

Jubilee Park

Artificial Turf Pitch

Project code: CLS-LANO040
Date: 25-04-2025

Designer: ME

Description: Proposed Lighting

Match play:
Maintained average illuminance >200 lux
Uniformity Ratio (Ev.min/Ev.ave) >0.60

All luminaires have a zero upward light ratio without the use of additional accessories.

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.

Surfacing Standards LTD

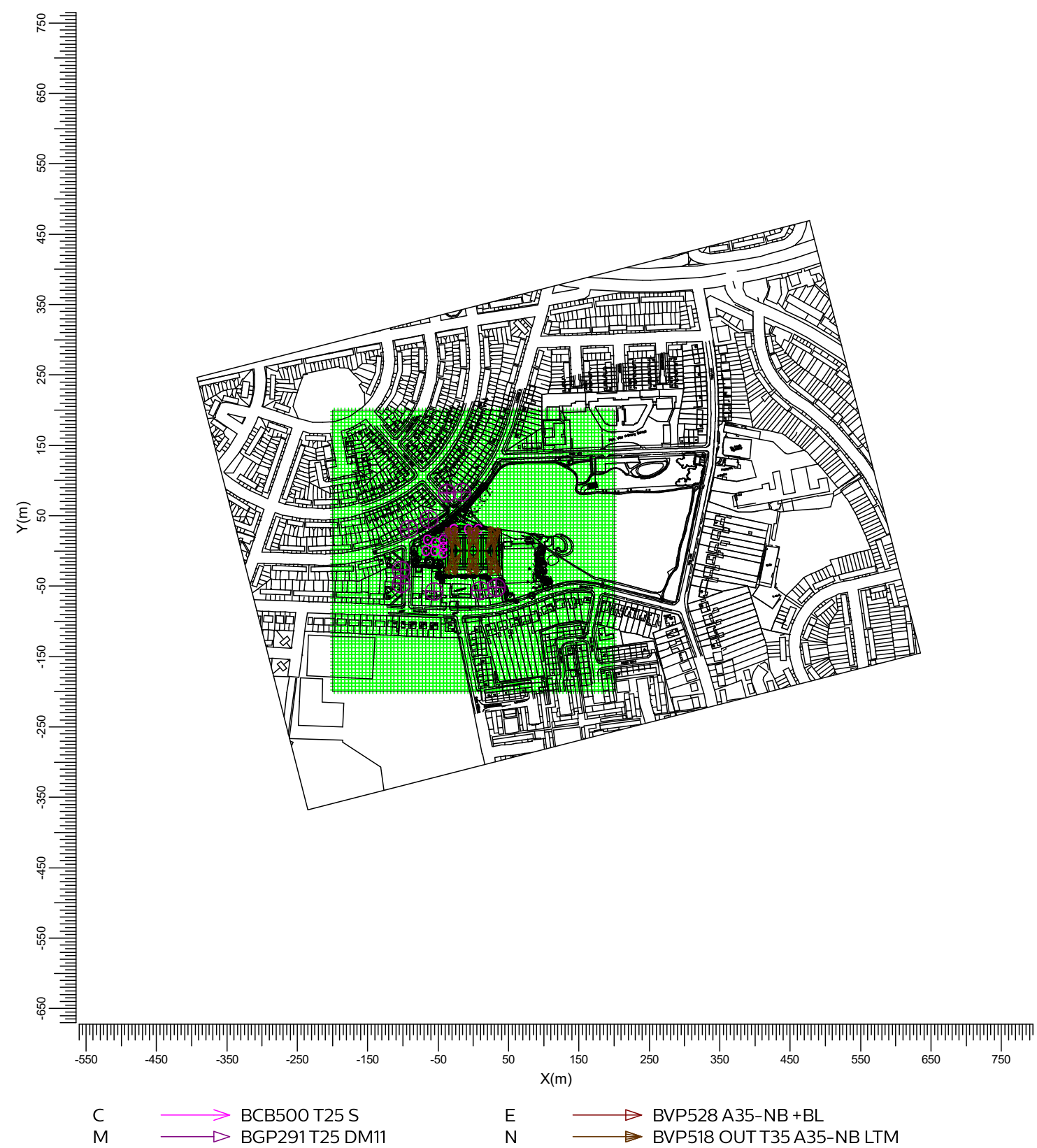
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1. Project Description

1.1 Top Project Overview



Scale
1:7500

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	House 1 - 1.8m	-103.07	-46.38	-0.00
Bb	House 1 - 3.6m	-103.07	-46.59	-0.00
Cc	House 2 - 1.8m	-103.12	-26.83	-0.00
Dd	House 2 - 3.6m	-102.91	-27.04	-0.00
Ee	House 3 - 1.8m	-91.87	31.04	-0.00
Ff	House 3 - 3.6m	-91.87	30.89	-0.00
Gg	House 4 - 1.8m	-63.29	45.28	-0.00
Hh	House 4 - 3.6m	-63.15	45.36	-0.00
Ii	House 5 - 1.8m	-37.85	82.52	-0.00
Jj	House 5 - 3.6m	-37.85	82.31	-0.00
Kk	House 6 - 1.8m	-16.34	83.41	-0.00
Ll	House 6 - 3.6m	-16.34	83.62	-0.00
Mm	House 7 - 1.8m	32.52	-51.90	-0.00
Nn	House 7 - 3.6m	32.27	-51.65	-0.00
Oo	House 8 - 1.8m	9.41	-55.77	-0.00
Pp	House 8 - 3.6m	9.41	-55.77	-0.00
Qq	House 9 - 1.8m	-55.59	-57.63	-0.00
Rr	House 9 - 3.6m	-55.59	-57.63	-0.00

2.2 Obstacle Information

Obstacle	Transparency (%)	Position		
		X (m)	Y (m)	Z (m)
Hedge	0	-82.00	-16.00	0.00
Hedge 2	0	-42.60	-19.10	0.00

2.3 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
C	11	BCB500 T25 S	1 * LED27/830	20.5	1 * 2700
M	2	BGP291 T25 DM11	1 * LED30-4S/740	20.0	1 * 3000
N	12	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1006.0	1 * 172000

The total installed power: 12.34 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code			Power (kWatt)
	C	M	N	
200lux Switching	0	0	12	-
120 Lux Switching	0	0	12	-
Spillage Switching	11	0	12	12.30
North Car Park	0	2	0	0.04
West Car Park	7	0	0	0.14

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code			Power (kWatt)
	C	M	N	
Car park north	0	2	0	0.04
Mast2	0	0	4	4.02
Mast5	0	0	8	8.05
Individuals	11	0	0	0.23

2.4 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	200lux Switching	0.90
2	120 Lux Switching	0.50
3	Spillage Switching	1.00
4	North Car Park	0.90
5	West Car Park	0.90

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Football 200 lux	1	Surface Illuminance	lux	230	0.62	0.48
Football 120 lux	2	Surface Illuminance	lux	128	0.62	0.48
Ground Spillage AGP	1	Surface Illuminance	lux	5.71	0.00	0.00
Ground Spillage AGP Zoom	1	Surface Illuminance	lux	5.71	0.00	0.00
Ground Spillage	3	Surface Illuminance	lux	9.17	0.00	0.00
Ground Spillage Zoom	3	Surface Illuminance	lux	9.17	0.00	0.00
Horizontal 3m	3	Horizontal Illuminance	lux			
Horizontal 3m Zoom	3	Horizontal Illuminance	lux			
South Carpark	5	Surface Illuminance	lux	8.02	0.33	0.09
North Carpark	4	Surface Illuminance	lux	3.74	0.41	0.18

Obtrusive Light Calculations:

Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
3	Aa	N	-30.00	26.50	10.00	-90.00	70.00	-0.00	749
3	Bb	N	-30.00	26.50	10.00	-90.00	70.00	-0.00	748
3	Cc	N	0.00	26.50	10.00	-105.06	70.00	-0.00	641
3	Dd	N	0.00	26.50	10.00	-105.06	70.00	-0.00	645
3	Ee	N	-30.00	-26.50	10.00	90.00	70.00	0.00	919
3	Ff	N	-30.00	-26.50	10.00	90.00	70.00	0.00	920
3	Gg	N	-30.00	-26.50	10.00	90.00	70.00	0.00	1282
3	Hh	N	-30.00	-26.50	10.00	90.00	70.00	0.00	1274
3	Ii	N	-30.00	-26.50	10.00	63.45	70.00	0.00	1025
3	Jj	N	-30.00	-26.50	10.00	63.45	70.00	0.00	1027
3	Kk	N	0.00	-26.50	10.00	74.94	70.00	-0.00	923
3	Ll	N	0.00	-26.50	10.00	74.94	70.00	-0.00	923
3	Mm	N	30.00	26.50	10.00	-116.55	70.00	0.00	1471
3	Nn	N	30.00	26.50	10.00	-116.55	70.00	0.00	1478

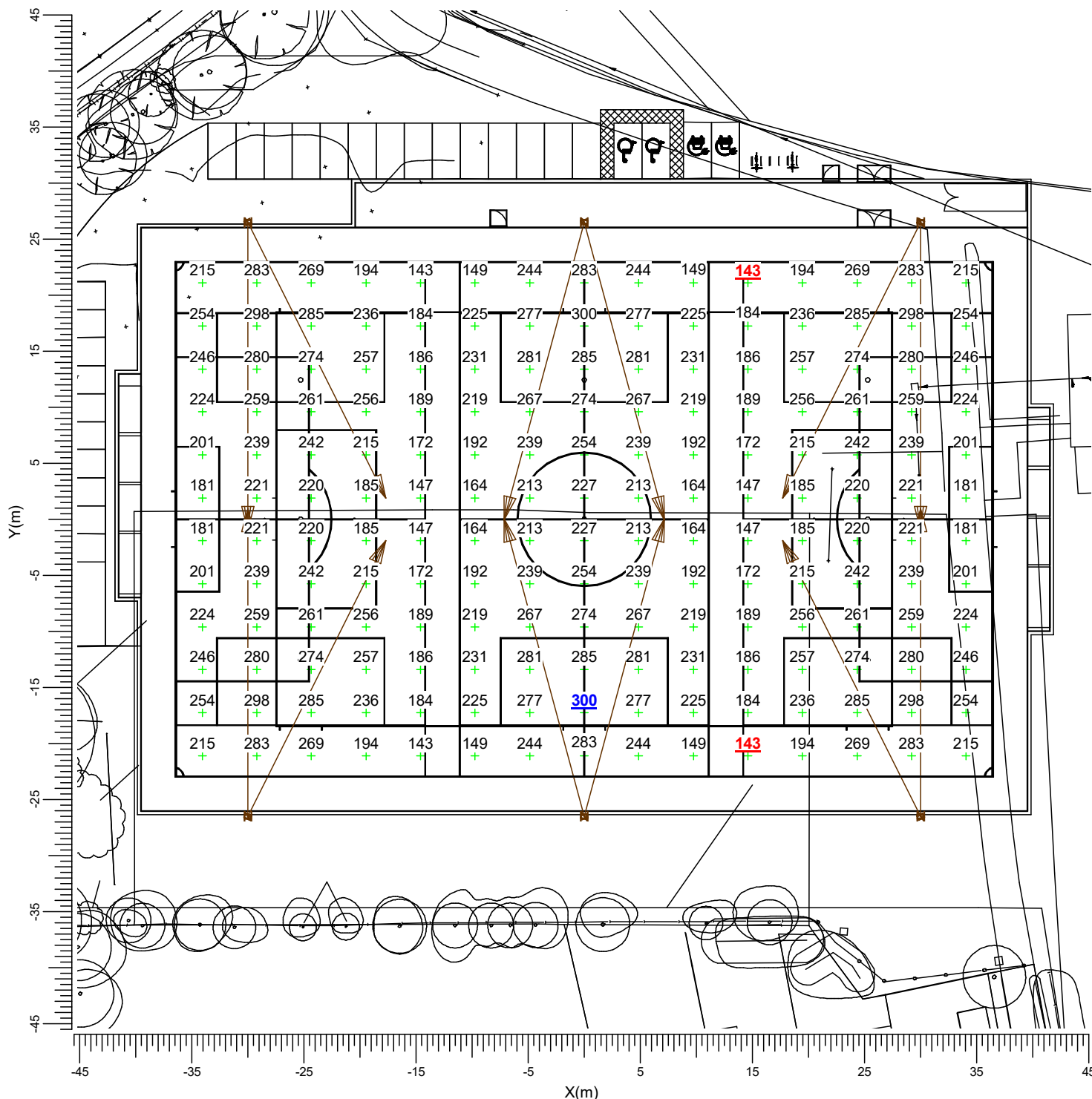
Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
3	Oo	N	-30.00	26.50	10.00	-90.00	70.00	-0.00	1123
3	Pp	N	-30.00	26.50	10.00	-90.00	70.00	-0.00	1123
3	Qq	N	30.00	26.50	10.00	-116.55	70.00	0.00	854
3	Rr	N	30.00	26.50	10.00	-116.55	70.00	0.00	854
Switching Mode	ULR								
1	0.00								
2	0.00								
3	0.00								
4	0.00								
5	0.09								

3. Calculation Results

3.1 Football 200 lux: Graphical Table

200lux Switching

Grid : Football at Z = -0.00 m
Calculation : Surface Illuminance (lux)



E

—▶ BVP528 A35-NB +BL

N

—▶ BVP518 OUT T35 A35-NB LTM

Average
230

Min/Ave
0.62

Min/Max
0.48

Project maintenance factor
0.90

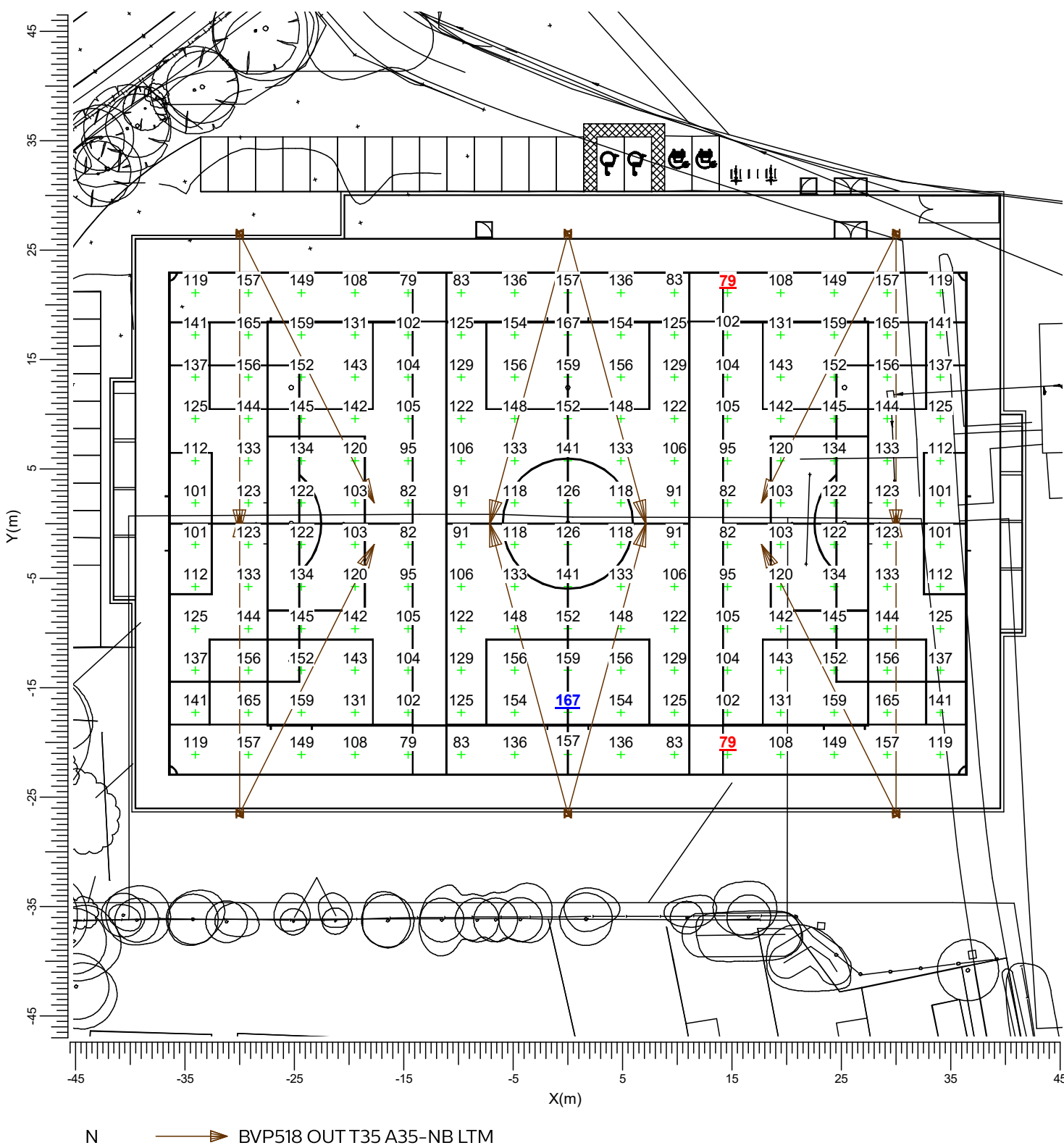
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3.2 Football 120 lux: Graphical Table

120 Lux Switching

Grid : Football at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average128

Min/Ave0.62

Min/Max0.48

Project maintenance factor0.50

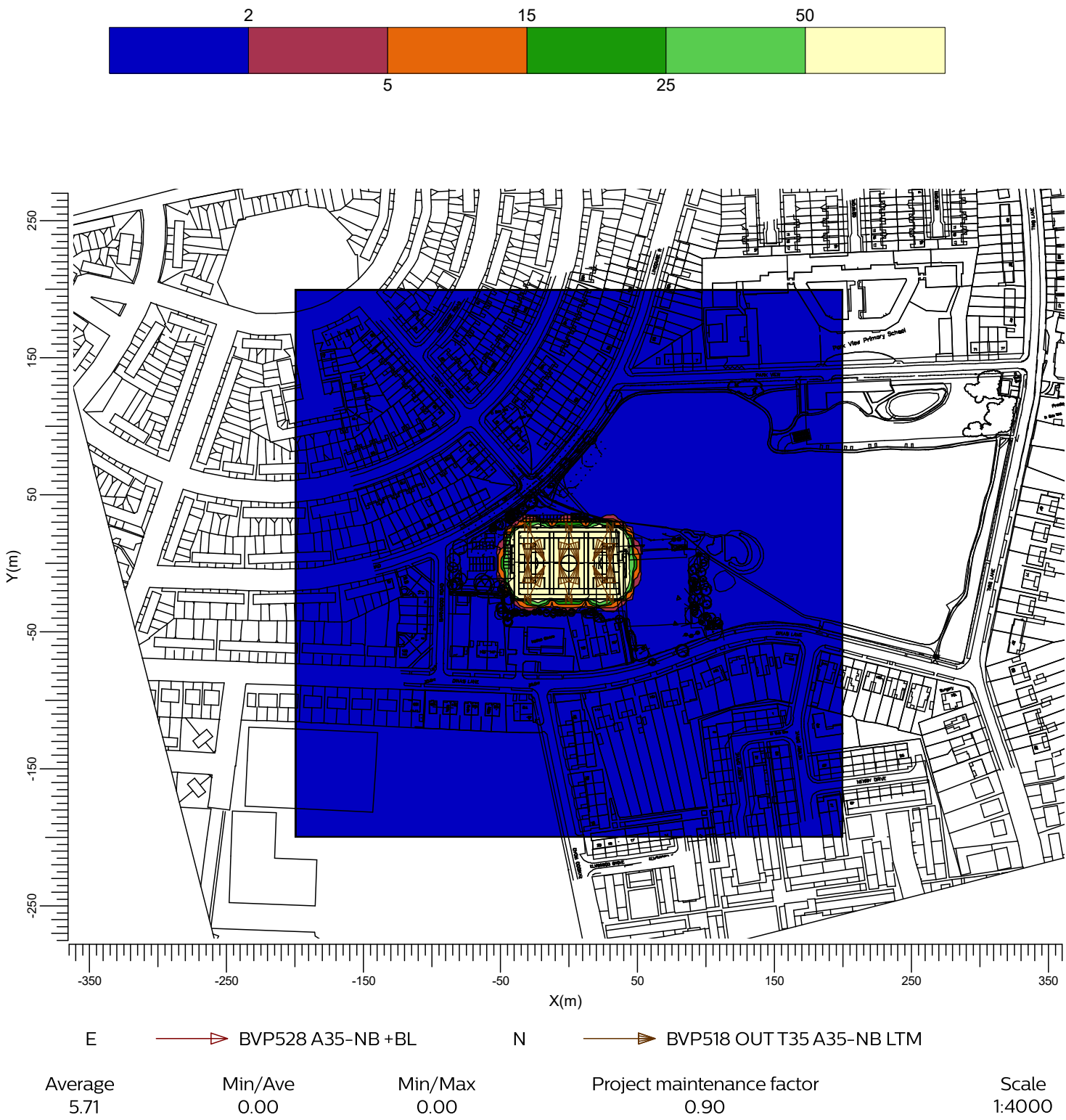
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3.3 Ground Spillage AGP: Filled Iso Contour

200lux Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Surface Illuminance (lux)

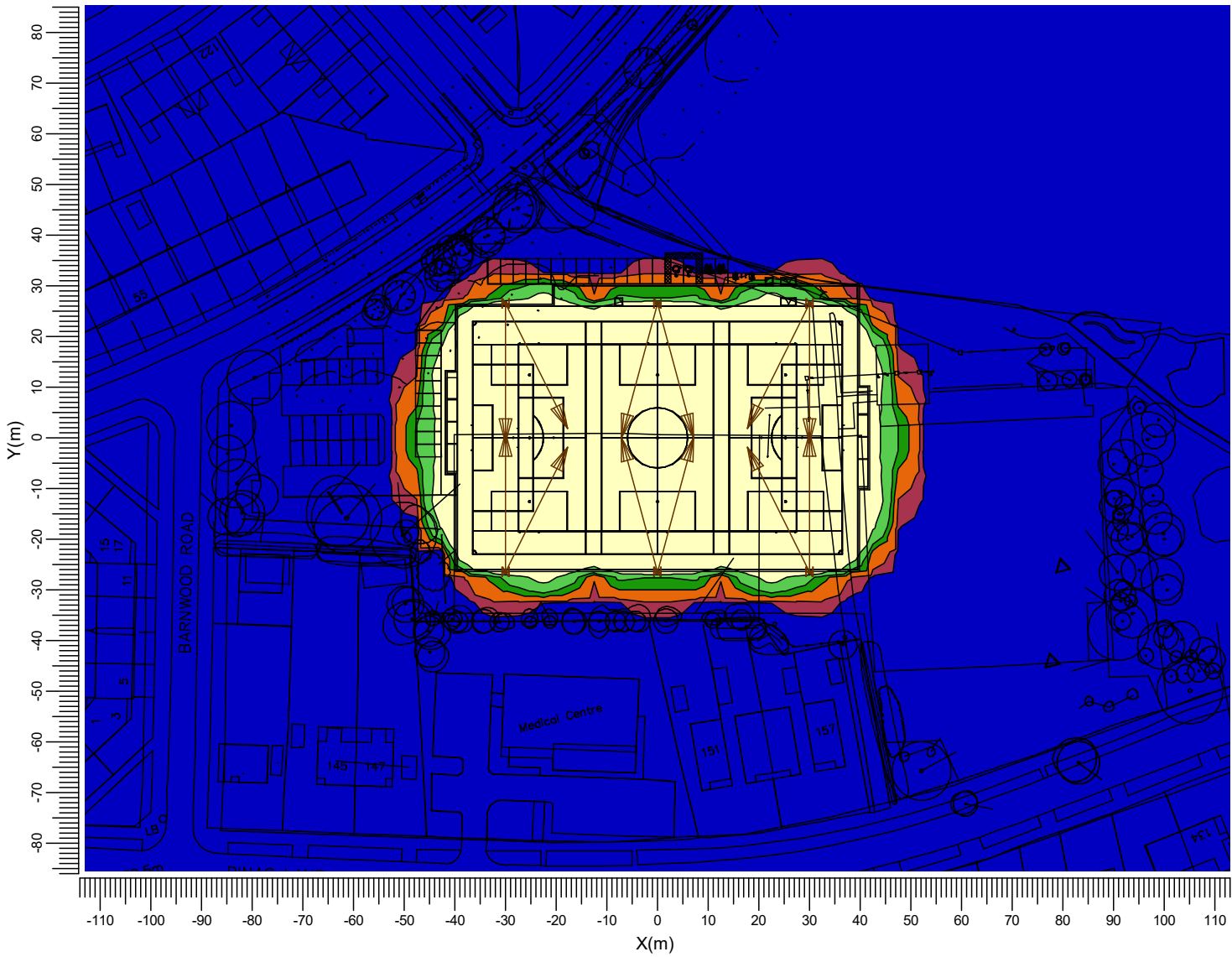
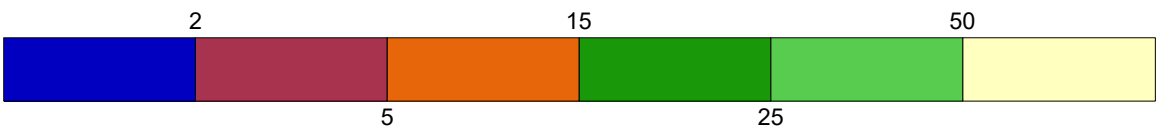


3.4 Ground Spillage AGP Zoom: Filled Iso Contour

200lux Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Surface Illuminance (lux)



E

—▶ BVP528 A35-NB +BL

N

—▶ BVP518 OUT T35 A35-NB LTM

Average
5.71

Min/Ave
0.00

Min/Max
0.00

Project maintenance factor
0.90

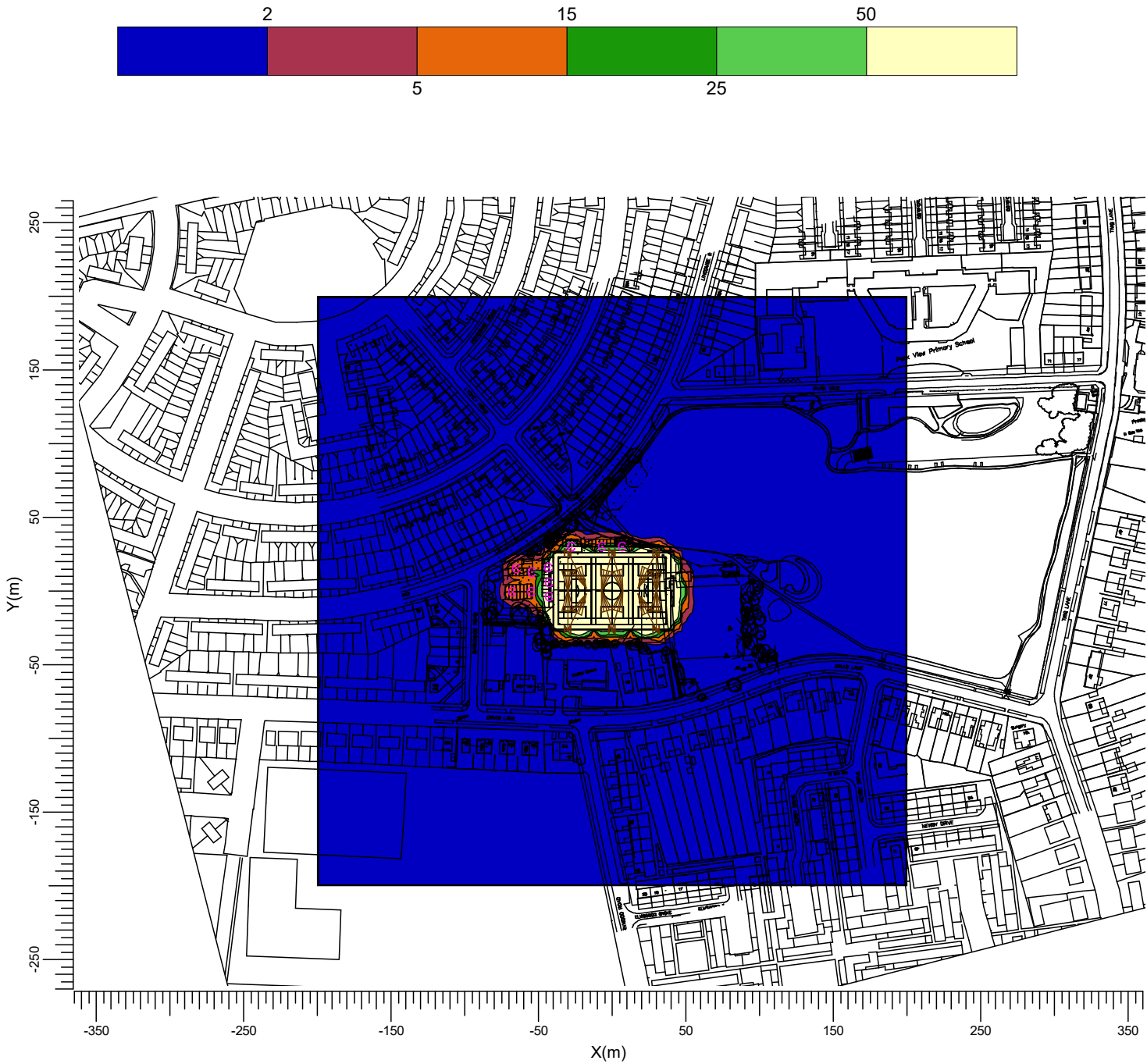
Scale
1:1250

3.5 Ground Spillage: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Surface Illuminance (lux)



C
N

BCB500 T25 S
BVP518 OUT T35 A35-NB LTM

E
BVP528 A35-NB +BL

Average
9.17

Min/Ave
0.00

Min/Max
0.00

Project maintenance factor
1.00

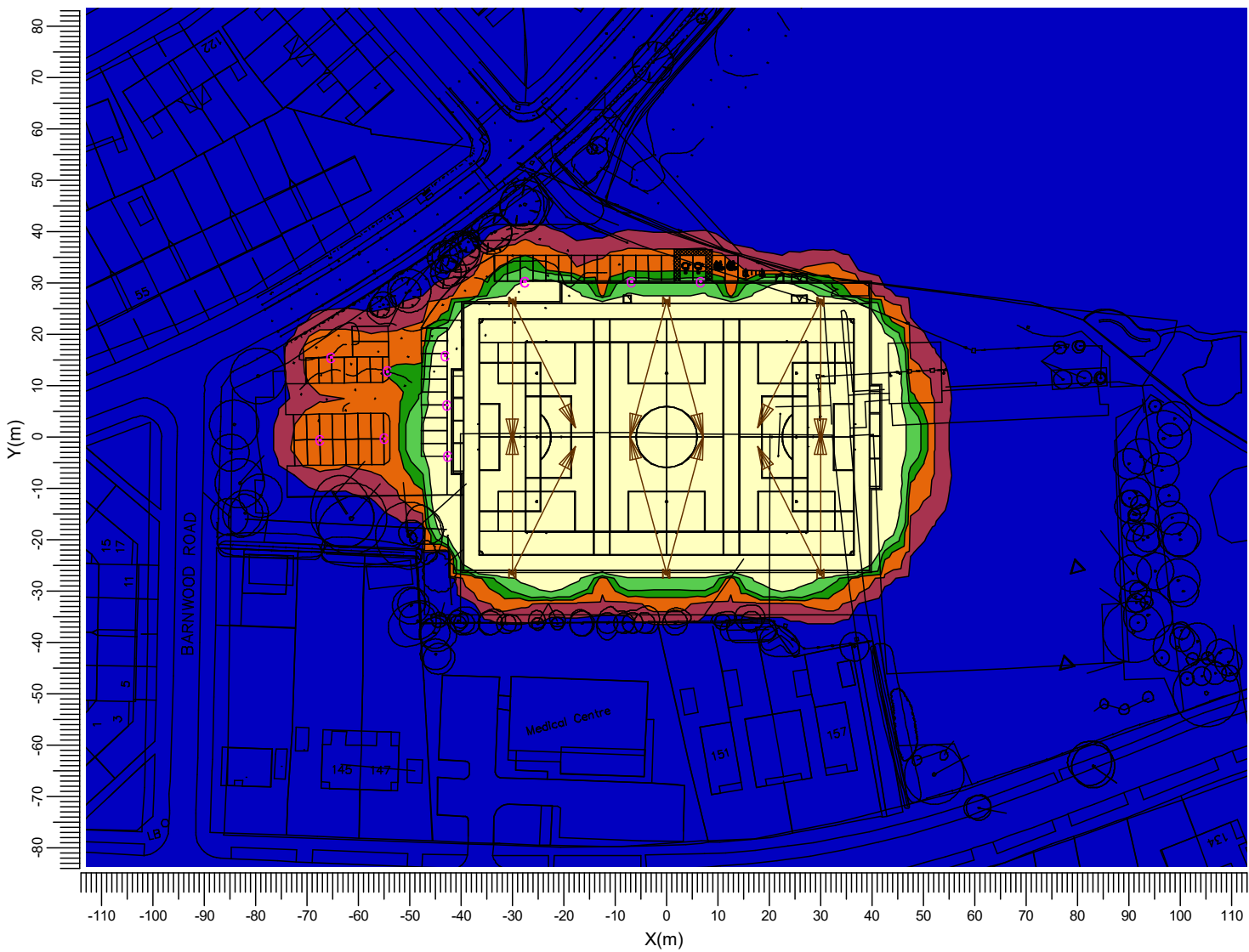
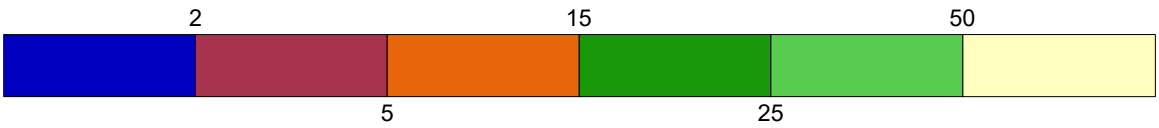
Scale
1:4000

3.6 Ground Spillage Zoom: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Surface Illuminance (lux)



C
N

BCB500 T25 S
 BVP518 OUT T35 A35-NB LTM

E
 BVP528 A35-NB +BL

Average
9.17

Min/Ave
0.00

Min/Max
0.00

Project maintenance factor
1.00

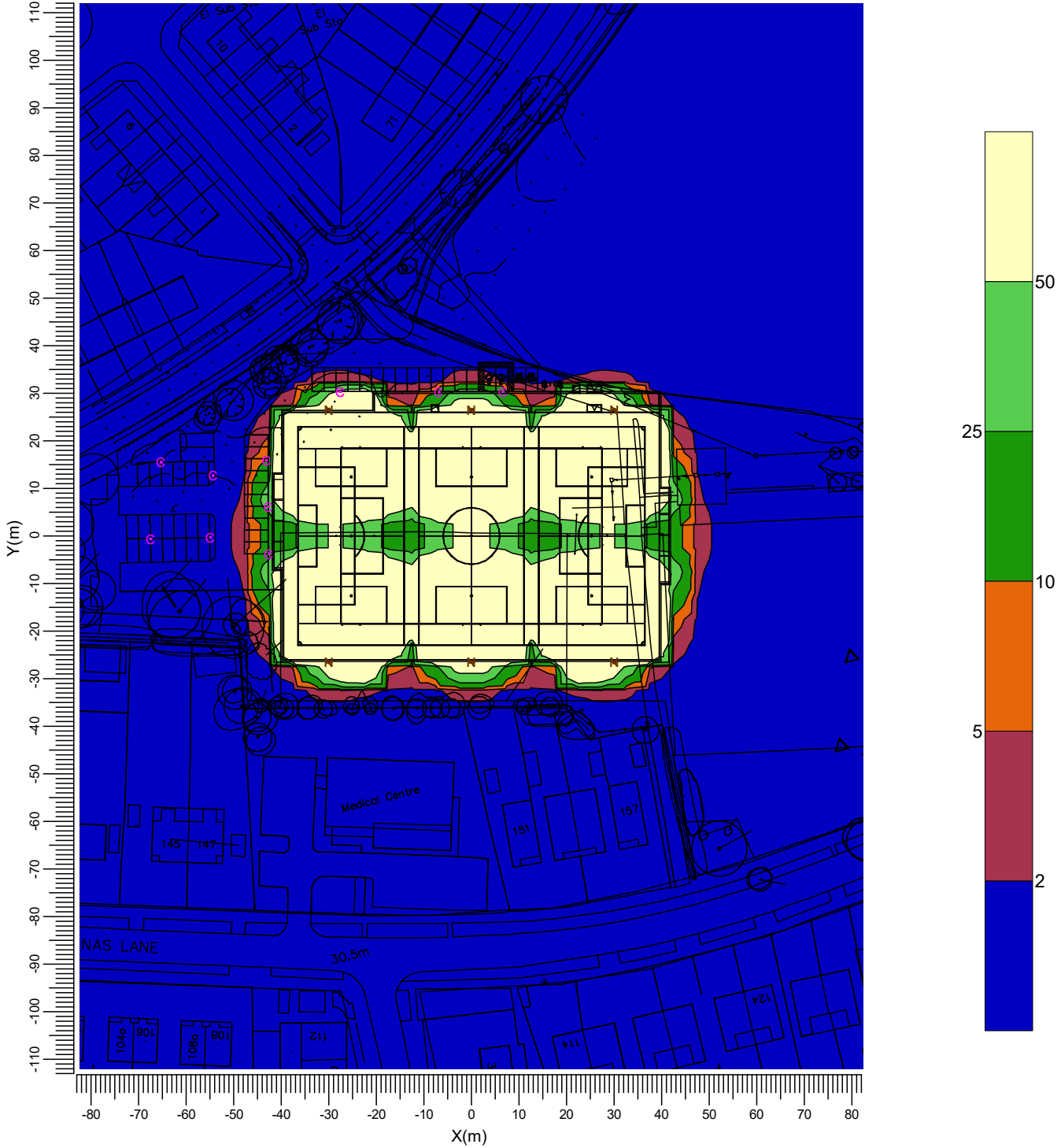
Scale
1:1250

Spillage Switching

3.8 Horizontal 3m Zoom: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m
Calculation : Horizontal Illuminance (lux)
Height above grid : 3.00 m



C : BCB500 T25 S
N : BVP518 OUT T35 A35-NB LTM

E : BVP528 A35-NB +BL

Project maintenance factor
1.00

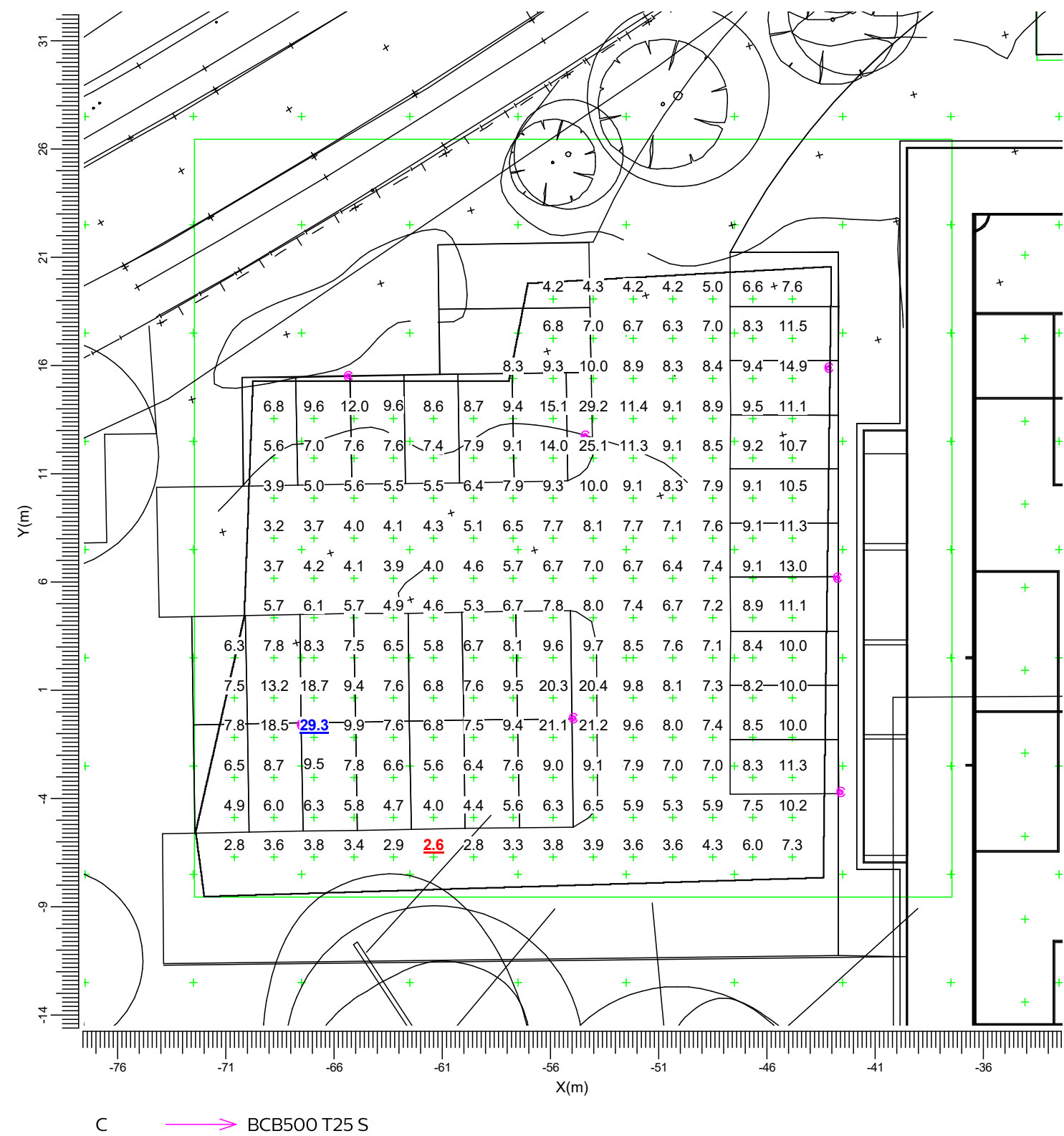
Scale
1:1250

3.9 South Carpark: Graphical Table

West Car Park

Grid : South Carpark at Z = -0.00 m

Calculation : Surface Illuminance (lux)

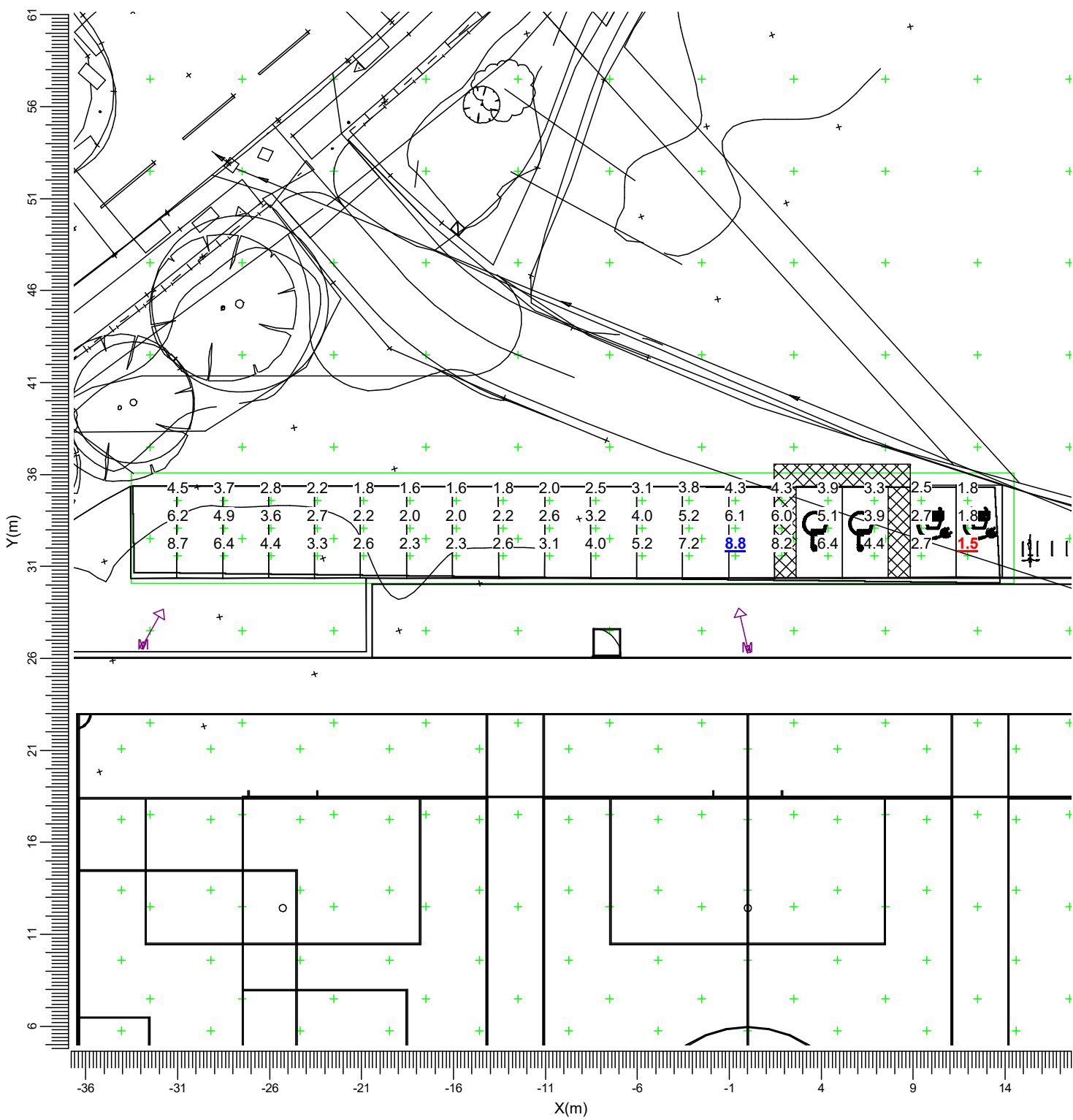


3.10 North Carpark: Graphical Table

North Car Park

Grid : North Carpark at Z = -0.00 m

Calculation : Surface Illuminance (lux)



M

→ BGP291 T25 DM11

Average3.74

Min/Ave0.41

Min/Max0.18

Project maintenance factor0.90

Scale1:300

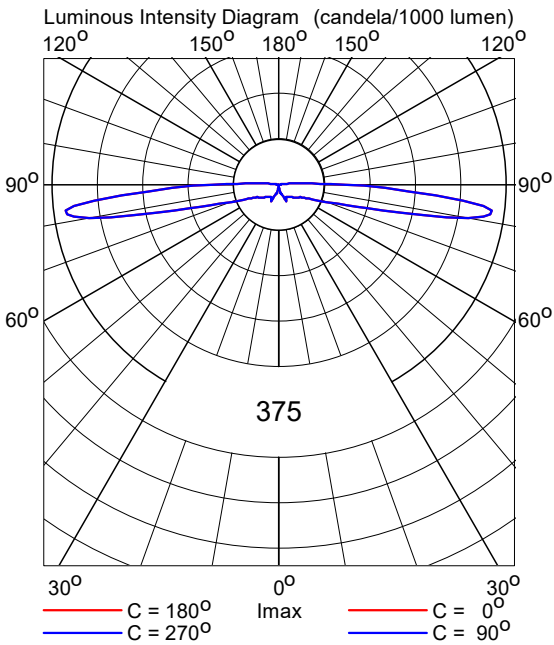
4. Luminaire Details

4.1 Project Luminaires

OptiSpace
BCB500 T25 1 xLED27/830 S

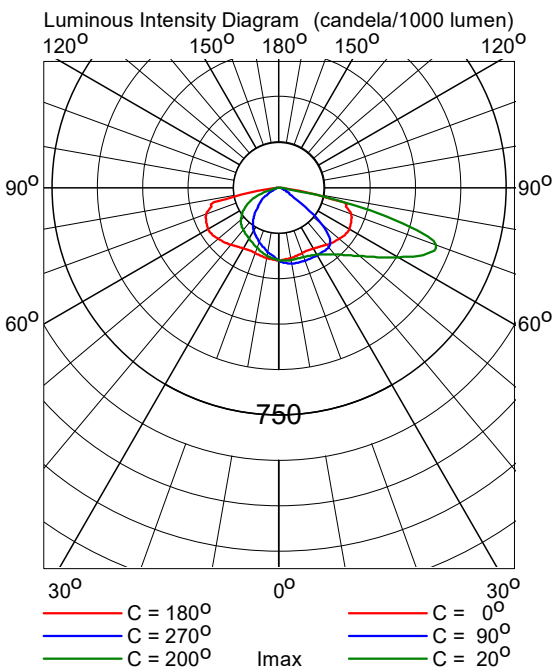


Light output ratios
DLOR : 0.63
ULOR : 0.06
TLOR : 0.69
Ballast : -
Lamp flux : 2700 lm
Luminaire wattage : 20.5 W
Measurement code : LVM1821600



LumiStreet gen2
BGP291 T25 1 xLED30-4S/740 DM11

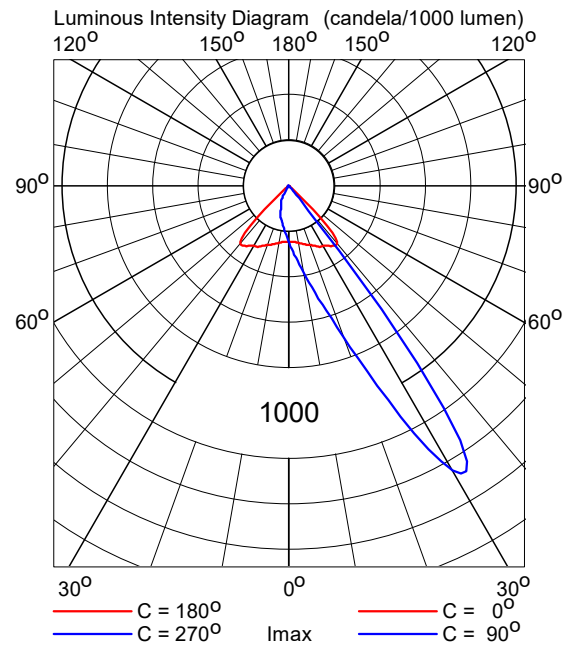
Light output ratios
DLOR : 0.89
ULOR : 0.00
TLOR : 0.89
Ballast : -
Lamp flux : 3000 lm
Luminaire wattage : 20.0 W
Measurement code : LVP013110C



OptiVision LED gen3.5 2022
BVP518 OUT T35 1xLED1720-4S/740/740 E3/D4I A35-NB LTM

Light output ratios
DLOR : 0.71
ULOR : 0.00
TLOR : 0.71
Ballast : E3/D4I
Lamp flux : 172000 lm
Luminaire wattage : 1006.0 W
Measurement code : LVM2047600

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
C	11	BCB500 T25 S	1 * LED27/830	1 * 2700
M	2	BGP291 T25 DM11	1 * LED30-4S/740	1 * 3000
N	12	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1 * 172000

Switching Modes:

Code	Switching Mode
1	200lux Switching
2	120 Lux Switching
3	Spillage Switching
4	North Car Park
5	West Car Park

5.2 Luminaire Positioning and Orientation

Qty and Code	Position			Aiming Angles			Switching Modes (%)				
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	1	2	3	4	5
1 * C	-67.53	-0.59	1.00	1.8	0.0	0.0	-	-	100	-	100
1 * C	-65.34	15.50	1.00	-63.3	0.0	0.0	-	-	100	-	100
1 * C	-54.95	-0.31	1.00	4.4	0.0	0.0	-	-	100	-	100
1 * C	-54.39	12.73	1.00	-47.5	0.0	0.0	-	-	100	-	100
1 * C	-43.16	15.88	1.00	-180.0	0.0	0.0	-	-	100	-	100
1 * C	-42.76	6.18	1.00	-180.0	0.0	0.0	-	-	100	-	100
1 * C	-42.61	-3.72	1.00	154.1	0.0	0.0	-	-	100	-	100
1 * M	-32.86	26.78	6.00	60.0	20.0	0.0	-	-	-	100	-
1 * N	-30.00	-26.50	10.00	90.0	70.0	0.0	70	70	100	-	-
1 * N	-30.00	-26.50	10.00	63.5	70.0	0.0	70	70	100	-	-
1 * N	-30.00	26.50	10.00	-90.0	70.0	-0.0	70	70	100	-	-
1 * N	-30.00	26.50	10.00	-63.5	70.0	-0.0	70	70	100	-	-
1 * C	-27.62	30.29	1.00	-176.4	0.0	0.0	-	-	100	-	-
1 * C	-27.62	30.29	1.00	-176.4	0.0	0.0	-	-	100	-	-
1 * C	-6.82	30.25	1.00	-176.4	0.0	0.0	-	-	100	-	-
1 * N	-0.00	-26.50	10.00	105.1	70.0	0.0	70	70	100	-	-
1 * N	-0.00	-26.50	10.00	74.9	70.0	-0.0	70	70	100	-	-
1 * N	-0.00	26.50	10.00	-105.1	70.0	-0.0	70	70	100	-	-
1 * N	-0.00	26.50	10.00	-74.9	70.0	0.0	70	70	100	-	-
1 * M	-0.00	26.59	6.00	102.7	20.0	0.0	-	-	-	100	-
1 * C	6.61	30.29	1.00	-176.4	0.0	0.0	-	-	100	-	-
1 * N	30.00	-26.50	10.00	90.0	70.0	-0.0	70	70	100	-	-
1 * N	30.00	-26.50	10.00	116.5	70.0	-0.0	70	70	100	-	-
1 * N	30.00	26.50	10.00	-90.0	70.0	0.0	70	70	100	-	-
1 * N	30.00	26.50	10.00	-116.5	70.0	0.0	70	70	100	-	-