

LiDL South Ruislip

Installation : Carpark Lighting proposal

Project number :
Customer :
Processed by : HSR
Date : 16.10.2014

Project description:
Maintenance Factor 0.73

No obstructions are considered in these lighting calculations.

Lighting levels take into account approximated spill light from the stores sales area.

Carpark Lighting levels conform to BS EN 12464-2. Table 5.9 section 5.9.2. (10Lux Ave with 25% uniformity)

Service Yard not considered as loading area but area with slow moving vehicles, therefore, lighting level designed to 10lux ave with 40% uniformity.

Lanterns mounted on 8m and wall lanterns at 6m. Liinear wall lanterns mounted at 2.7m.

The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

Lighting Proposal. See attached Appendix A.

The following values are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

Guarantee claims for luminaire data are excluded.

Relux and the luminaire manufacturers accept no liability for consequential damage and damage which is occasioned to the user or to third parties.

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1 Carpark

1.1 Description, Carpark

1.1.1 Luminaire data/Room elements

Product data:

Type No.\Make

Philips Lighting

1	18		Order No. : ! Luminaire name : BGP303 1xLED49/740 DM (8m MH) Equipment : 1 x LED49/740/- / 5040 lm
2	7		Order No. : Luminaire name : BBS490 1xDLED-4000 PG Equipment : 1 x DLED-4000 / 2260 lm
3	7		Order No. : Luminaire name : WT460C L1300 1xLED23S/840 WB Equipment : 1 x LED23S/840/- / 2600 lm
4	11		Order No. : ! Luminaire name : TMS122 1xTL5-35W HFP Equipment : 1 x TL5-35W/840 / 1000 lm
5	2		Order No. : !Wall mounted at 6m Luminaire name : BGP303 1xLED49/740 DM Wall Mounted at 6m Equipment : 1 x LED49/740/- / 5040 lm

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1 Carpark

1.1 Description, Carpark

1.1.1 Luminaire data/Room elements

No.	Centre point			Rotation angle			Target coordinates		
	X [m]	Y [m]	Z [m]	Z [°]	C0 [°]	C90 [°]	Xa [m]	Ya [m]	Za [m]
Philips Lighting BGP303 1xLED49/740 DM (8m MH) !									
1	117.22	168.55	8.00	0.00	5.00	0.00	117.22	174.57	0.00
3	117.22	167.51	8.00	180.00	15.00	0.00	117.22	158.93	0.00
4	142.98	167.77	8.00	0.00	5.00	0.00	142.98	173.79	0.00
5	142.98	166.73	8.00	180.00	15.00	0.00	142.98	158.15	0.00
6	168.01	168.17	8.00	0.00	5.00	0.00	168.01	174.20	0.00
7	168.01	167.13	8.00	180.00	15.00	0.00	168.01	158.56	0.00
8	195.49	168.49	8.00	0.00	5.00	0.00	195.49	174.52	0.00
9	195.49	167.46	8.00	180.00	15.00	0.00	195.49	158.88	0.00
10	209.30	171.27	8.00	90.00	5.00	0.00	203.27	171.27	0.00
11	191.36	183.65	8.00	180.00	5.00	0.00	191.37	177.62	0.00
14	141.39	182.64	8.00	180.00	5.00	0.00	141.39	176.61	0.00
15	116.66	182.25	8.00	180.00	5.00	0.00	116.66	176.22	0.00
16	212.60	151.42	8.00	90.00	5.00	0.00	206.57	151.42	0.00
18	194.03	150.04	8.00	270.00	5.00	0.00	200.05	150.04	0.00
22	166.38	183.04	8.00	180.00	5.00	0.00	166.38	177.01	0.00
26	212.32	124.79	8.00	90.00	15.00	0.00	203.74	124.79	0.00
27	212.16	138.21	8.00	90.00	15.00	0.00	203.58	138.21	0.00
29	103.65	166.41	8.00	270.00	5.00	0.00	109.68	166.41	0.00
Philips Lighting BBS490 1xDLED-4000 PG									
3.1	118.71	154.64	3.00	0.20	0.00	0.00	118.71	154.64	0.00
3.2	121.71	154.64	3.00	0.20	0.00	0.00	121.71	154.64	0.00
3.3	124.71	154.64	3.00	0.20	0.00	0.00	124.71	154.64	0.00
3.4	127.71	154.64	3.00	0.20	0.00	0.00	127.71	154.64	0.00
3.5	130.71	154.64	3.00	0.20	0.00	0.00	130.71	154.64	0.00
3.6	133.71	154.64	3.00	0.20	0.00	0.00	133.71	154.64	0.00
3.7	136.71	154.64	3.00	0.20	0.00	0.00	136.71	154.64	0.00
Philips Lighting WT460C L1300 1xLED23S/840 WB									
x 1	-1.#R	-1.#R	-1.#R	0.00	-90.00	89.30	--	--	--
1.1	111.17	137.67	2.70	0.70	0.00	90.00	--	--	--
30	111.24	132.59	2.70	0.70	0.00	90.00	--	--	--
31	111.22	129.73	2.70	0.70	0.00	90.00	--	--	--
32	111.37	121.48	2.70	0.70	0.00	90.00	--	--	--
33	111.32	125.00	2.70	0.70	0.00	90.00	--	--	--
34	110.95	149.44	2.70	1.00	0.00	90.00	--	--	--
35	111.04	143.94	2.70	1.00	0.00	90.00	--	--	--
Philips Lighting TMS122 1xTL5-35W HFP !									
2.1	119.28	150.41	2.96	270.00	0.00	0.00	119.28	150.41	0.00
2.2	120.78	150.41	2.96	270.00	0.00	0.00	120.78	150.41	0.00
2.3	122.28	150.41	2.96	270.00	0.00	0.00	122.28	150.41	0.00
2.4	123.78	150.41	2.96	270.00	0.00	0.00	123.78	150.41	0.00
2.5	125.28	150.41	2.96	270.00	0.00	0.00	125.28	150.41	0.00
2.6	126.78	150.41	2.96	270.00	0.00	0.00	126.78	150.41	0.00
2.7	128.28	150.41	2.96	270.00	0.00	0.00	128.28	150.41	0.00
2.8	129.78	150.41	2.96	270.00	0.00	0.00	129.78	150.41	0.00
2.9	131.28	150.41	2.96	270.00	0.00	0.00	131.28	150.41	0.00
2.10	132.78	150.41	2.96	270.00	0.00	0.00	132.78	150.41	0.00
2.11	134.28	150.41	2.96	270.00	0.00	0.00	134.28	150.41	0.00
Philips Lighting BGP303 1xLED49/740 DM Wall Mounted at 6m !Wall mounted at 6m									
23	189.29	139.77	6.00	270.00	10.00	0.00	194.70	139.77	0.00
28	189.42	124.93	6.00	270.00	10.00	0.00	194.82	124.93	0.00

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1 Carpark

1.1 Description, Carpark

1.1.1 Luminaire data/Room elements

Virtual measuring surface

No.	xm[m]	ym[m]	zm[m]	Length	Width	z axis	Rotation angle	
							L axis	Q axis
Carpark								
m 1	103.49	182.17	0.00	108.98	41.20	0.78	0.00	0.00
Service Yard								
m 2	189.25	143.12	0.00	23.19	23.46	1.09	0.00	0.00
Lorry Loading								
m 4	104.05	152.81	0.00	5.70	31.46	0.00	0.00	0.00

Others

No.	xm[m]	ym[m]	zm[m]	Length	Width	z axis	Rotation angle	
							L axis	Q axis
A 1	111.09	152.27	0.00	84.86	69.00	0.63	0.00	0.00
A 2	117.33	152.26	3.00	21.53	3.81	270.63	0.00	0.00

1.1 Description, Carpark

1.1.2 Floor plan

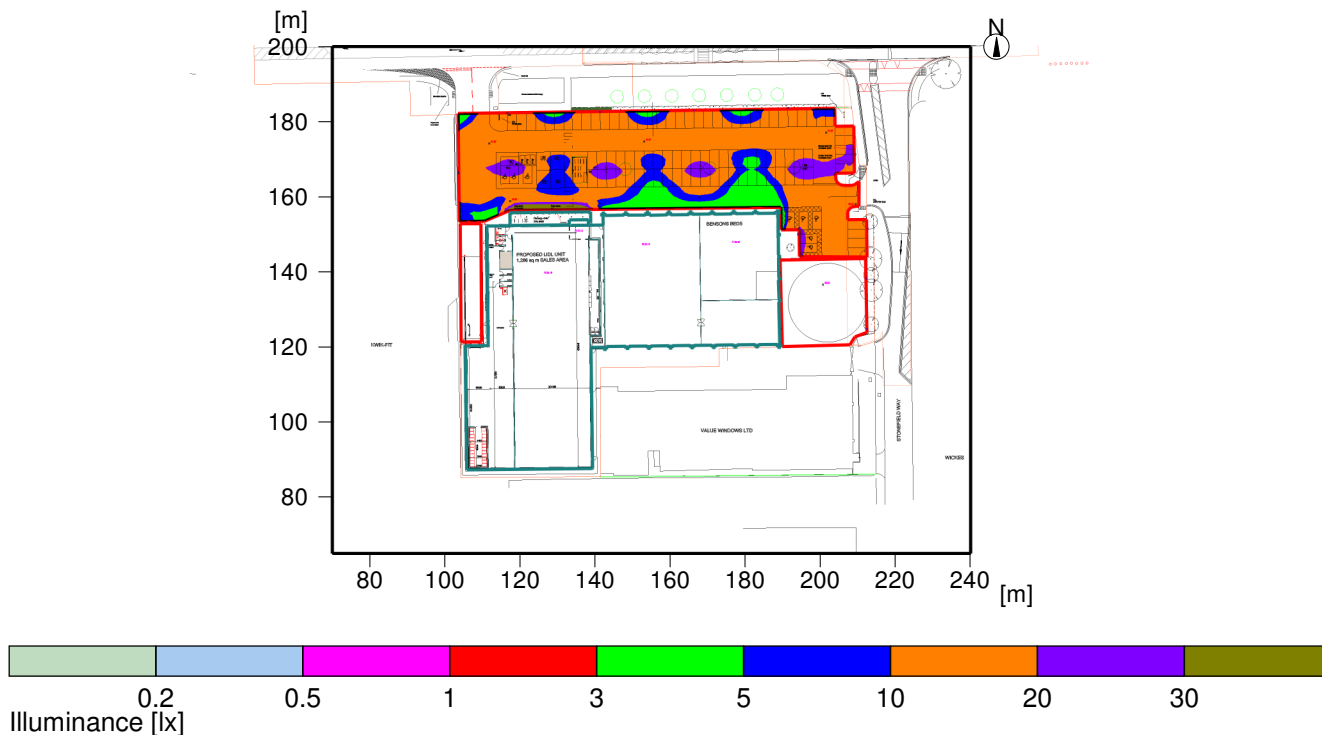


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1 Carpark

1.2 Summary, Carpark

1.2.1 Result overview, Carpark



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.73

Total luminous flux of all lamps	145820 lm
Total power	1955.5 W
Total power per area (22950.00 m ²)	0.09 W/m ²

Illuminance

Average illuminance	Eav	13.7 lx
Minimum illuminance	Emin	5.4 lx
Maximum illuminance	Emax	44.8 lx
Uniformity Uo	Emin/Emax	1:2.53 (0.4)
Diversity Ud	Emin/Emax	1:8.24 (0.12)

Type No. Make

Philips Lighting	
1	18
	Order No. : ! Luminaire name : BGP303 1xLED49/740 DM (8m MH) Equipment : 1 x LED49/740/- / 5040 lm
2	7
	Order No. : Luminaire name : BBS490 1xDLED-4000 PG Equipment : 1 x DLED-4000 / 2260 lm

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1 Carpark

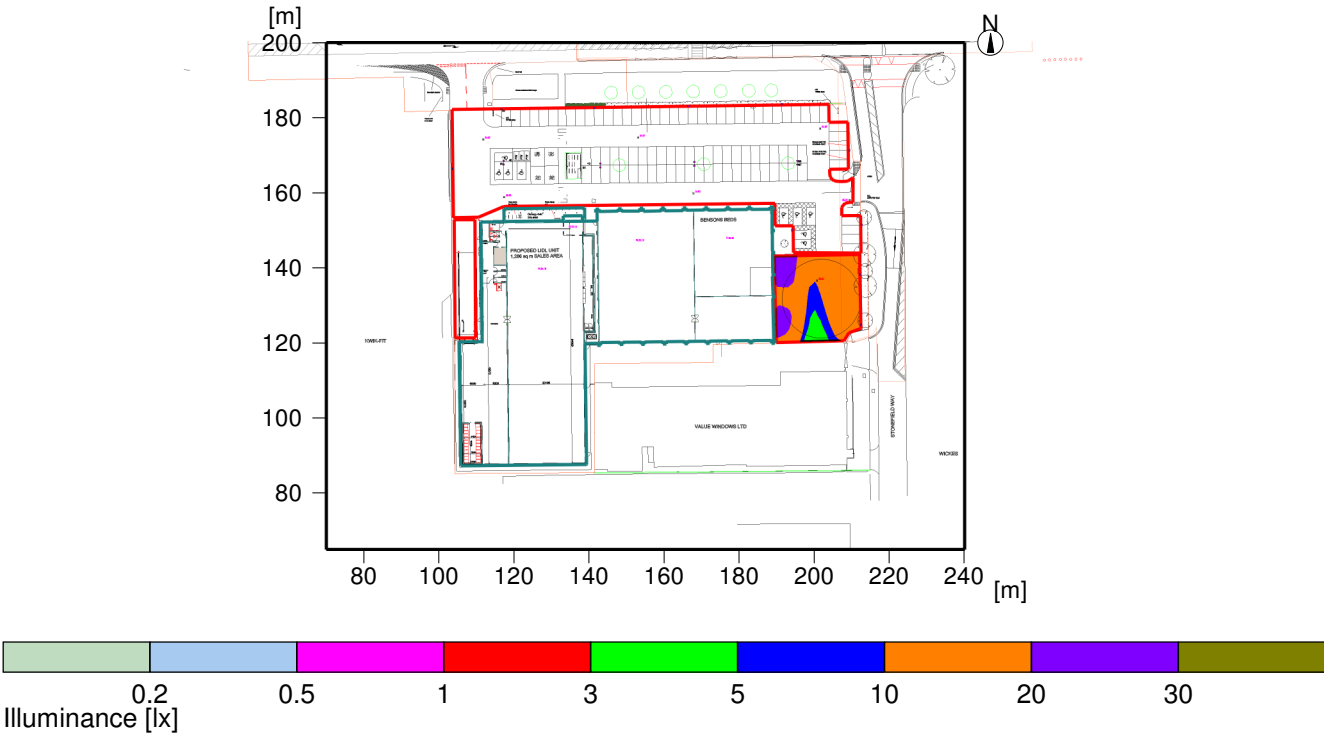
1.2 Summary, Carpark

1.2.1 Result overview, Carpark

3	7	Order No.	:	
		Luminaire name	:	WT460C L1300 1xLED23S/840 WB
		Equipment	:	1 x LED23S/840/- / 2600 lm
4	11	Order No.	:	!
		Luminaire name	:	TMS122 1xTL5-35W HFP
		Equipment	:	1 x TL5-35W/840 / 1000 lm
5	2	Order No.	:	!Wall mounted at 6m
		Luminaire name	:	BGP303 1xLED49/740 DM Wall Mounted at 6m
		Equipment	:	1 x LED49/740/- / 5040 lm

1.2 Summary, Carpark

1.2.2 Result overview, Service Yard



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.73

Total luminous flux of all lamps	145820 lm
Total power	1955.5 W
Total power per area (22950.00 m ²)	0.09 W/m ²

Illuminance

Average illuminance	Eav	15.1 lx
Minimum illuminance	Emin	5.9 lx
Maximum illuminance	E _{max}	29.3 lx
Uniformity U ₀	E _{min} /E _{max}	1:2.54 (0.39)
Diversity U _d	E _{min} /E _{max}	1:4.92 (0.2)

Type No. Make

Philips Lighting		
1	18	Order No. : !
		Luminaire name : BGP303 1xLED49/740 DM (8m MH)
		Equipment : 1 x LED49/740/- / 5040 lm
2	7	Order No. :
		Luminaire name : BBS490 1xDLED-4000 PG
		Equipment : 1 x DLED-4000 / 2260 lm

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1.2 Summary, Carpark

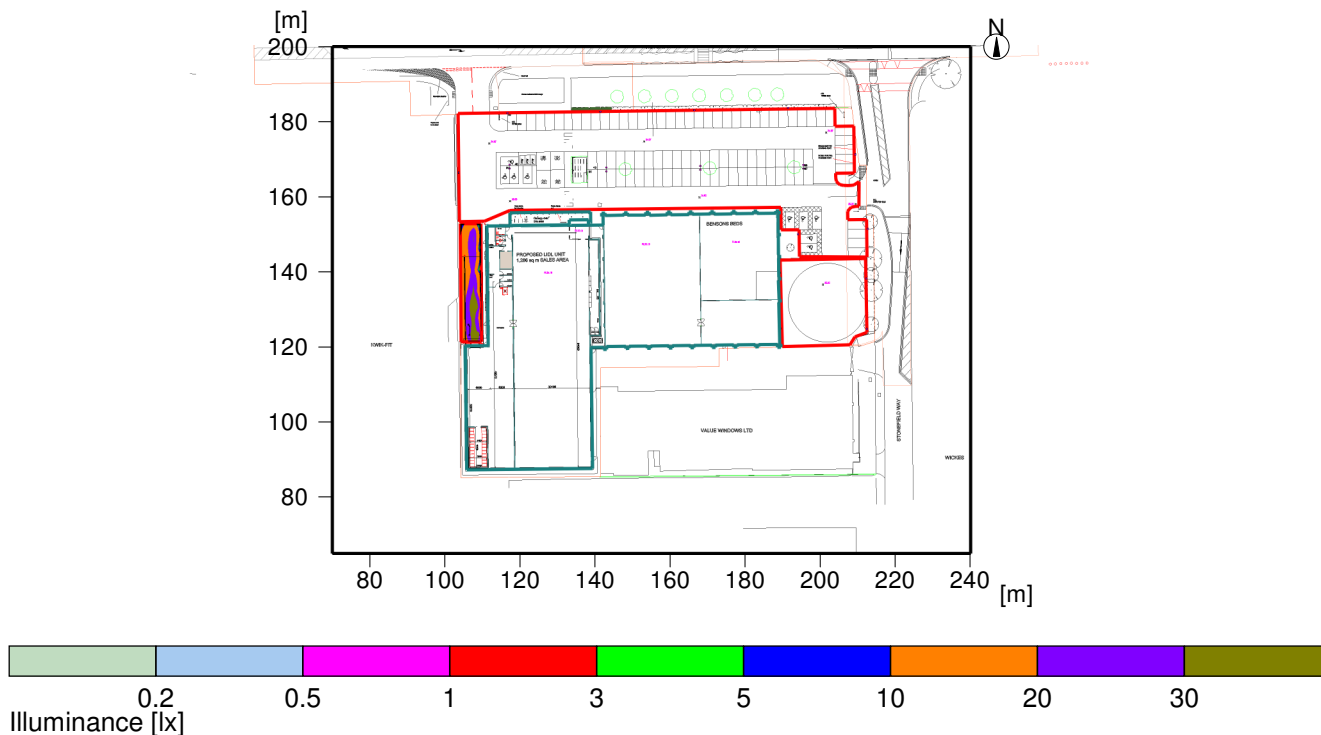
1.2.2 Result overview, Service Yard

3	7	Order No.	:	
		Luminaire name	:	WT460C L1300 1xLED23S/840 WB
		Equipment	:	1 x LED23S/840/- / 2600 lm
4	11	Order No.	:	!
		Luminaire name	:	TMS122 1xTL5-35W HFP
		Equipment	:	1 x TL5-35W/840 / 1000 lm
5	2	Order No.	:	!Wall mounted at 6m
		Luminaire name	:	BGP303 1xLED49/740 DM Wall Mounted at 6m
		Equipment	:	1 x LED49/740/- / 5040 lm

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1.2 Summary, Carpark

1.2.3 Result overview, Lorry Loading



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.73

Total luminous flux of all lamps	145820 lm
Total power	1955.5 W
Total power per area (22950.00 m ²)	0.09 W/m ²

Illuminance

Average illuminance	Eav	20.5 lx
Minimum illuminance	Emin	5.6 lx
Maximum illuminance	E _{max}	43.5 lx
Uniformity U ₀	E _{min} /E _{max}	1:3.63 (0.28)
Diversity U _d	E _{min} /E _{max}	1:7.71 (0.13)

Type No. Make

Philips Lighting	
1	18
	Order No. : ! Luminaire name : BGP303 1xLED49/740 DM (8m MH) Equipment : 1 x LED49/740/- / 5040 lm
2	7
	Order No. : Luminaire name : BBS490 1xDLED-4000 PG Equipment : 1 x DLED-4000 / 2260 lm

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1.2 Summary, Carpark

1.2.3 Result overview, Lorry Loading

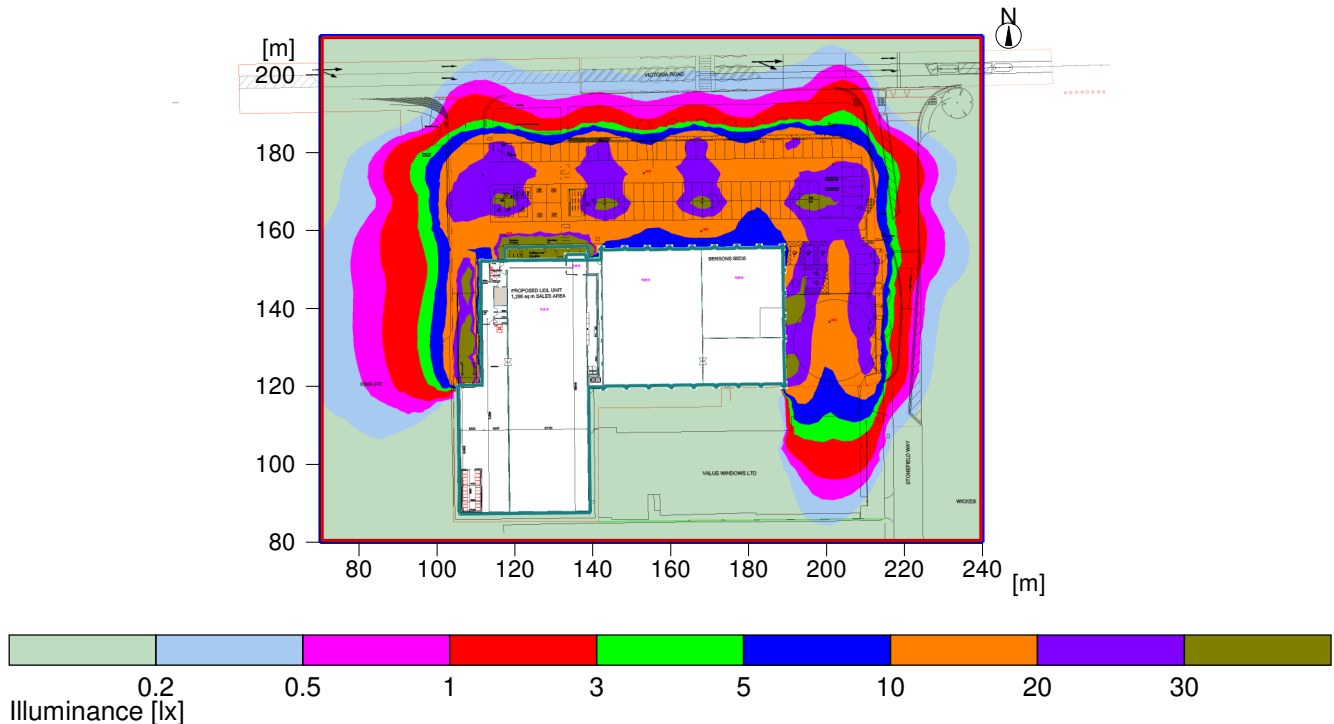
3	7	Order No.	:	
		Luminaire name	:	WT460C L1300 1xLED23S/840 WB
		Equipment	:	1 x LED23S/840/- / 2600 lm
4	11	Order No.	:	!
		Luminaire name	:	TMS122 1xTL5-35W HFP
		Equipment	:	1 x TL5-35W/840 / 1000 lm
5	2	Order No.	:	!Wall mounted at 6m
		Luminaire name	:	BGP303 1xLED49/740 DM Wall Mounted at 6m
		Equipment	:	1 x LED49/740/- / 5040 lm

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2 Carpark Spill Light

2.1 Summary, Carpark Spill Light

2.1.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	1.00
Total luminous flux of all lamps	145820 lm
Total power	1955.5 W
Total power per area (22100.00 m ²)	0.09 W/m ² (1.50 W/m ² /100lx)

Evaluation area 1

Reference plane 1.1

Horizontal	5.89 lx
Em	0 lx
Emin	0.00
Emin/Eav (Uo)	0.00
Emin/Emax (Ud)	0.00
Position	0.00 m

Type No.\Make

Philips Lighting	
1	18
	Order No. : !
	Luminaire name : BGP303 1xLED49/740 DM (8m MH)
	Equipment : 1 x LED49/740/- / 5040 lm
2	7
	Order No. :
	Luminaire name : BBS490 1xDLED-4000 PG
	Equipment : 1 x DLED-4000 / 2260 lm

Object : LiDL South Ruislip
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2 Carpark Spill Light

2.1 Summary, Carpark Spill Light

2.1.1 Result overview, Evaluation area 1

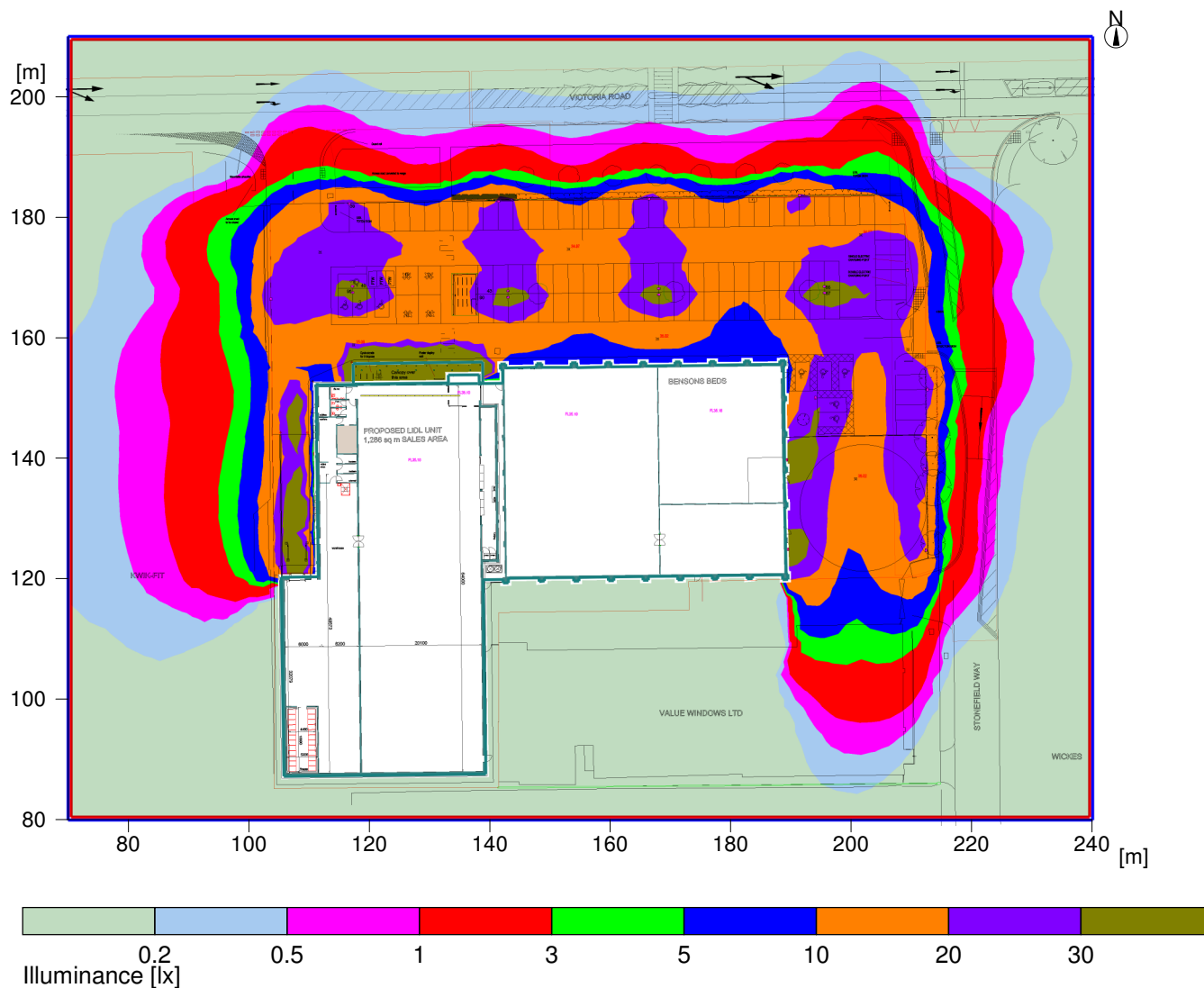
3	7	Order No.	:	
		Luminaire name	:	WT460C L1300 1xLED23S/840 WB
		Equipment	:	1 x LED23S/840/- / 2600 lm
4	11	Order No.	:	!
		Luminaire name	:	TMS122 1xTL5-35W HFP
		Equipment	:	1 x TL5-35W/840 / 1000 lm
5	2	Order No.	:	!Wall mounted at 6m
		Luminaire name	:	BGP303 1xLED49/740 DM Wall Mounted at 6m
		Equipment	:	1 x LED49/740/- / 5040 lm

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2 Carpark Spill Light

2.2 Calculation results, Carpark Spill Light

2.2.1 Pseudo colours, Reference plane 1.1 (E)



Height of the reference plane		: 0.00 m
Average illuminance	Eav	: 6 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 168 lx
Uniformity Uo	Emin/Eav	: 1 : 1636.92 (0.00)
Diversity Ud	Emin/Emax	: 1 : 46649.61 (0.00)