

MAYESTON S179A HOUSING DEVELOPMENT
FINGLAS,
DUBLIN 11.

UTILITIES AND PUBLIC LIGHTING REPORT

Revision:	P3
Approved:	SHANE BELTON C.Eng MIEI DIRECTOR
Date:	2023/11/03
P3 November 2023	



BELTON CONSULTING ENGINEERS
17 Ballymount Corporate Park,
Ballymount Avenue,
DUBLIN 12.

PROJECT NO.: 2302

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SUMMARY

The proposed development relates to a site of c.1.35ha. located within existing residential development referred to as Mayeston, Poppintree, Dublin 11. The site is located north of St Margaret's Road and is bound by the M50 motorway to the north, Mayeston Green and Silloge Green to the east, Mayeston Downs to the south, and to the west by public open space.

The proposed development will include for the provision of 119 no. apartment units consisting of 39 one-bedroom apartments, 68 no. two-bedroom apartments and 12 no. 3-bedroom apartments ranging from 3-6 no. storeys and will also include for car parking, cycle parking, pedestrian and cycle links, storage, services and plant areas. Landscaping will include for high quality private open space, communal amenity areas and public open space provision.

The FCC-owned land on which the proposed buildings are located has an extent of 1.35ha and falls approximately 2.2m from the north-west towards the south-east. The surrounding context is characterized by perimeter block apartment buildings and terraced 2-3 storey houses. There are no existing buildings on the site apart from ground floor slabs and a road which were partially constructed circa 2008 (FCC Planning Ref: FCC 06A/1348 and F07A/1423), before the works were abandoned. Some soil heaps remain on the site as part of these works. The main part of the site to the west is fully fenced off and the eastern part of the site is overgrown grass and scrub.



Fig 1. Mayeston site location & boundary

ESB INFRASTRUCTURE

The site is well located with regards to ESB infrastructure. The ESB Networks drawing of existing ESB infrastructure shown in Fig.2 below indicates the network distribution capacity to Mayeston housing development. There are existing 10kV underground lines near the site.

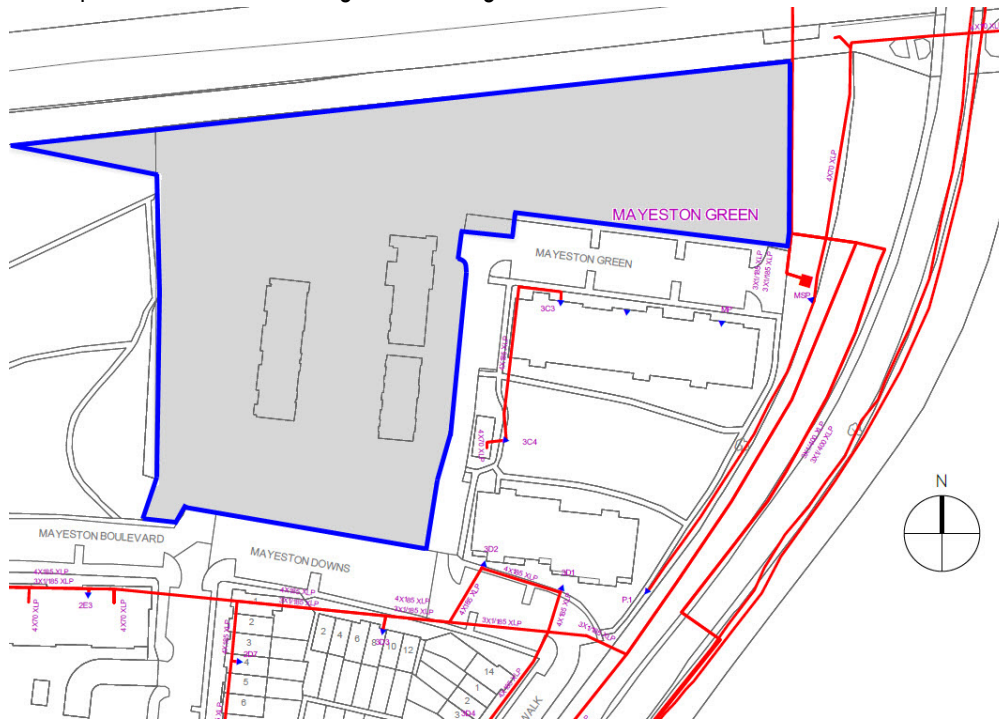


Fig 2. ESB Networks Map of Mayeston Site Surrounds

It is expected that ESB will require a substation for this development and provision has been made for a substation in Block C as indicated in the Site Plan of the proposed development below. For improved detail please refer to obriain:beary GROUND FLOOR PLAN, drawing No. P1010.



GAS INFRASTRUCTURE

The gas infrastructure within the Mayeston site is managed by Gas Networks Ireland (GNI). There is a single low pressure distribution pipeline which passes through the site.

There is no intention to provide natural gas to the Mayeston housing development which is in keeping with the Energy Performance of Buildings Directive as detailed in the Energy Analysis Report. An application will be made to GNI for GNI to re-route the existing gas pipework running through the site and including the decommissioning of the gas pipework running through the Mayeston housing development site. New pipework will be also need to be installed (as part of the re-routing) adjacent to the site to ensure a continued gas supply to the existing residents at Mayeston Green.



Fig 3. Mayeston Natural Gas Infrastructure Map

TELECOMS – EIR

EIR infrastructure to the surrounding area is sufficient to service the development from the surrounding area subject to final agreement with EIR.

A new EIR Ducting network is proposed for the development. This will provide end users with the option of utilising Virgin Media services. The proposed new infrastructure is indicated below in Fig.4.

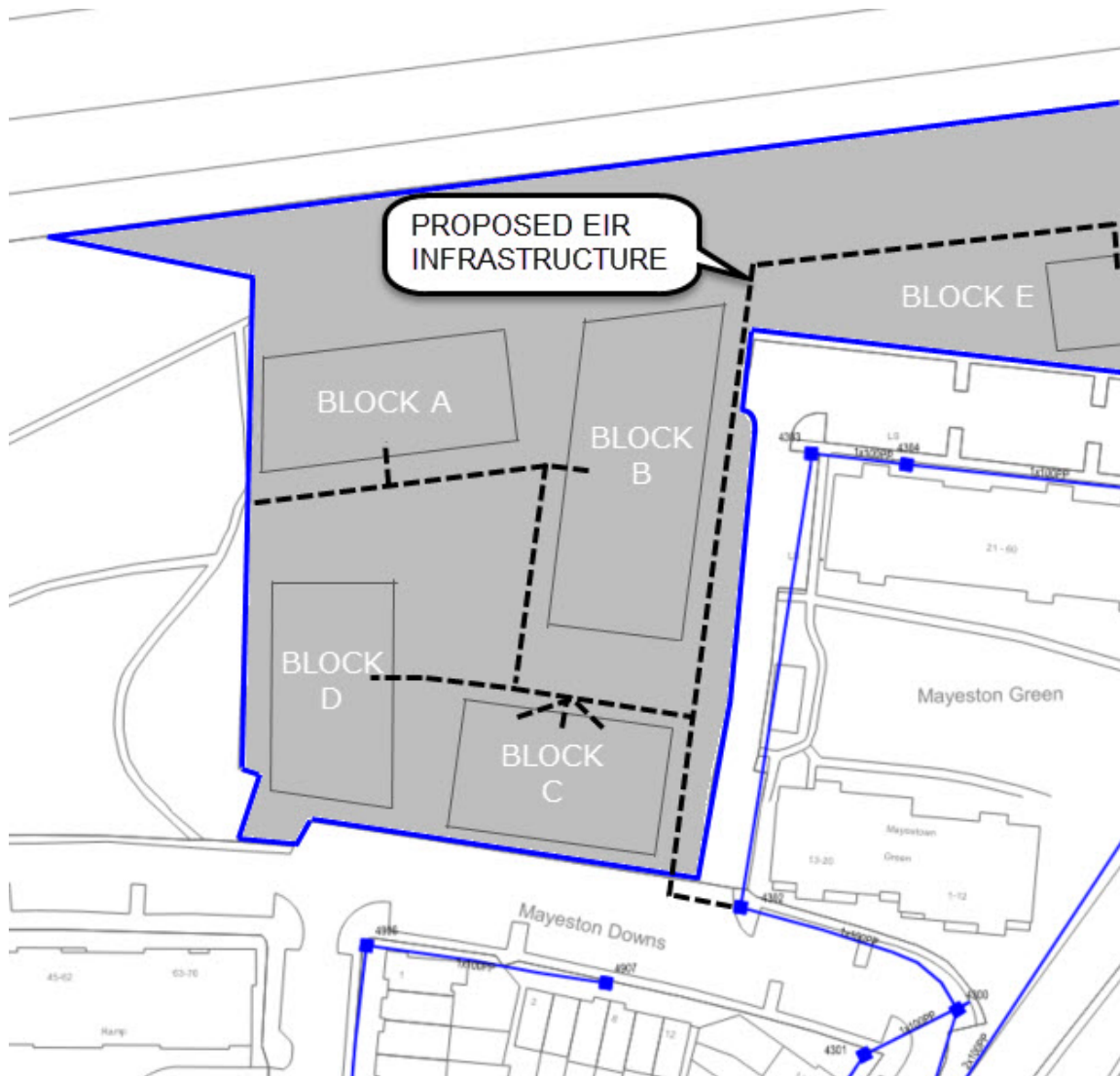


Fig 4. Mayeston EIR Infrastructure Map

TELECOMS - VIRGIN MEDIA

Virgin Media infrastructure to the surrounding area is sufficient to service the development subject to final agreement with Virgin Media.

There is existing Virgin Media network passing through which will need to be deviated from the site which is proposed to be replaced in underground ducting (i.e. between points 1, 2 and 3 as shown below) to accommodate the existing connections in the area, in accordance with Virgin Media requirements.

A proposed new Virgin Media Ducting network shall be provided to the development and is indicated in Fig. 5 below. This will provide end users with the option of utilising Virgin Media services.

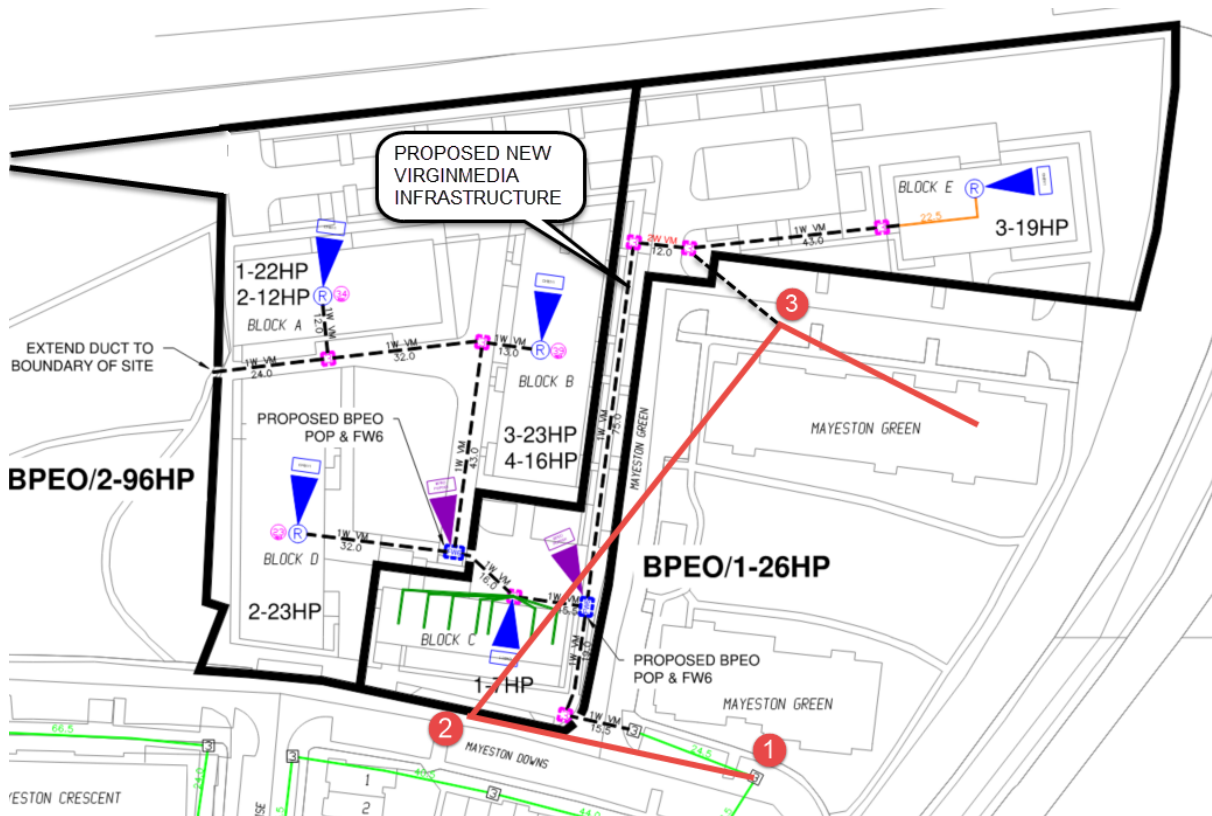


Fig 5. Mayeston Virgin Media Infrastructure Map

TELECOMS - SIRO

SIRO is the broadband offering partnered with ESB where ESB brings in the fibre network with their own low voltage electrical cabling. This will be provided through the power ducts the development will install for ESB.

New SIRO infrastructure shall be provided for the development which will provide a 3rd Broadband option for each end user.

PUBLIC LIGHTING

A class P4 public lighting installation in accordance with BS 5489-1:2020 (Design of Road Lighting – Lighting of roads and public amenity areas) and the Fingal County Council General Specification for Public Lighting Installations, April 2022 and has been calculated in accordance with IS EN 13201-3:2015 (Road Lighting – Calculation of performance) is proposed for the new Mayeston housing development. The design is included in a lighting report (appended at Appendix A) but an overview is shown below (Fig. 6). Representative lux (levels) are indicated. All light fittings are LED light fittings and will be mounted on 6m columns.



Fig 6. Proposed lighting design

AMENITY LIGHTING

A class P4 public lighting installation in accordance with BS 5489-1:2020 (Design of Road Lighting – Lighting of roads and public amenity areas) and the Fingal County Council General Specification for Public Lighting Installations, April 2022 and is calculated in accordance with IS EN 13201-3:2015 (Road Lighting – Calculation of performance) is proposed for the new Mayeston housing development, the design is included in a lighting report and is included as part of this planning submittal. The layout is as depicted in the drawing below in Fig. 7 and representative lux (levels) are indicated. All light fittings are LED light fittings and will be mounted on 4.5m columns except for light 1A which will be mounted on a 5m column.



Fig 7. Proposed lighting design

ELECTRIC VEHICLE (EV) CHARGING INFRASTRUCTURE

The Mayeston housing development will include Electric Vehicle charging points to 15 no. ($\geq 20\%$) of the proposed 73 car parking spaces. In addition, ducting is to be laid to ensure that EV Charging infrastructure can be extended to all parking bays without having to undertake extensive excavation works.

Refer to Fig.8 below for an overview of the EV layout or refer to Appendix B where a larger scale version of the drawing 2302-BCE-ZZ-00-DR-E-60100 is available.

The complete EV infrastructure installations, including associated electrical equipment, etc. will be installed in accordance with the general wiring rules and safety requirements as outlined in the National Rules for Electrical Installations I.S. 10101:2020.

The EV Charging System chosen shall be connected to the internet so that users will be able to pay for the service received. The system can be managed either by the Fingal County Council or by a 3rd Party Operator on their behalf.

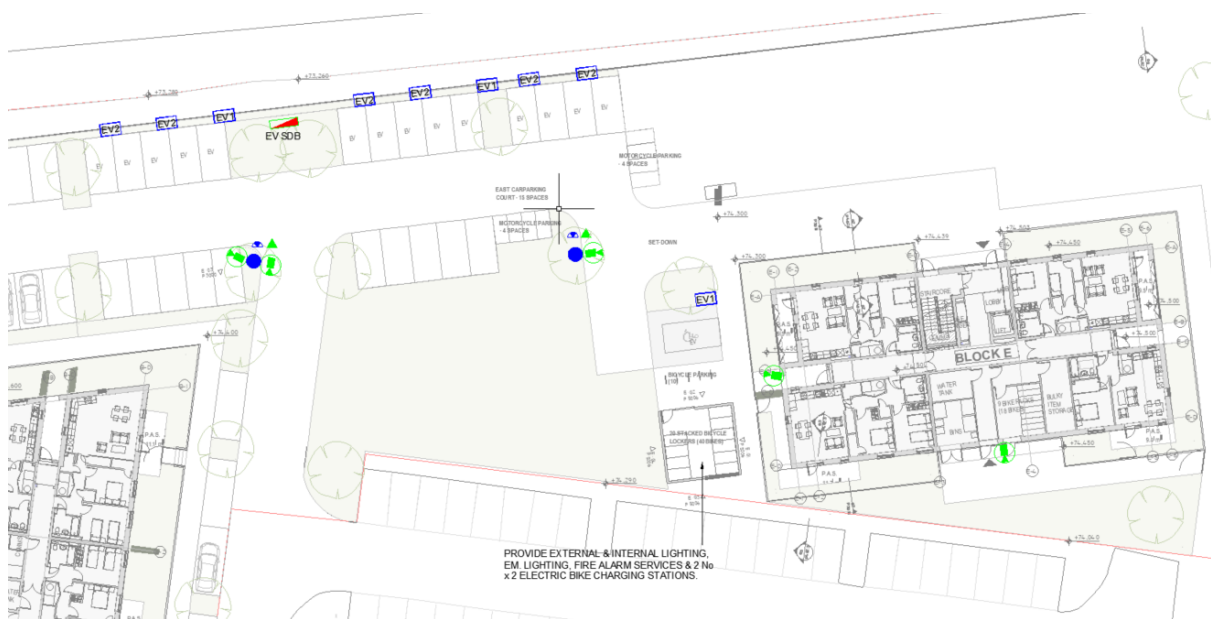


Figure 8. Proposed Carpark EV charging infrastructure

APPENDIX A

Street Lighting Report

STANDARDS & DESIGN GUIDES

The design criteria applied to the proposed external lighting installation shall be in accordance with the following standards and guides:

National Rules for Electrical Installations I.S. 10101
Fingal County Council General Specification for Public Lighting Installations, April 2022
BS 5489-1:2013 : Design of Road Lighting – Lighting of roads and public amenity areas
I.S. EN 13201-2:2015 : Road Lighting – Calculation of performance

LIGHTING DESIGN CRITERIA

The lighting design has been designed to provide adequate lux levels and ensure safe movement for the following:

Vehicular
Pedestrian
Cyclist

LIGHTING CONTROL

The lighting shall be controlled through the use of in built photocells. The switching level for each photocell shall be based on the dusk to dawn principle which 35 lux ON and 18 lux OFF.

LIGHTING CALCULATIONS

The predicted performance of the external lighting installations has been assessed in detail using Lighting Simulation software. The Lighting Simulation software used was Lighting Reality.

A Residential Lighting Class of P4 has been selected to base the lighting calculations on in accordance with BS 5489-1:2020 (Design of Road Lighting – Lighting of roads and public amenity areas) and IS EN 13201-3:2015 (Road Lighting – Calculation of performance).

LIGHTING DESIGN AND LAYOUT

The proposed lighting is as per the Lighting Reports below:

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	-65.57	83.60	128.05	22.08	1.49	1.58
2	Grid 2	23.38	63.32	79.11	25.00	1.49	1.09
3	Grid 3	-2.39	-8.49	18.76	108.41	1.88	1.67
4	Grid 4	-79.95	-11.69	113.11	23.99	1.49	1.50
5	Grid 5	-66.20	10.65	7.00	36.81	1.40	1.23

Luminaires

Luminaire A Data

Supplier	
Type	SLI.2.LA034.A2.HE.2QT.W020
Lamp(s)	LED C.3000 Lumens
Lamp Flux (klm)	3.40
File Name	Red SLI.2.LA034.A2.HE.2QT.W020.ies
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	604.6, 149.7, 0.0
No. in Project	20

Luminaire B Data

Supplier	
Type	SLI.1.LA044.HA
Lamp(s)	LED C.4000LM - 4000K
Lamp Flux (klm)	4.15
File Name	Red SLI.1.LA044.HA.IES
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	758.2, 189.7, 0.0
No. in Project	6



Luminaire C Data

Supplier	Philips
Type	BGP291 DRXN0
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	0.80
File Name	LumiStreet Gen2 Micro_BGP291_DRXN0_800_6LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	1545.3, 23.9, 0.0
No. in Project	1

Layout

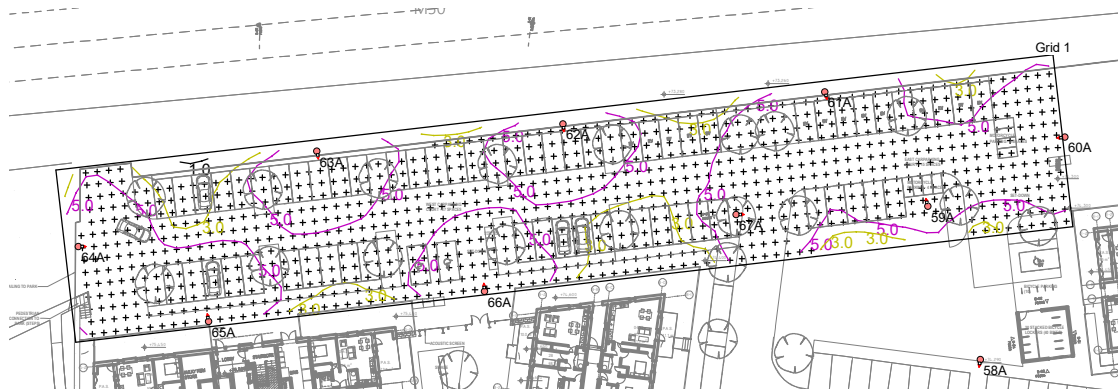
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
64	A	-65.25	95.79	6.00	0.00	0.00	0.00	0.50			
65	A	-48.61	86.23	6.00	100.00	0.00	0.00	0.50			
63	A	-34.83	107.96	6.00	283.00	0.00	0.00	0.50			
66	A	-13.41	90.08	6.00	96.00	0.00	0.00	0.50			
62	A	-3.42	111.44	6.00	277.00	0.00	0.00	0.50			
61	A	29.98	115.53	6.00	287.00	0.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
67	A	18.68	99.89	6.00	0.00	0.00	0.00	0.50			
59	A	43.14	100.93	6.00	104.00	0.00	0.00	0.50			
60	A	60.61	109.74	6.00	187.00	0.00	0.00	0.50			
Existing PL57	B	37.18	63.01	6.00	79.00	0.00	0.00	0.50			
Existing PL55	B	81.92	56.77	6.00	85.00	0.00	0.00	0.50			
58	A	49.84	81.38	6.00	259.00	0.00	0.00	0.50			
56	A	92.74	76.28	6.00	258.00	0.00	0.00	0.50			
Existing PL69	B	25.82	47.63	6.00	171.00	0.00	0.00	0.50			
Existing PL71	B	17.34	3.55	6.00	178.00	0.00	0.00	0.50			
70	A	6.34	27.75	6.00	354.00	0.00	0.00	0.50			
68	A	11.22	68.07	6.00	351.00	0.00	0.00	0.50			
44	A	0.24	-7.48	6.00	256.00	4.00	0.00	0.50			
Existing PL45	A	17.08	-22.07	6.00	86.00	0.00	0.00	0.50			
Existing PL	A	33.42	-17.46	6.00	259.00	0.00	0.00	0.50			
Existing PL43	A	-24.58	-11.60	6.00	80.00	0.00	0.00	0.50			
Existing PL40	A	-48.52	-7.98	6.00	78.00	0.00	0.00	0.50			
Existing PL	B	-86.33	-7.11	6.00	81.00	0.00	0.00	0.50			
36	A	-62.59	2.10	6.00	265.00	0.00	0.00	0.50			
42	A	-32.93	-0.50	6.00	256.00	0.00	0.00	0.50			
R/L 41	C	-63.41	31.71	6.00	180.00	0.00	0.00	0.50			
Existing PL	B	51.50	-28.06	6.00	202.00	0.00	0.00	0.50			

Horizontal Illuminance (lux)

Grid 1



Results

Eav	6.55
Emin	1.40
Emax	15.13
Emin/Emax	0.09
Emin/Eav	0.21

Horizontal Illuminance (lux)

Grid 3

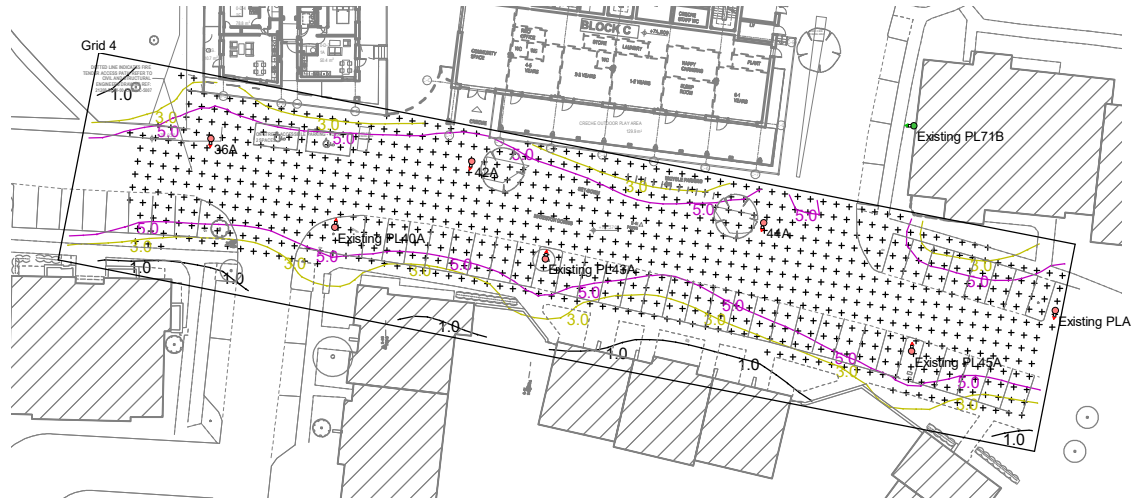


Results

Eav	6.30
Emin	1.23
Emax	14.11
Emin/Emax	0.09
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 4

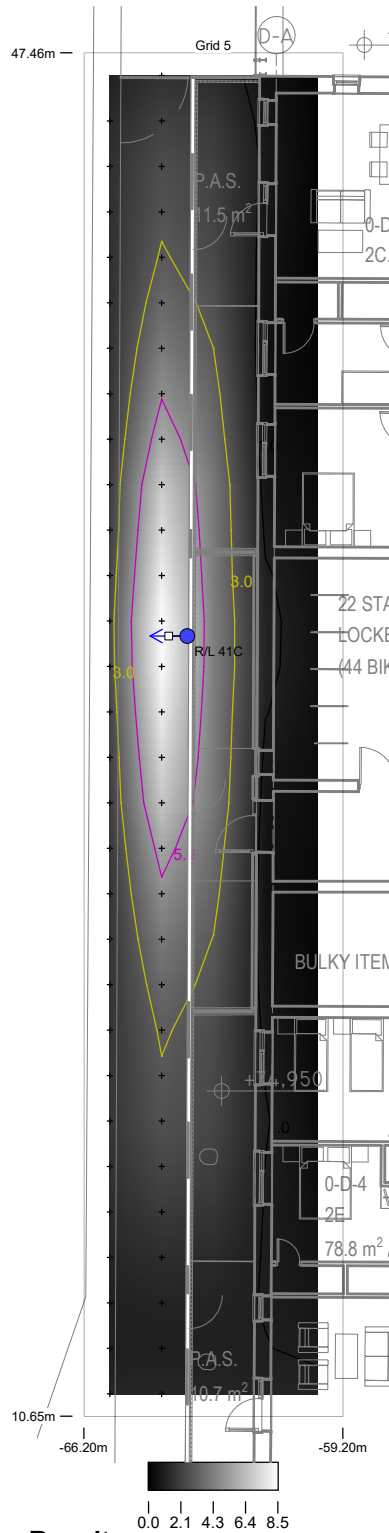


Results

Eav	7.96
Emin	1.56
Emax	18.07
Emin/Emax	0.09
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 5



Results

Eav	3.03
Emin	1.02
Emax	8.53
Emin/Emax	0.12
Emin/Eav	0.34



PROJECT NAME:
Mayestown Green RevA

PROJECT No:
2023/18

SCALE: **1:1000** DATE: **11 October 2023**

CALCULATION:
Horizontal Illuminance (lux)

DESIGNER:
Damian Ryan

PREPARED BY:

Damian Ryan
Fingal County Council
PL and Electrical Section
email: damian.ryan@fingal.ie
phone:0879482659

Results Grid 1		Results Grid 2		Results Grid 3		Results Grid 4		Results Grid 5	
Eav	6.55	Eav	5.61	Eav	6.30	Eav	7.96	Eav	3.03
Emin	1.40	Emin	1.18	Emin	1.23	Emin	1.56	Emin	1.02
Emax	15.13	Emax	13.74	Emax	14.11	Emax	18.07	Emax	8.53
Emin/Emax	0.09	Emin/Emax	0.09	Emin/Emax	0.09	Emin/Emax	0.09	Emin/Emax	0.12
Emin/Eav	0.21	Emin/Eav	0.21	Emin/Eav	0.20	Emin/Eav	0.20	Emin/Eav	0.34

DATE: 24 August 2022
DESIGNER: Damian Ryan
PROJECT No: Aug/02
PROJECT NAME: Mayestown Amenity Area

LIGHTING
REALITY

Outdoor Lighting Report

PREPARED BY: Damian Ryan
Fingal County Council
PL and Electrical Section
email: damian.ryan@fingal.ie
phone:0879482659

Layout Report

General Data

Dimensions in Metres Angles in Degrees
Grid Origin -57.4m x 6.0m
Area 54.8m x 76.6m
Sample Spacing 1.48m x 1.47m

Luminaires

Luminaire A Data

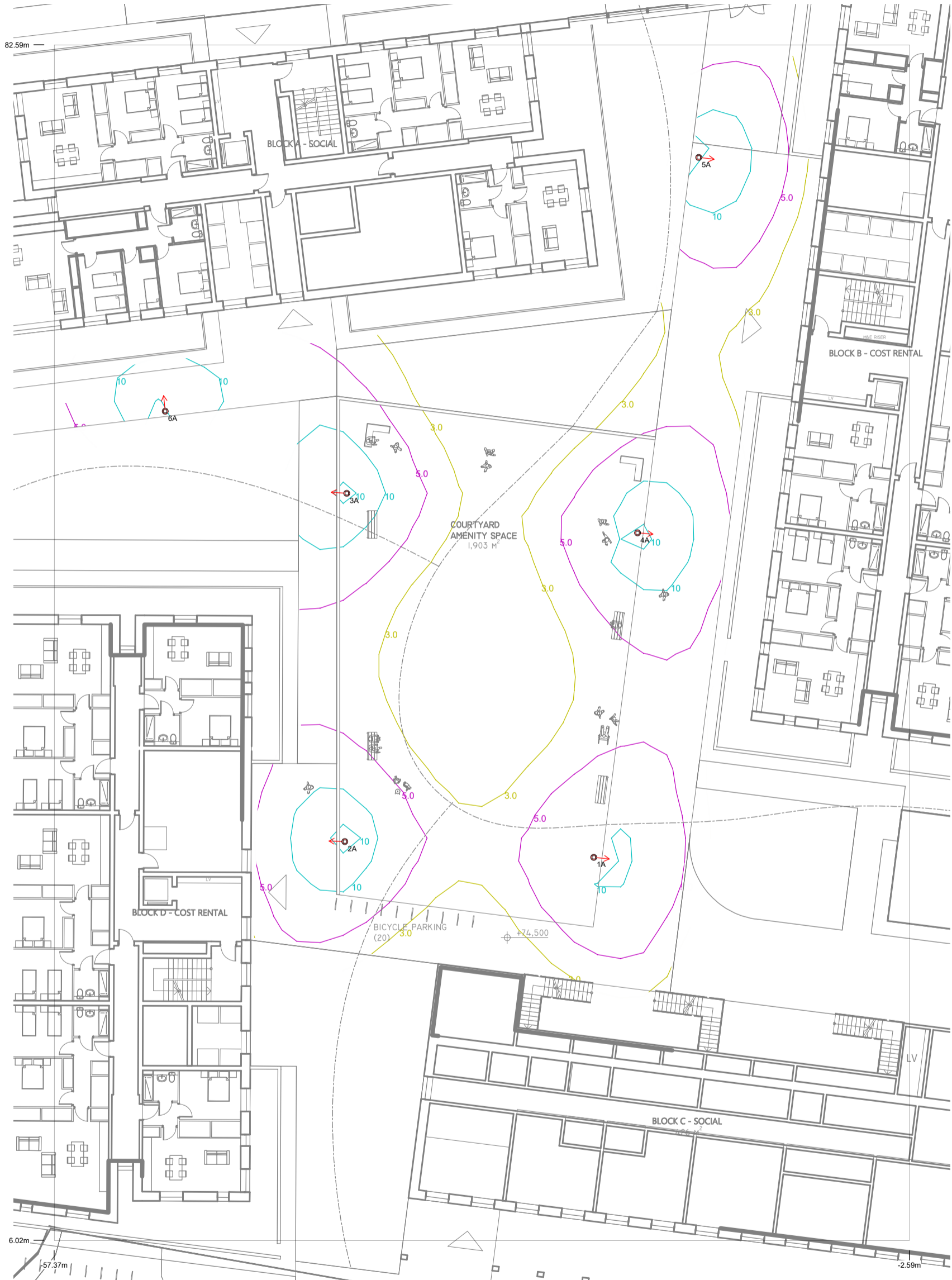
Supplier	Urbis Schreder
Type	PILZEO 5068 Deep shape PC 16 XP-G3@350mA WW 730 230V 33 544
Lamp(s)	16 XP-G3@350mA WW 730 230V
LampFlux(klm)/Colour	2.43 WW 3000K/70
File Name	PILZEO 5068 16 XP-G3 350mA WW 730 18.1W 335442 Deep shape PC 230V TF.Idt
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	412.7, 271.8, 24.5
No. in Project	6

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out- reach	Target X	Target Y	Target Z
1	A	-22.81	30.55	5.00	354.00	0.00	0.00	0.00			
2	A	-38.76	31.56	4.50	178.00	0.00	0.00	0.00			
3	A	-38.63	53.87	4.50	176.00	0.00	0.00	0.00			
4	A	-20.01	51.34	4.50	355.00	0.00	0.00	0.00			
5	A	-16.09	75.38	4.50	353.00	0.00	0.00	0.00			
6	A	-50.25	59.12	4.50	96.00	0.00	0.00	0.00			

Horizontal Illuminance (lux)

Grid 1



Results

Eav	5.19
Emin	1.24
E _{max}	13.96
E _{min} /E _{max}	0.09
E _{min} /E _{av}	0.24
	3

**EV Charging Points
&
Electrical Services**



ELECTRICAL CENTERS & MAIN DISTRIBUTION SYMBOLS		E61
	DISTRIBUTION BOARD	
GENERAL SERVICES SYMBOLS		E62
	UNSWITCHED FUSED CONNECTION UNIT (W/ NEON INDICATOR)	
	GATE DRIVE MOTOR	
	SINGLE EV CHARGING POINT	
	DOUBLE EV CHARGING POINT	
SECURITY SERVICES SYMBOLS		E67
CCTV ALARM LEGEND		
	CCTV CAMERA (DOME TYPE)	
	CCTV CAT 5 CABLE	
	NETWORK VIDEO RECORDER	
	CCTV LCD MONITOR	
	6m GALVANIZED CCTV COLUMN	
ACCESS CONTROL LEGEND		
	DISABLED DOOR PUSH PADDLE	
	DOOR FITTED WITH ELECTRONIC ACCESS CONTROL (X INDICATES TYPE SEE BELOW)	
FIRE ALARM SERVICES SYMBOLS		E68
	INTERFACE UNIT (INPUT/OUTPUT UNIT)	
<p>TO BE MOUNTED ON STAINLESS PEDESTALS</p> <p>TYPE D TYPICAL DOOR SCHEMATIC</p>		

Rev	Description	Date	Chkd	Appd	Rev	Description	Date	Chkd	Appd
T1	TENDER ISSUE	04-04-23	KM	JG					
T2	TENDER ISSUE, SECTION 179a UPDATE	16-10-23	KM	JG					

CLIENT

Comhairle Contae Fhine Gall
Fingal County Council

ARCHITECTURAL PRACTICE

obriain:beary

BCE **BELTON** CONSULTING ENGINEERS

B17 Ballymount Corporate Park,
Ballymount Road Upper
Dublin 12
Ireland
T + 353 (0)1 4295774
E Info@bce.ie
W www.bce.ie

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Do not scale off this drawing - All dimensions, measurements and setting-out details shall be taken from architectural, structural, and workshop/installation drawings by others and are to be verified on site.
This drawing is diagrammatic only and shows the general arrangement of equipment only.

Project **MAYESTON HOUSING DEVELOPMENT**
FINGALAS, DUBLIN 11

Title **ELECTRICAL SERVICES SITE SERVICES LAYOUT**

Scale	1:300 @ A1	Drawn	AH	Engineer	KM	Project No.	2302	Drawing No.	2302-BCE-ZZ-00-DR-E-60100
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Zone	ZZ	Discipline	E
Level	00	Project code	MHD
Element	60	Rev.	T2