight (8) years minimum, as standard, and shall cover all luminaire components, inclusive of electronics, drivers, photocells, finishes, etc.
- Details of column protection measures where columns are located in shared surface areas
- Maintenance method statement in respect of lighting columns that are not accessible from the public road or where vehicular access is limited or likely to be problematic.
- Any post installation inspection and measurement of light level reports that may be requested by Fingal County Council.
- Site location map with location of development site highlighted and including the development's Planning Reference Number
- Postal Plan for the development.