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Consulting Engineers

PUBLIC LIGHTING CALCULATIONS

FOR

COOKSTOWN CASTLE DEVELOPMENT

AT

**LANDS WEST OF OLD BELGARD ROAD AND NORTH, SOUTH AND WEST
OF COOKSTOWN ROAD, COOKSTOWN INDUSTRIAL ESTATE, TALLAGHT,
DUBLIN 24**

FOR

**JOSEPH COSTELLO, ABSOLUTE LIMOUSINES LTD AND BOHERKILL
PROPERTY DEVELOPMENT LTD**

1. PROPOSED DEVELOPMENT

The Cookstown Castle is a mixed-use development will consist of residential use and employment uses all located on Cookstown road.

The proposed development consists of construction of a mixed-use development featuring 1104 no. 'build-to-rent' apartments in 4 no. blocks varying in height from four to eleven storeys. The development also includes 4 no. commercial units at ground floor level of Blocks B and D, office space across first to seventh floor levels of Block D and a crèche at ground floor level of Block C. The development is served by parking spaces (including limited mobility parking spaces) and bicycle spaces.

The Cookstown Castle development provides high-quality architectural design which enhances the existing characteristics of this site.

2. EXECUTIVE SUMMARY

This report was prepared in accordance with the document 'Public Lighting Installations in Residential and Industrial Areas (Guidance Document – February 2015)' to ensure the development will be provided with adequate lighting to the standards of South Dublin County Council.

Design of the public lighting is based on the current British Standards for Road Lighting BS 5489 and BS EN 13201. Class for the design is P4 with S/P ratio of 1.4.

The lighting design complies with the above requirements and detailed output is on the following pages:

DATE: 24 November 2020
DESIGNER: Dan Staunton
PROJECT No: 19-12-06-01B
PROJECT NAME: Cookstown Castle

**LIGHTING
REALITY**

Cookstown Castle
IS EN 13201/BS5489
Road / Paths - Class P4
Access Path - Class P2
Courtyards - Class P4*(exceeds maximum)

Public Lighting Report

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	Road/Paths	-9.39	-2.79	374.25	351.31	1.50	1.49
2	Access Path	27.67	198.90	25.00	66.19	1.47	1.47
3	Courtyards	67.60	49.18	231.91	190.68	1.50	1.49

Luminaires

Luminaire A Data

Supplier	
Type	Veelite Metro Streetlight 36w LED Street Optic R03
Lamp(s)	16LED 4K
Lamp Flux (klm)	4.24
File Name	5MTA12LGA-R03.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	537.8, 56.5, 0.3
No. in Project	22

Luminaire B Data

Supplier	
Type	Veelite Metro Streetlight 36w LED Forward Throw Optic
Lamp(s)	16LED 4000K
Lamp Flux (klm)	4.05
File Name	5MTA12LGA-FTA.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	515.0, 204.0, 0.0
No. in Project	19

Luminaire C Data

Supplier	
Type	Veelite LED Bollard 12w LED Asymmetric XW
Lamp(s)	1 x 4LED 4000K
Lamp Flux (klm)	0.94
File Name	5BLE00310 - LED Bollard 1 x 4LED 12W Asymmetric XW Optic.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	895.2, 629.1, 39.2
No. in Project	8

Luminaire D Data

Supplier	
Type	Veelite Chi Series 27w LED Symmetric Optic C6
Lamp(s)	16LED 4000K
Lamp Flux (klm)	2.81
File Name	5CHI11LGA-C6.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	305.0, 124.5, 32.3
No. in Project	11

Luminaire E Data

Supplier	
Type	Veelite Chi Series 27w LED Street Optic Wide A13
Lamp(s)	16LED 4000K
Lamp Flux (klm)	2.81
File Name	5CHI11LGA-A13.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	533.9, 296.7, 70.9
No. in Project	3

Luminaire F Data

Supplier	
Type	Veelite Quadro Bollard 26w LED Symmetric
Lamp(s)	LED 4000K
Lamp Flux (klm)	3.53
File Name	G1369.CHX.T Quadro Bollard 26W Led 4K.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	50.6, 35.9, 21.7
No. in Project	48

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	48.82	49.39	6.00	92.00	0.00	0.00	0.50			
2	A	105.27	49.05	6.00	91.00	0.00	0.00	0.50			
3	B	153.50	44.60	6.00	91.00	0.00	0.00	0.50			
4	B	184.69	43.84	6.00	91.00	0.00	0.00	0.50			
5	B	209.57	40.07	6.00	83.00	5.00	0.00	0.50			
6	B	237.81	35.90	6.00	90.00	0.00	0.00	0.50			
7	B	298.65	34.84	6.00	90.00	0.00	0.00	0.50			
8	B	219.10	67.00	6.00	0.00	0.00	0.00	0.50			
9	B	219.68	92.20	6.00	0.00	0.00	0.00	0.50			
10	B	219.62	128.16	6.00	0.00	5.00	0.00	0.50			
11	B	219.55	154.08	6.00	0.00	0.00	0.00	0.50			
12	A	212.64	161.97	6.00	91.00	0.00	0.00	0.50			
13	A	172.37	162.20	6.00	90.00	0.00	0.00	0.50			
14	B	146.20	155.40	6.00	176.00	0.00	0.00	0.50			
15	B	145.80	134.70	6.00	180.00	0.00	0.00	0.50			
16	B	146.81	107.20	6.00	180.00	0.00	0.00	0.50			
17	B	145.11	75.70	6.00	180.00	5.00	0.00	0.50			
18	A	48.77	89.74	6.00	180.00	0.00	0.00	0.50			
19	A	46.40	116.21	6.00	174.00	0.00	0.00	0.50			
20	A	46.30	145.18	6.00	180.00	0.00	0.00	0.50			
21	B	52.57	162.65	6.00	90.00	5.00	0.00	0.50			
22	A	86.46	162.51	6.00	91.00	0.00	0.00	0.50			
23	A	125.71	162.46	6.00	90.00	0.00	0.00	0.50			
26	B	315.00	49.87	6.00	270.00	0.00	0.00	0.50			
27	A	139.46	49.40	6.00	90.00	5.00	0.00	0.50			
28	B	153.92	192.08	6.00	180.00	0.00	0.00	0.50			
29	A	143.46	246.66	6.00	179.00	0.00	0.00	0.50			
30	A	144.13	221.78	6.00	350.00	0.00	0.00	0.50			
29	B	267.49	35.13	6.00	82.00	0.00	0.00	0.50			
42	A	314.39	102.41	6.00	273.00	0.00	0.00	0.50			
43	E	289.26	101.85	4.00	91.00	0.00	0.00	0.00			
45	B	328.44	82.38	6.00	270.00	0.00	0.00	0.50			
46	B	307.89	83.56	6.00	270.00	5.00	0.00	0.50			
47	A	315.02	50.52	6.00	90.00	0.00	0.00	0.50			
53	D	42.76	65.89	4.00	0.00	0.00	0.00	0.00			
54	D	78.03	71.51	4.00	0.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
55	D	98.51	68.04	4.00	0.00	0.00	0.00	0.00			
39	A	72.66	49.29	6.00	90.00	0.00	0.00	0.50			
40	D	60.26	74.48	4.00	0.00	0.00	0.00	0.00			
41	D	57.34	102.77	4.00	0.00	0.00	0.00	0.00			
42	D	79.95	103.11	4.00	100.00	0.00	0.00	0.00			
43	D	98.46	108.24	4.00	0.00	0.00	0.00	0.00			
44	D	122.75	103.57	4.00	0.00	0.00	0.00	0.00			
45	D	164.40	103.85	4.00	0.00	0.00	0.00	0.00			
46	D	185.64	108.39	4.00	0.00	0.00	0.00	0.00			
47	D	208.24	106.94	4.00	0.00	0.00	0.00	0.00			
48	E	259.01	101.99	4.00	86.00	0.00	0.00	0.00			
48	E	238.94	102.91	4.00	89.00	0.00	0.00	0.00			
49	A	57.27	262.39	6.00	64.00	0.00	0.00	0.50			
50	A	96.71	257.16	6.00	88.00	0.00	0.00	0.50			
51	A	134.36	264.19	6.00	96.00	0.00	0.00	0.50			
52	A	169.24	271.22	6.00	103.00	0.00	0.00	0.50			
53	A	202.44	279.69	6.00	99.00	0.00	0.00	0.50			
54	C	39.17	196.46	1.00	340.00	0.00	0.00	0.00			
55	C	42.91	209.42	1.00	334.00	0.00	0.00	0.00			
56	C	50.87	219.57	1.00	153.00	0.00	0.00	0.00			
57	C	52.16	231.52	1.00	331.00	0.00	0.00	0.00			
58	C	46.51	195.85	1.00	153.00	0.00	0.00	0.00			
59	C	58.43	243.37	1.00	161.00	0.00	0.00	0.00			
60	A	78.42	250.14	6.00	64.00	0.00	0.00	0.50			
61	A	120.64	247.94	6.00	85.00	0.00	0.00	0.50			
62	C	50.81	206.81	2.30	157.00	0.00	0.00	0.00			
63	C	61.52	250.28	2.30	337.00	0.00	0.00	0.00			
64	F	78.55	223.03	0.90	64.00	0.00	0.00	0.00			
65	F	84.51	227.36	0.90	64.00	0.00	0.00	0.00			
66	F	106.22	227.28	0.90	64.00	0.00	0.00	0.00			
67	F	74.54	212.93	0.90	64.00	0.00	0.00	0.00			
68	F	74.08	204.44	0.90	64.00	0.00	0.00	0.00			
69	F	85.33	204.24	0.90	64.00	0.00	0.00	0.00			
70	F	96.42	204.19	0.90	64.00	0.00	0.00	0.00			
71	F	107.92	204.02	0.90	64.00	0.00	0.00	0.00			
72	F	114.99	198.60	0.90	64.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
73	F	97.53	215.14	0.90	64.00	0.00	0.00	0.00			
74	F	106.73	221.96	0.90	64.00	0.00	0.00	0.00			
75	F	115.34	227.45	0.90	83.00	0.00	0.00	0.00			
76	F	117.95	218.08	0.90	64.00	0.00	0.00	0.00			
77	F	95.58	227.36	0.90	64.00	0.00	0.00	0.00			
78	F	118.16	206.98	0.90	64.00	0.00	0.00	0.00			
79	F	72.52	138.93	0.90	64.00	0.00	0.00	0.00			
80	F	71.74	128.41	0.90	64.00	0.00	0.00	0.00			
81	F	74.42	119.34	0.90	64.00	0.00	0.00	0.00			
82	F	82.27	133.77	0.90	64.00	0.00	0.00	0.00			
83	F	90.16	133.81	0.90	64.00	0.00	0.00	0.00			
84	F	104.01	138.80	0.90	64.00	0.00	0.00	0.00			
85	F	97.84	133.48	0.90	64.00	0.00	0.00	0.00			
86	F	105.12	127.08	0.90	64.00	0.00	0.00	0.00			
87	F	95.72	123.83	0.90	64.00	0.00	0.00	0.00			
88	F	82.15	123.39	0.90	64.00	0.00	0.00	0.00			
89	F	88.69	117.96	0.90	64.00	0.00	0.00	0.00			
90	F	81.84	88.05	0.90	64.00	0.00	0.00	0.00			
91	F	93.94	87.55	0.90	64.00	0.00	0.00	0.00			
92	F	104.17	90.62	0.90	64.00	0.00	0.00	0.00			
93	F	104.40	82.13	0.90	64.00	0.00	0.00	0.00			
94	F	172.38	83.89	0.90	64.00	0.00	0.00	0.00			
95	F	175.61	92.81	0.90	64.00	0.00	0.00	0.00			
96	F	185.68	86.09	0.90	64.00	0.00	0.00	0.00			
97	F	194.81	79.29	0.90	64.00	0.00	0.00	0.00			
98	F	258.19	74.59	0.90	64.00	0.00	0.00	0.00			
99	F	259.36	63.97	0.90	64.00	0.00	0.00	0.00			
100	F	263.84	52.36	0.90	64.00	0.00	0.00	0.00			
101	F	275.53	57.12	0.90	64.00	0.00	0.00	0.00			
102	F	277.00	67.74	0.90	64.00	0.00	0.00	0.00			
103	F	278.35	75.99	0.90	64.00	0.00	0.00	0.00			
104	F	267.12	64.46	0.90	64.00	0.00	0.00	0.00			
105	F	268.97	73.35	0.90	64.00	0.00	0.00	0.00			
106	F	190.52	137.41	0.90	82.00	0.00	0.00	0.00			
107	F	172.54	134.40	0.90	64.00	0.00	0.00	0.00			
108	F	191.23	125.75	0.90	64.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
109	F	182.15	127.51	0.90	64.00	0.00	0.00	0.00			
110	F	173.49	123.29	0.90	64.00	0.00	0.00	0.00			
111	F	181.80	137.53	0.90	64.00	0.00	0.00	0.00			

Horizontal Illuminance (lux)

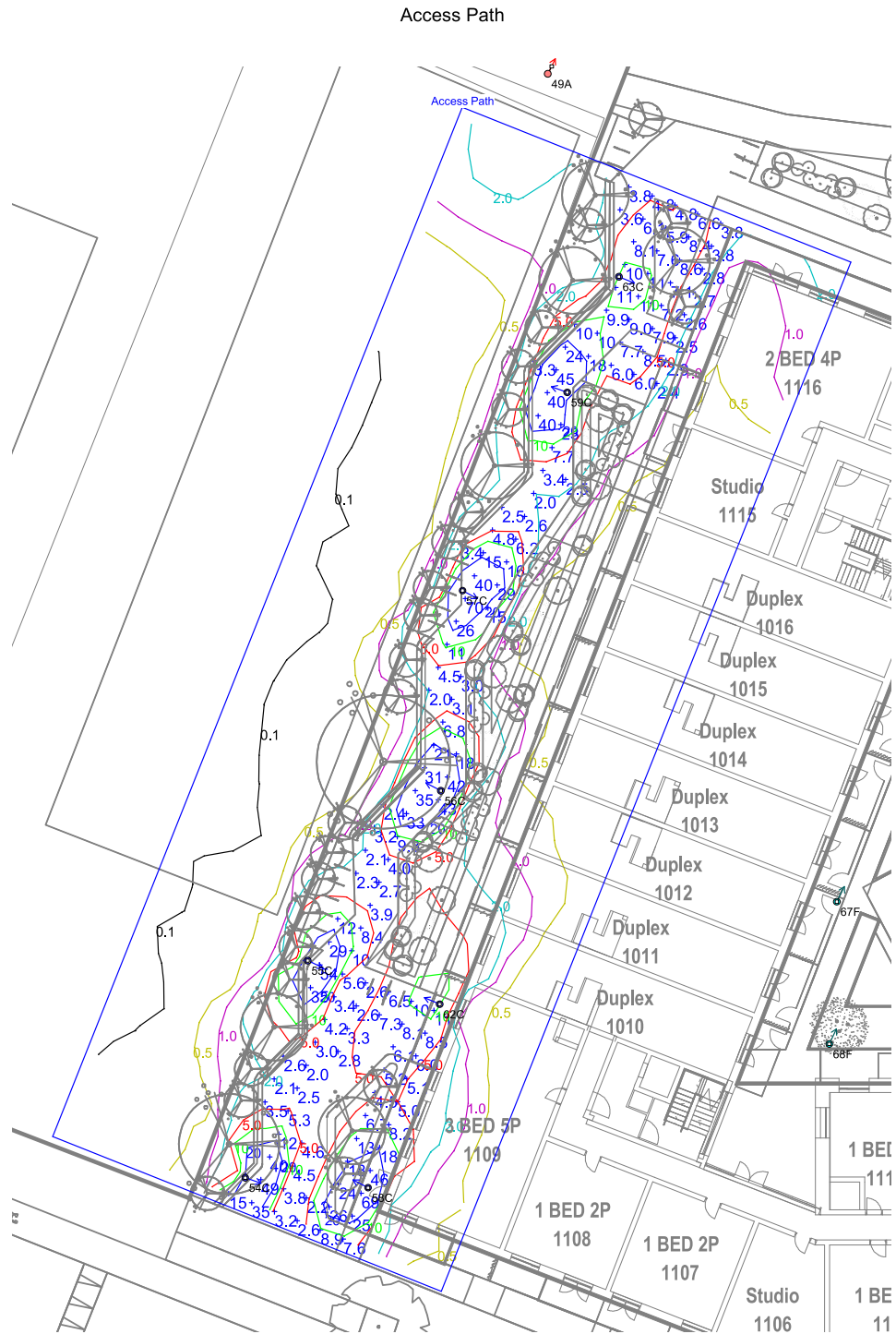
Road/Paths



Results

Eav	6.33
Emin	1.00
Emax	33.17
Emin/Emax	0.03
Emin/Eav	0.16

Horizontal Illuminance (lux)

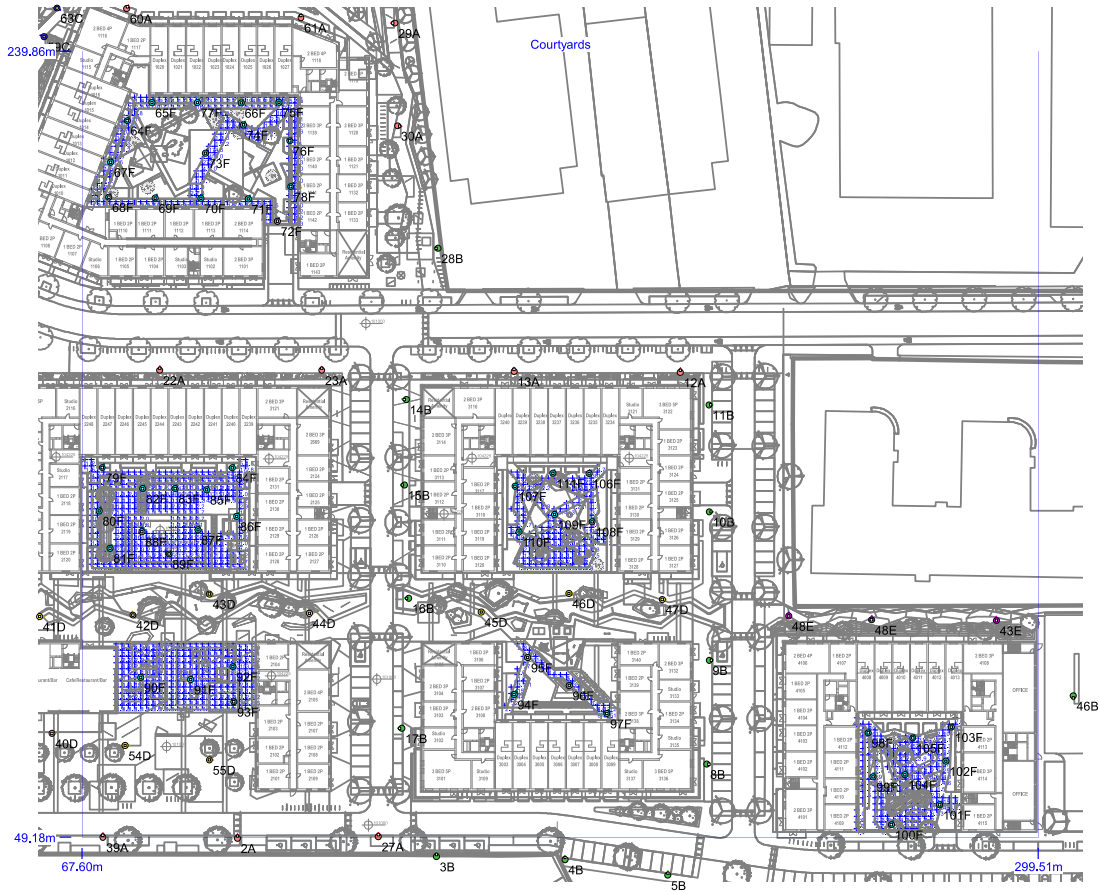


Results

Eav	12.53
Emin	2.03
Emax	69.92
Emin/Emax	0.03
Emin/Eav	0.16

Horizontal Illuminance (lux)

Courtyards



Results

Eav	7.95
Emin	1.00
Emax	61.14
Emin/Emax	0.02
Emin/Eav	0.13

Horizontal Illuminance (lux)

Road/Paths



Results

Eav	6.33
Emin	1.00
Emax	33.17
Emin/Emax	0.03
Emin/Eav	0.16