Stanley Park

Artificial Turf Pitch

Project code:	McA012
Date:	16-02-2024
Designer:	ME
Description:	Football Pitch 97m / 61m Playing Lines 91m/55m Maintained Illuminance: >200lux Uniformity >0.60 Luminaire Source: 12no. MAF1.1kW GigaTera LED Floodlights Lamp Source: LED 6no. 15m Christy Raise & Lower Floodlighting Masts

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.

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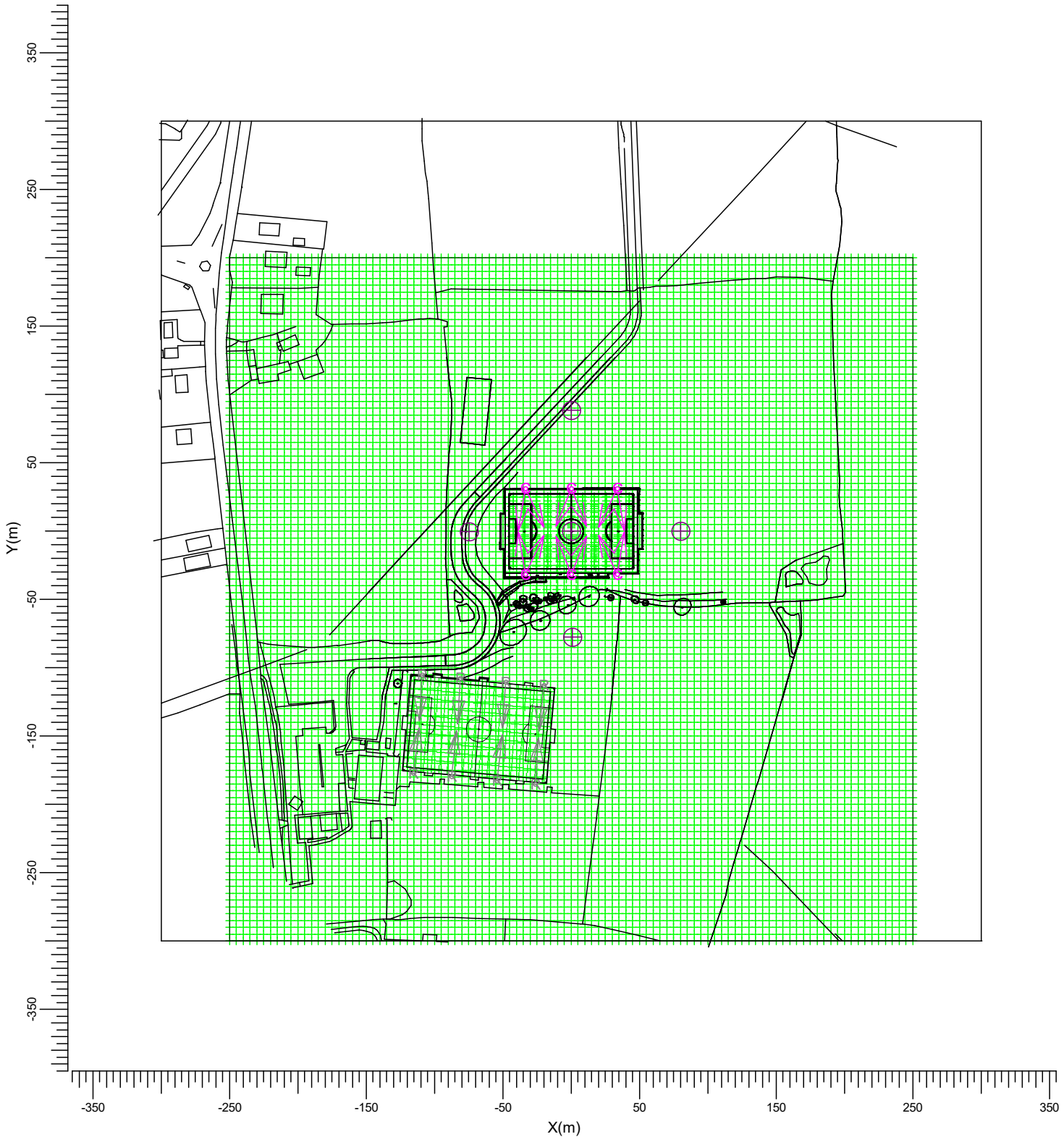
1. Project Description

1.1 Top Project Overview



Scale
1:4000

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Bb	North	-0.00	88.50	1.50
Cc	East	80.00	-0.00	1.50
Dd	South	0.93	-77.24	1.50
Ee	West	-74.74	-0.31	1.50

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
C	12	MAF Gen2 1.2kw 5000K FL CB RL	1 * LED 1.2kW	1200.0	1 * 122650
R	8	7106-MAF1kw Front Louvre	1 * LED	1000.0	1 * 130000

The total installed power: 22.40 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code		Power (kWatt)
	C	R	
200Lux Switching	12	0	14.40
Half Pitch Switching	4	0	4.80
Existing Pitch	0	8	8.00
Spillage Switching	12	8	22.40

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	C	R	
Centre Columns6	4	0	4.80
Centre Columns7	0	0	0.00
Corner Columns4	8	0	9.60
Corner Columns6	0	0	0.00
Individuals	0	8	8.00

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	200Lux Switching	0.95
2	Half Pitch Switching	0.70
3	Existing Pitch	0.95
4	Spillage Switching	0.95

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min	Min/Ave	Min/Max

Calculation	Switching Mode	Type	Unit	Ave	Min	Min/Ave	Min/Max
Football - 200lux	1	Surface Illuminance	lux	225		0.63	0.42
Spill Calculations-GL	4	Surface Illuminance	lux		0.00		
Spill Calcs-3.0mAGL	4	Horizontal Illuminance	lux		0.00		
Existing Football	3	Surface Illuminance	lux	114		0.61	0.31

Glare Rating for Grid of Observers:

Calculation	Switching Mode	Observer Grid	Reference Grid	Reflectance	GR-Max
Glare Calculation	1	Football 8*11	Football 8*11	0.25	44.4

Obtrusive Light Calculations:

Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
1	Bb	C	33.50	-31.50	14.00	80.21	66.00	0.00	256
1	Cc	C	33.50	-31.50	14.00	80.21	66.00	0.00	6779
1	Dd	C	33.50	31.50	14.00	-115.28	66.00	-0.00	365
1	Ee	C	-33.50	31.50	14.00	-99.78	66.00	0.00	11764

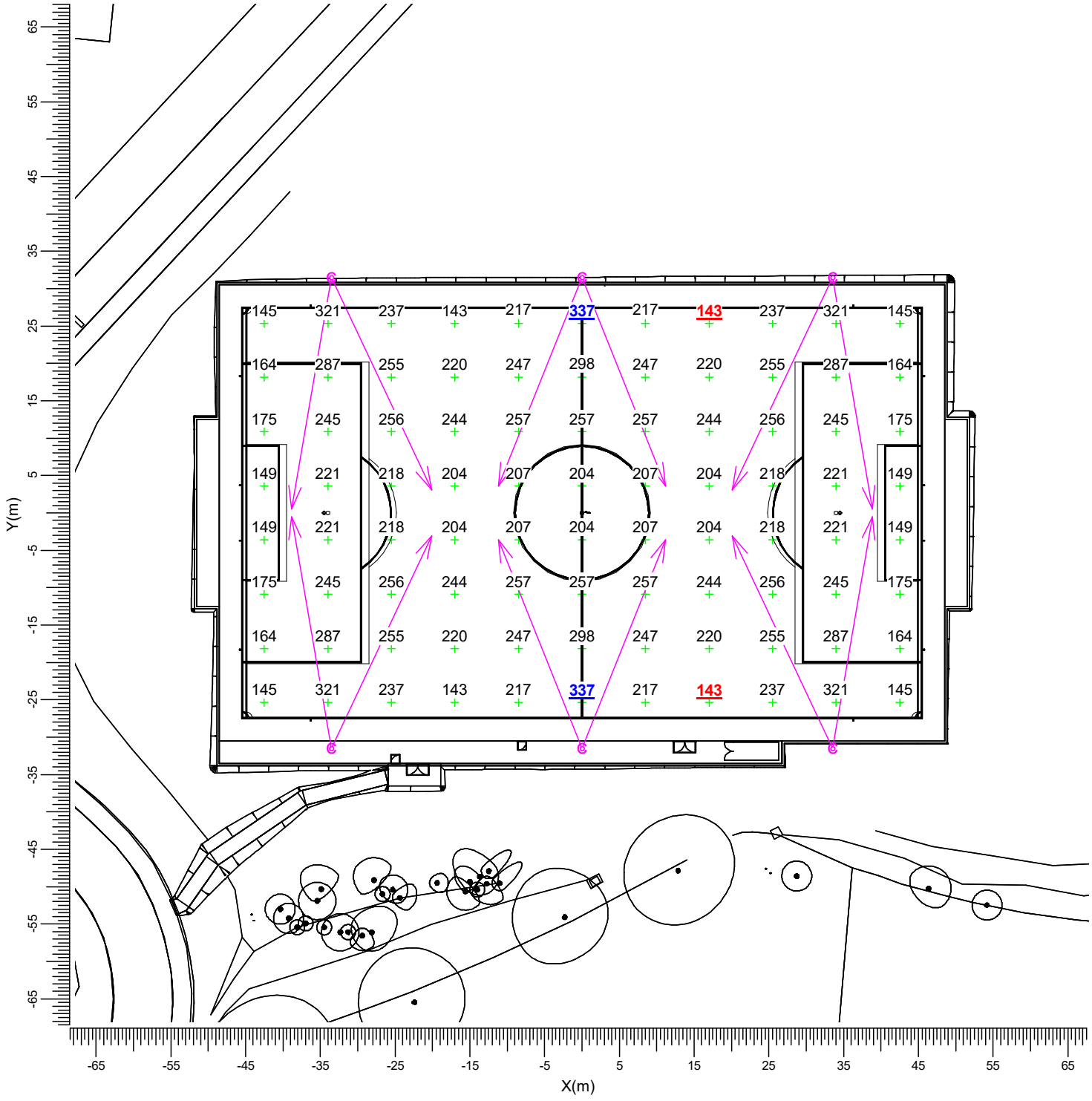
Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00

3. Calculation Results

3.1 Football - 200lux: Graphical Table

200Lux Switching

Grid : Football 8*11 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



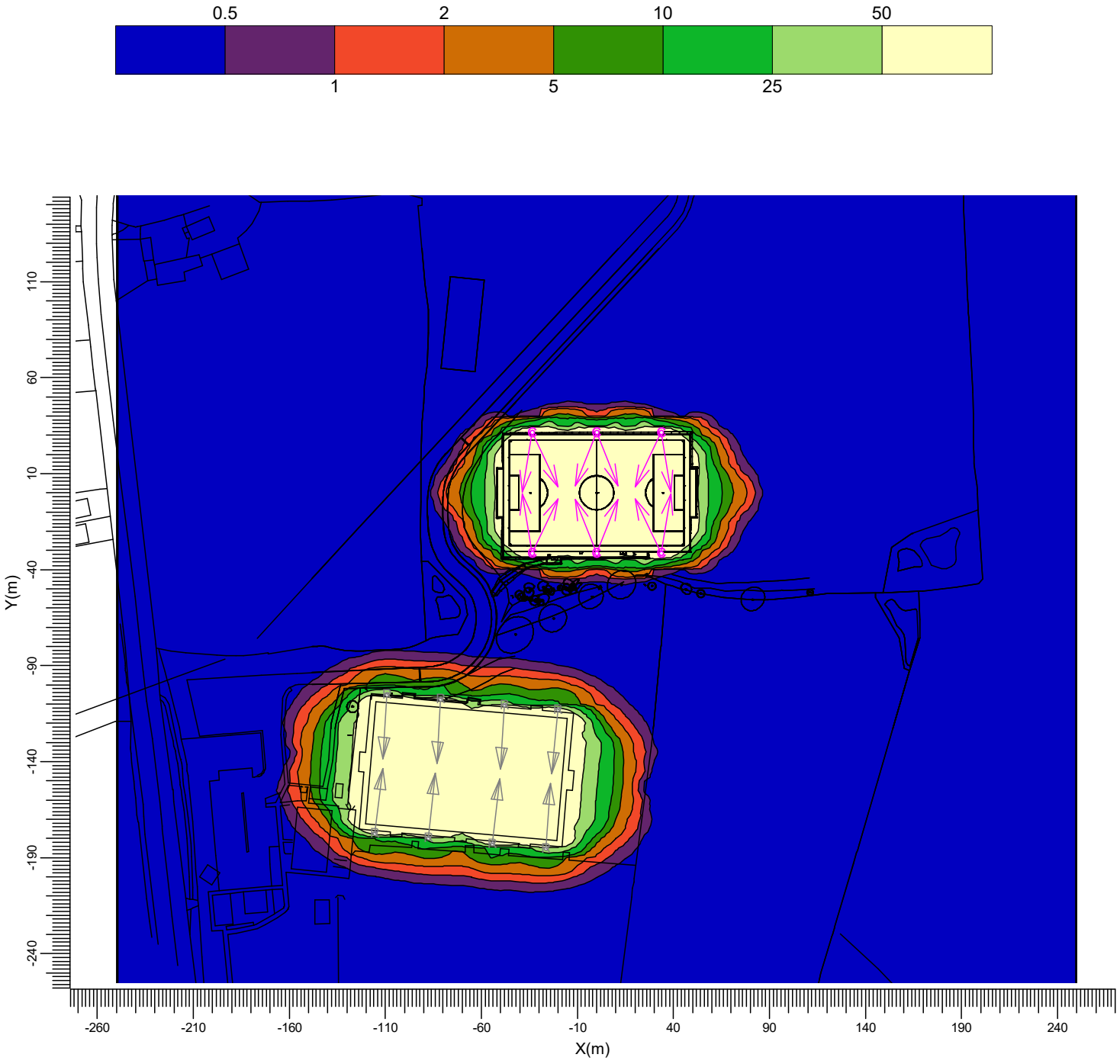
C → MAF Gen2 1.2kw 5000K FL CB

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
225	0.63	0.42	0.95	1:750

3.2 Spill Calculations-GL: Filled Iso Contour

Spillage Switching

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



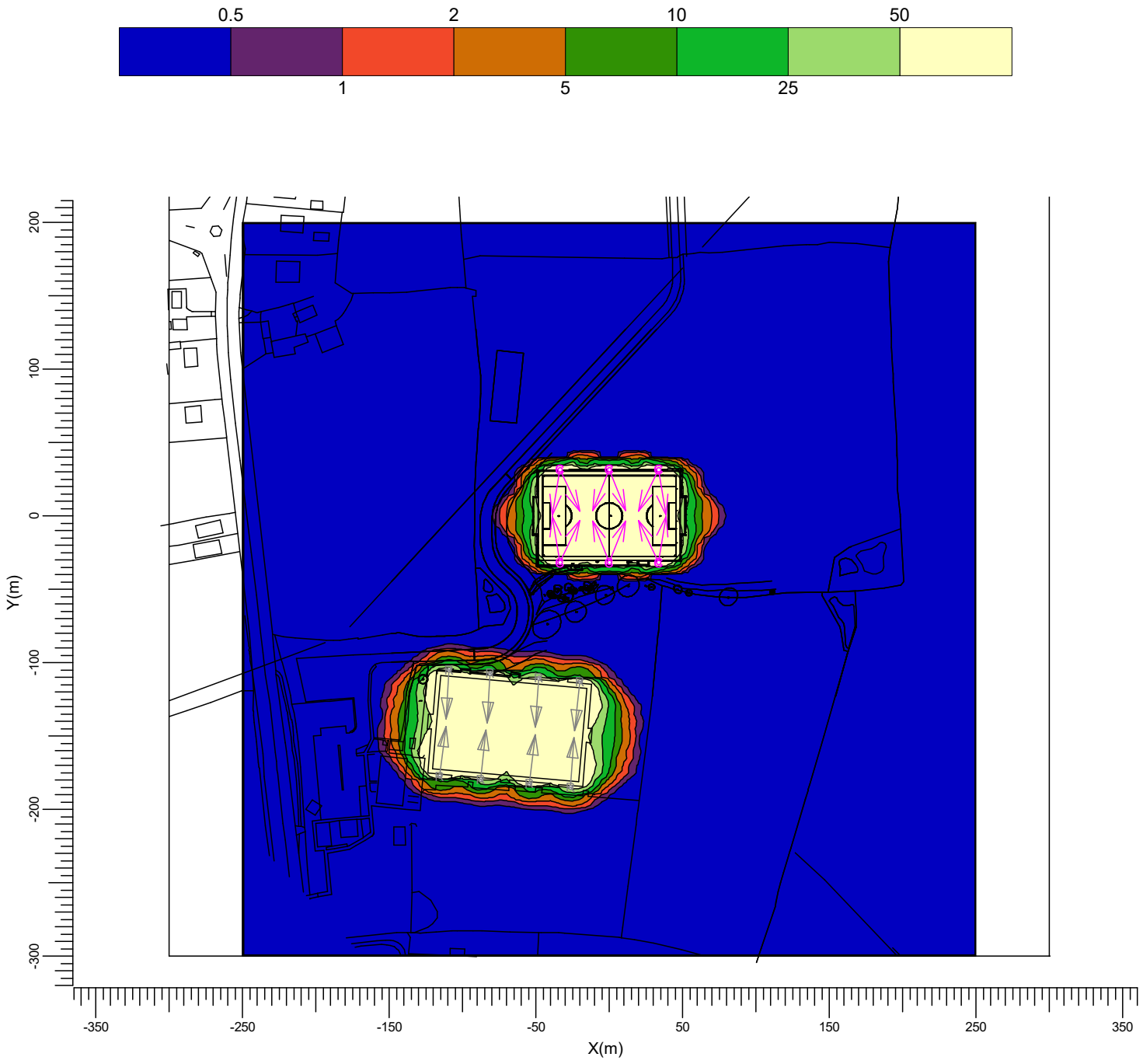
C → MAF Gen2 1.2kw 5000K FL CB R → 7106-MAF1kw Front Louvre

Minimum	Project maintenance factor	Scale
0.00	0.95	1:3000

3.3 Spill Calcs-3.0mAGL: Filled Iso Contour

Spillage Switching

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



C → MAF Gen2 1.2kw 5000K FL CB R → 7106-MAF1kw Front Louvre

Minimum
0.00

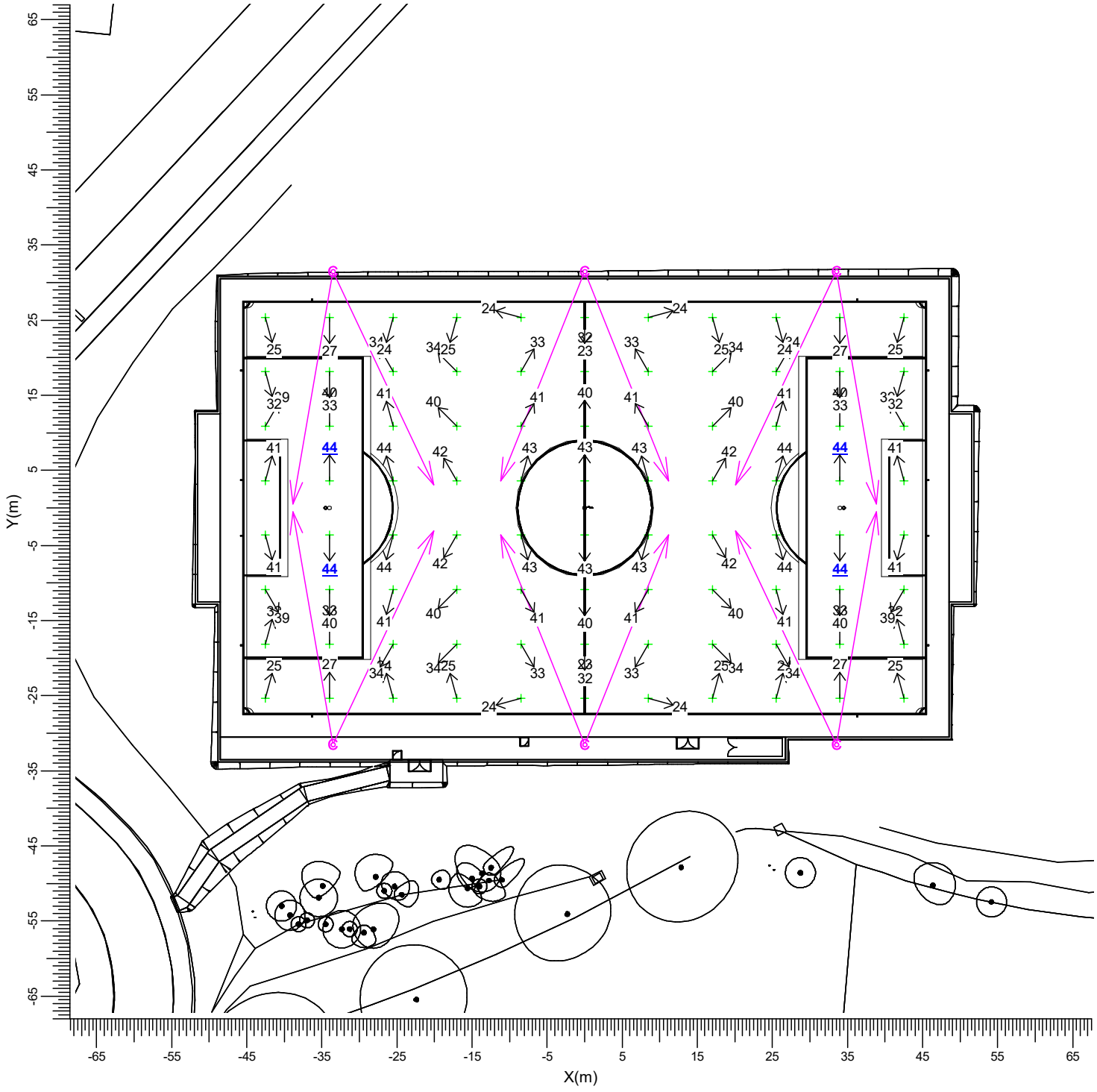
Project maintenance factor
0.95

Scale
1:4000

3.4 Glare Calculation: Graphical Table

200Lux Switching

Grid of Observers : Football 8*11
Calculation : Glare Rating
Grid for Background Luminance: Football 8*11 (Reflectance: 0.25)
Vertical Viewing Angle : -2.0 deg



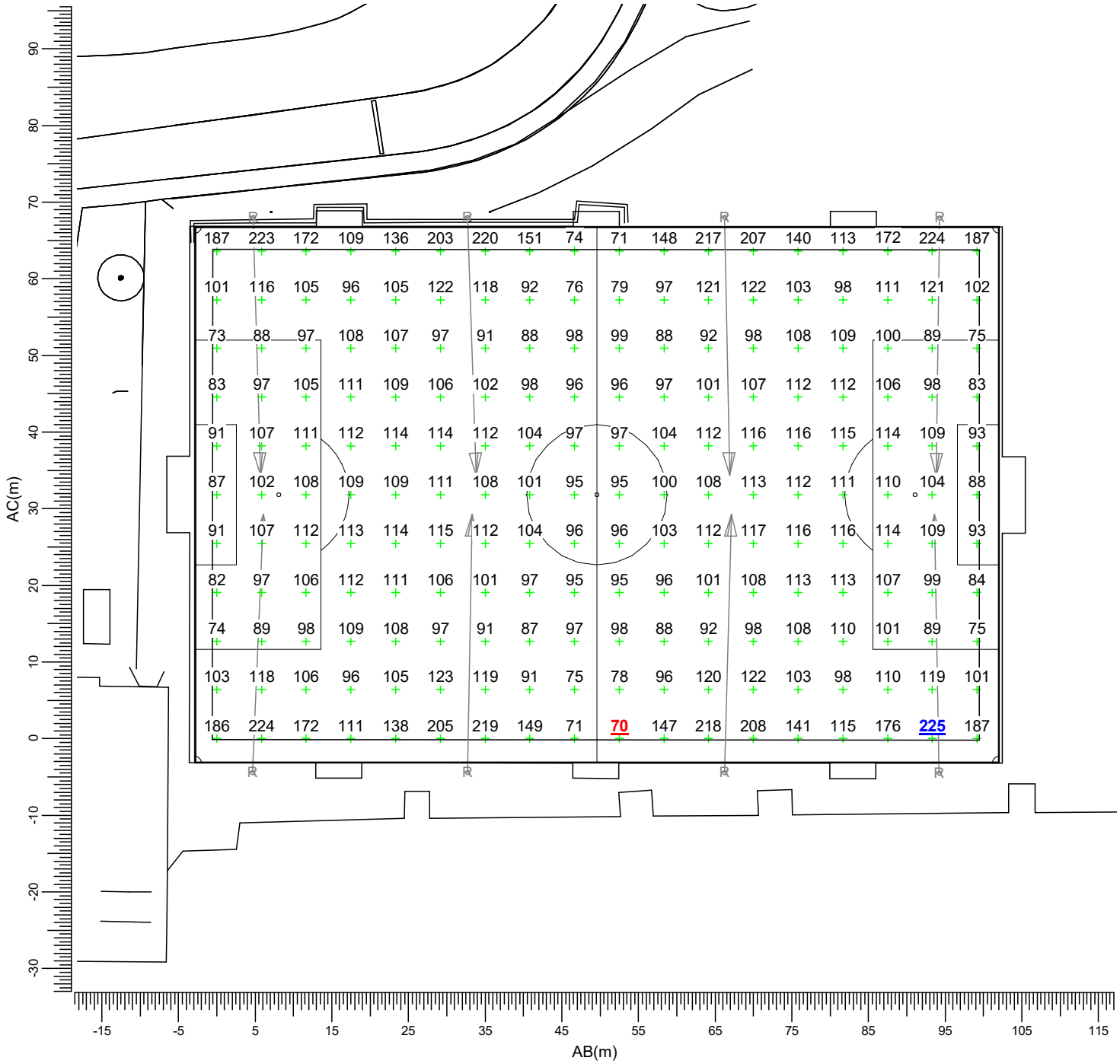
C → MAF Gen2 1.2kw 5000K FL CB

Maximum	Project maintenance factor	Scale
44.4	0.95	1:750

3.5 Existing Football: Graphical Table

Existing Pitch

Grid : Existing Football
Calculation : Surface Illuminance (lux)



(-114.32, -108.93, -0.00) C-----D (-15.53, -117.57, 0.00)
| |
(-119.87, -172.33, -0.00) A-----B (-21.08, -180.97, -0.00)

R ⟶ 7106-MAF1kw Front Louvre

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
114	0.61	0.31	0.95	1:750