South Holland Health & Wellbeing Hub

Date: 20-06-2024

Designer: Andy Poplett

Description:

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 Description

Maintenance Factor:- 0.90

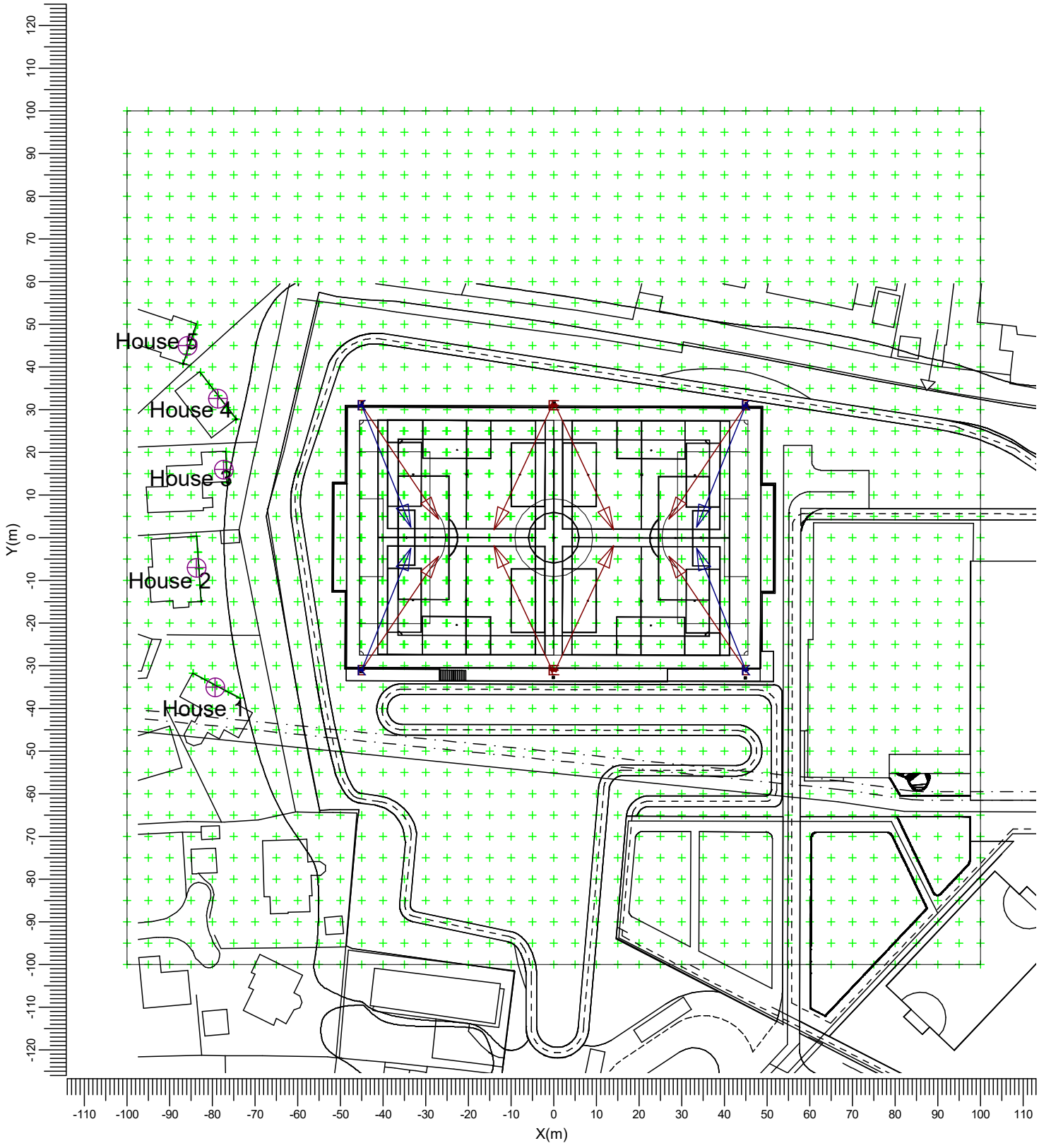
Pitch 91m x 55m (Fenced Area 97m x 61m)

The design has been completed using the Philips Asymmetric OptiVision LED GEN 3.5 Floodlights. A total of 12 no have been used to achieve an average of 200lux.

Floodlights are mounted on 6 x 15 metre columns

All Floodlights fitted with integral LO (maximum cut off) louvres to reducespill and glare.

1.2 Top Project Overview



E BVP528 OUT T35 A55-NMB L K BVP518 OUT T35 A55-NMB LO

Scale
1:1250

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	Obs House 1	-79.35	-35.00	1.50
Bb	Obs House 2	-83.76	-7.00	1.50
Cc	Obs House 3	-77.32	16.00	1.50
Dd	Obs House 4	-78.76	32.57	1.50
Ee	Obs House 5	-85.89	45.00	1.50

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
E	8	BVP528 OUT T35 A55-NMB LO	1 * LED2590-4S/757	1505.9	1 * 259000
K	4	BVP518 OUT T35 A55-NMB LO	1 * LED1720-4S/757	1006.0	1 * 172000

The total installed power: 16.07 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code		Power (kWatt)
	E	K	
Main Pitch	8	4	16.07
Half Pitch	2	2	5.02
All ON	8	4	16.07

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	E	K	
Centre 1	2	0	3.01
Centre 2	2	0	3.01
Corner 1	2	2	5.02
Corner 2	2	2	5.02

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Main Pitch	0.90
2	Half Pitch	0.90
3	All ON	1.00

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Max Min/Ave	Min/Max
Football	1	Surface Illuminance	lux	222	0.71	0.44
Half Pitch	2	Surface Illuminance	lux	120	0.64	0.43

Calculation	Switching Mode	Type	Unit	Ave	Max	Min/Ave	Min/Max
Spillage	3	Surface Illuminance	lux	37.8		0.00	0.00
Ev House 1	1	Surface Illuminance	lux		1.03		
Ev House 2	1	Surface Illuminance	lux		0.79		
Ev House 3	1	Surface Illuminance	lux		1.01		
Ev House 4	1	Surface Illuminance	lux		0.61		
Ev House 5	1	Surface Illuminance	lux		0.53		

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	E	-0.40	31.00	15.00	-115.00	65.00	-0.00	1470
3	Bb	E	-0.40	31.00	15.00	-115.00	65.00	-0.00	990
3	Cc	E	-0.40	-31.00	15.00	115.00	65.00	0.00	1222
3	Dd	E	-0.40	-31.00	15.00	115.00	65.00	0.00	1429
3	Ee	E	-0.40	-31.00	15.00	115.00	65.00	0.00	1111

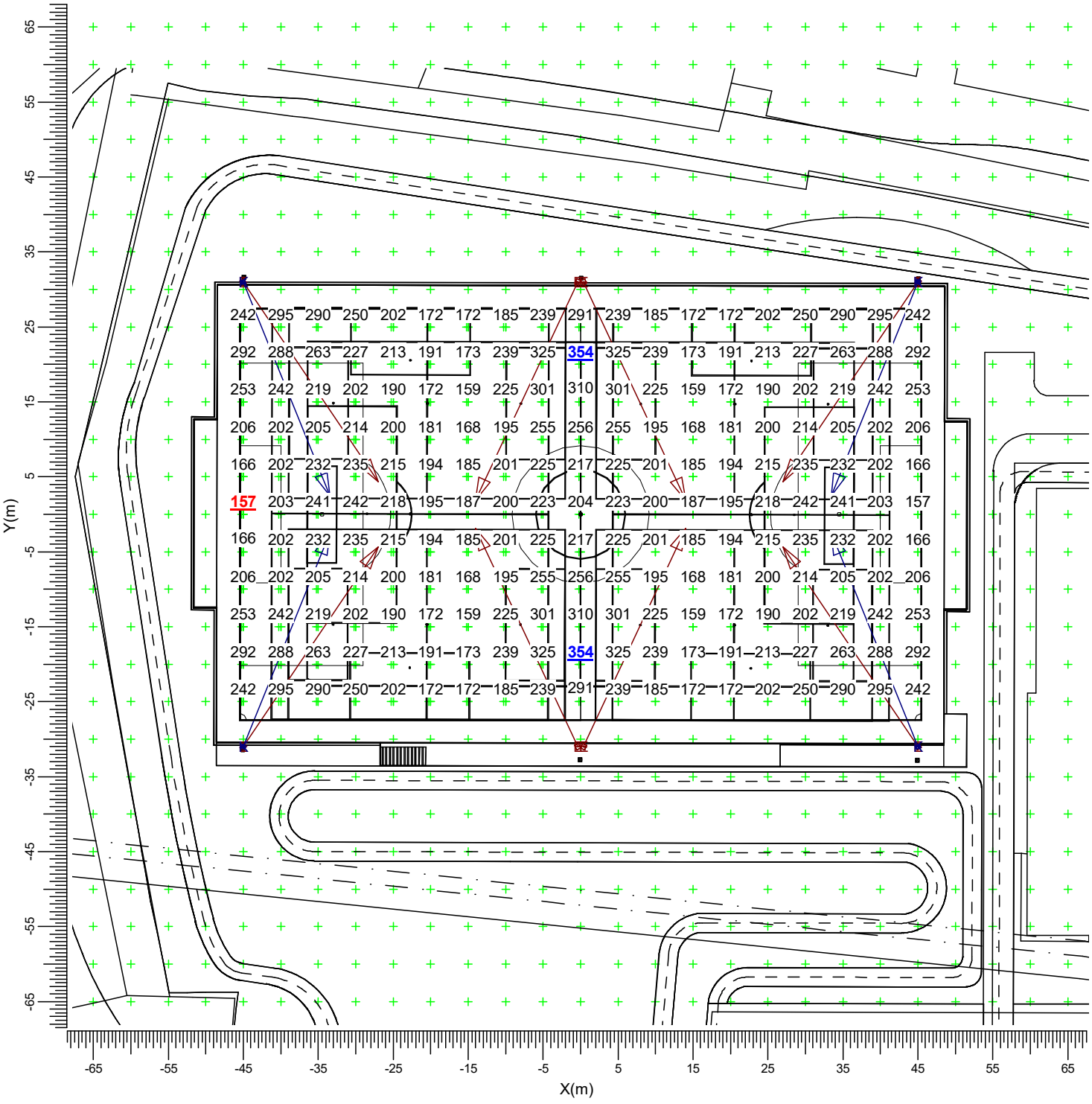
Switching Mode	ULR
1	0.00
2	0.00
3	0.00

3. Calculation Results

3.1 Football: Graphical Table

Main Pitch

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



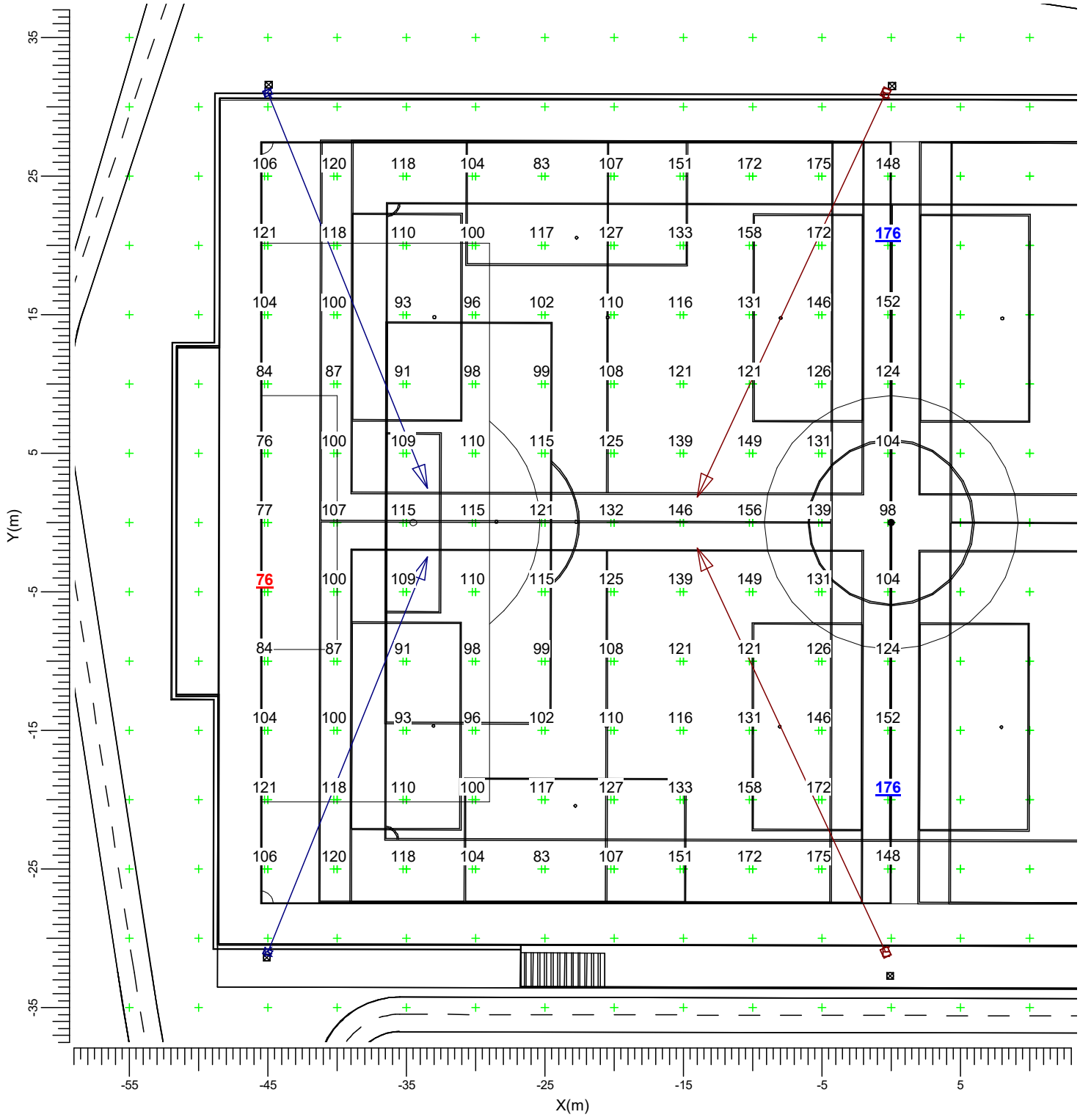
E BVP528 OUT T35 A55-NMB L K BVP518 OUT T35 A55-NMB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
222	0.71	0.44	0.90	1:750

3.2 Half Pitch: Graphical Table

Half Pitch

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



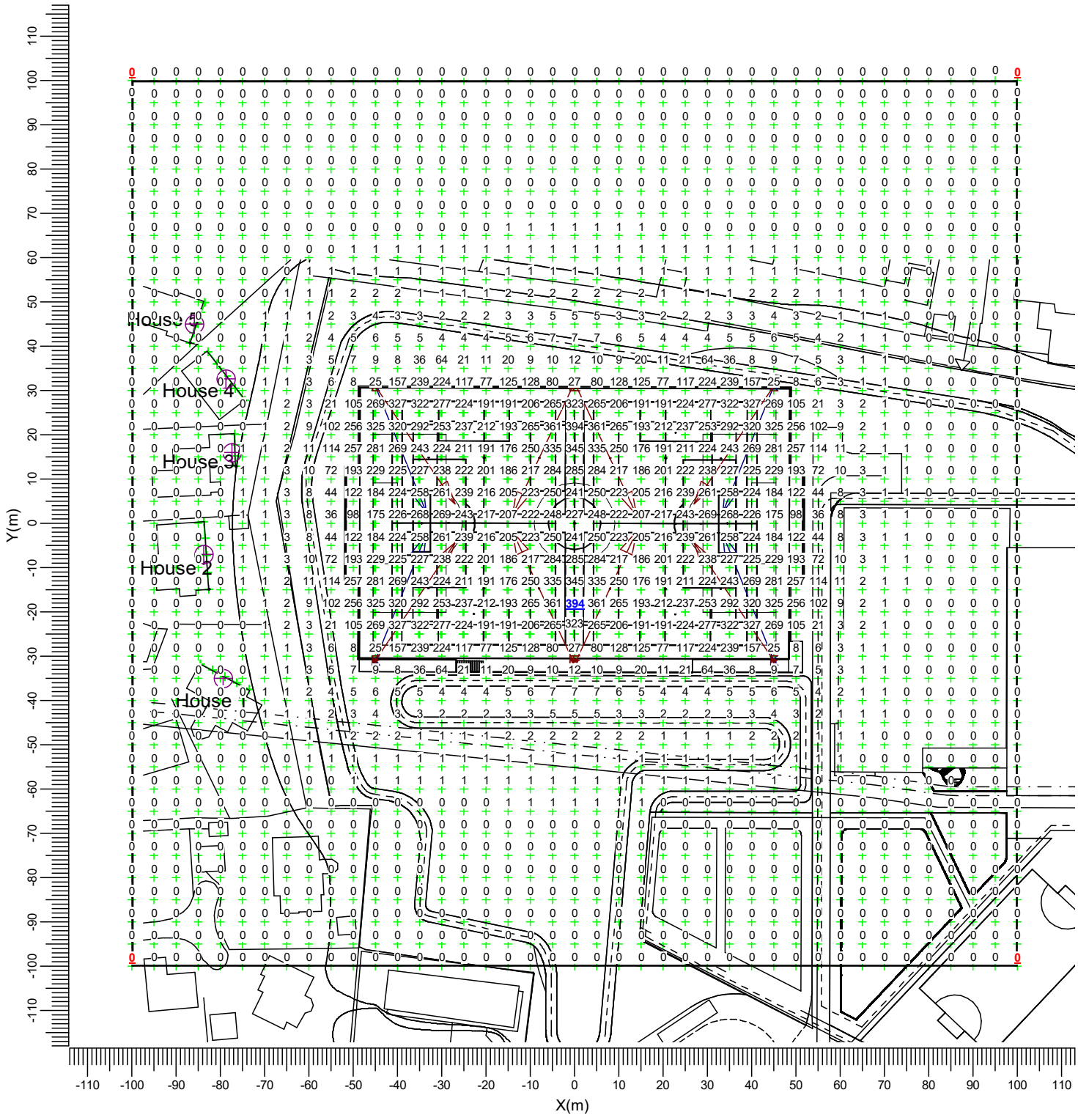
E BVP528 OUT T35 A55-NMB L K BVP518 OUT T35 A55-NMB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
120	0.64	0.43	0.90	1:400

3.3 Spillage: Graphical Table

All ON

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



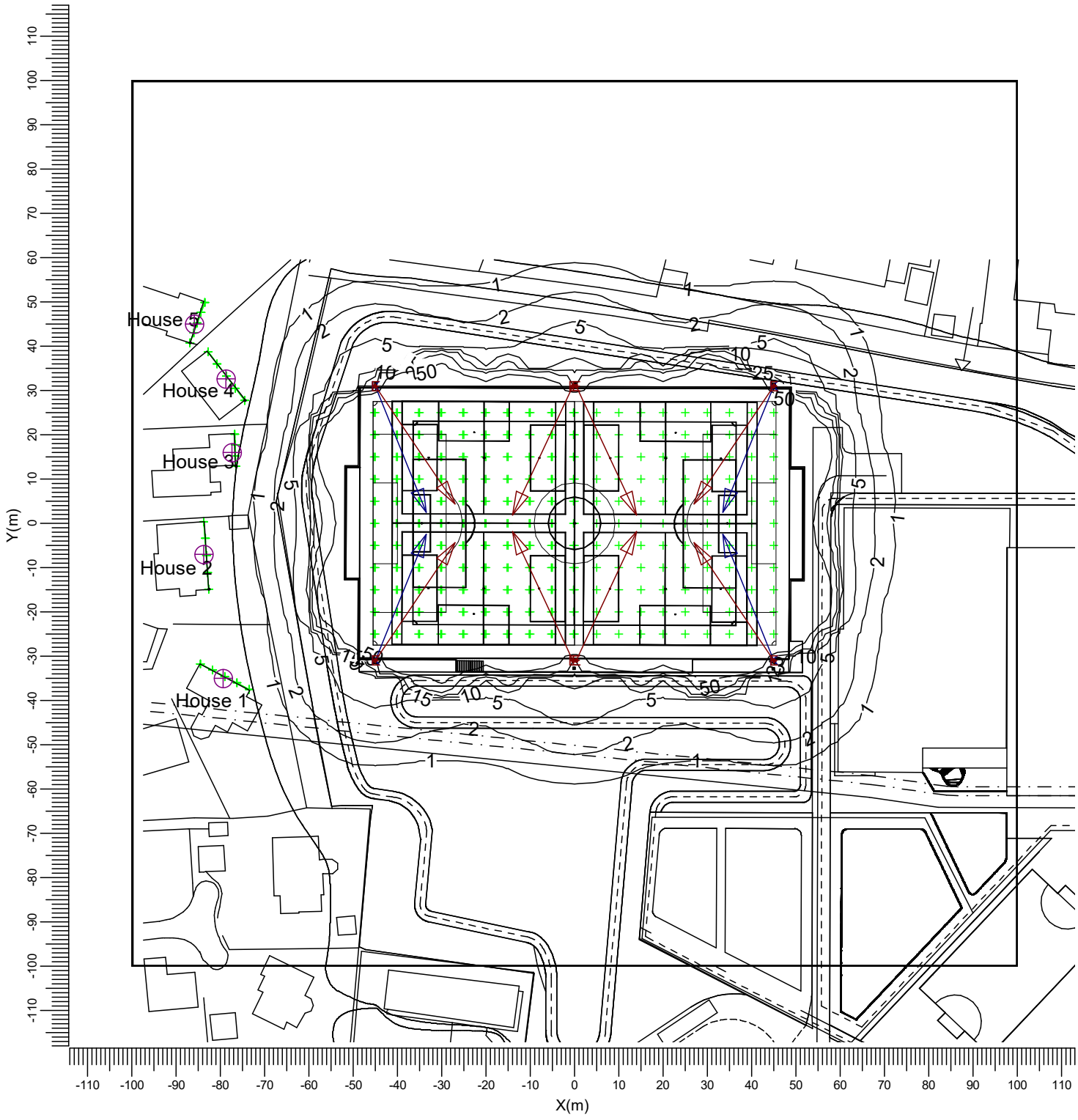
E BVP528 OUT T35 A55-NMB L K BVP518 OUT T35 A55-NMB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
37.8	0.00	0.00	1.00	1:1250

3.4 Spillage: Iso Contour

All ON

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



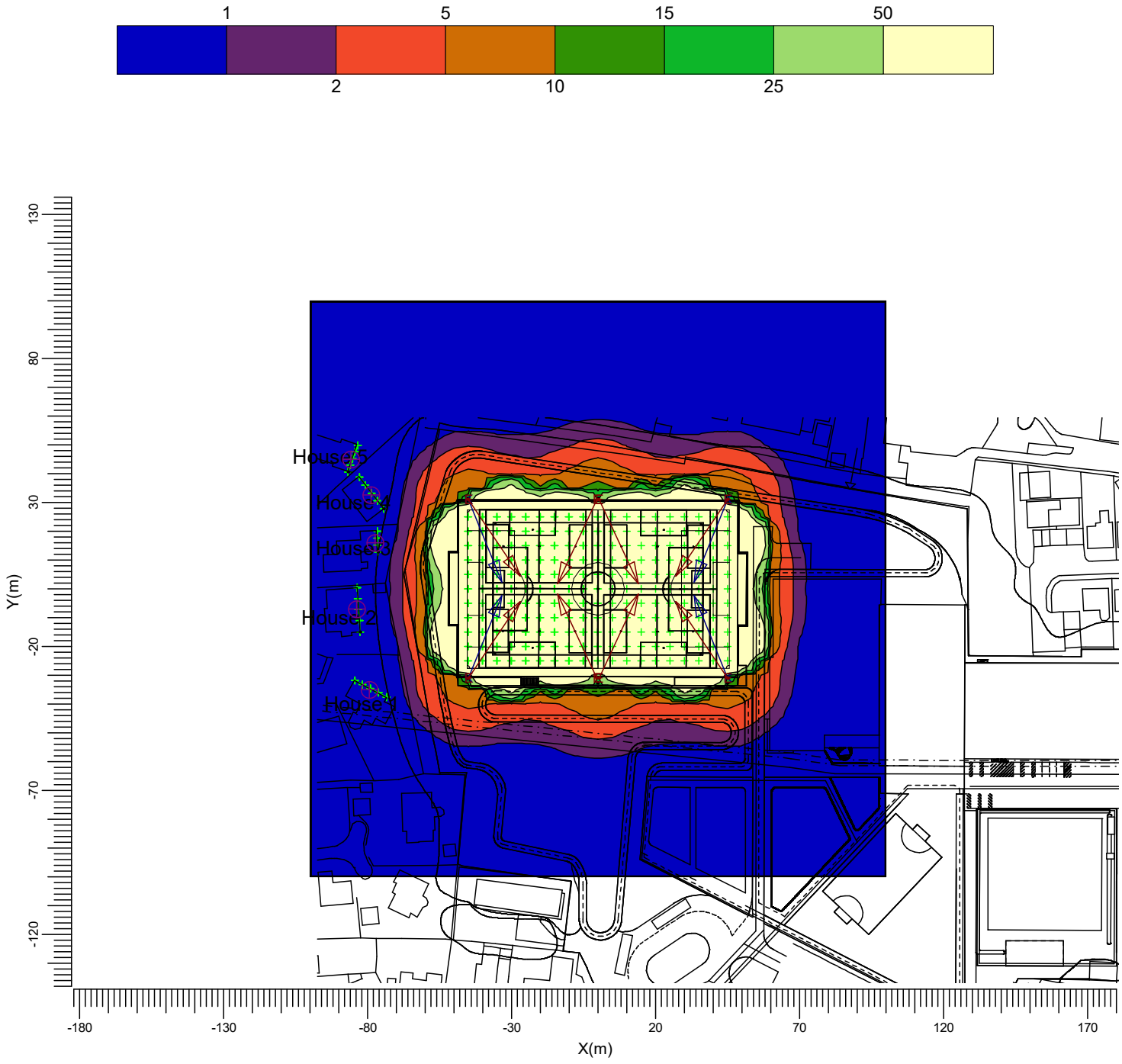
E BVP528 OUT T35 A55-NMB L K BVP518 OUT T35 A55-NMB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
37.8	0.00	0.00	1.00	1:1250

3.5 Spillage: Filled Iso Contour

All ON

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



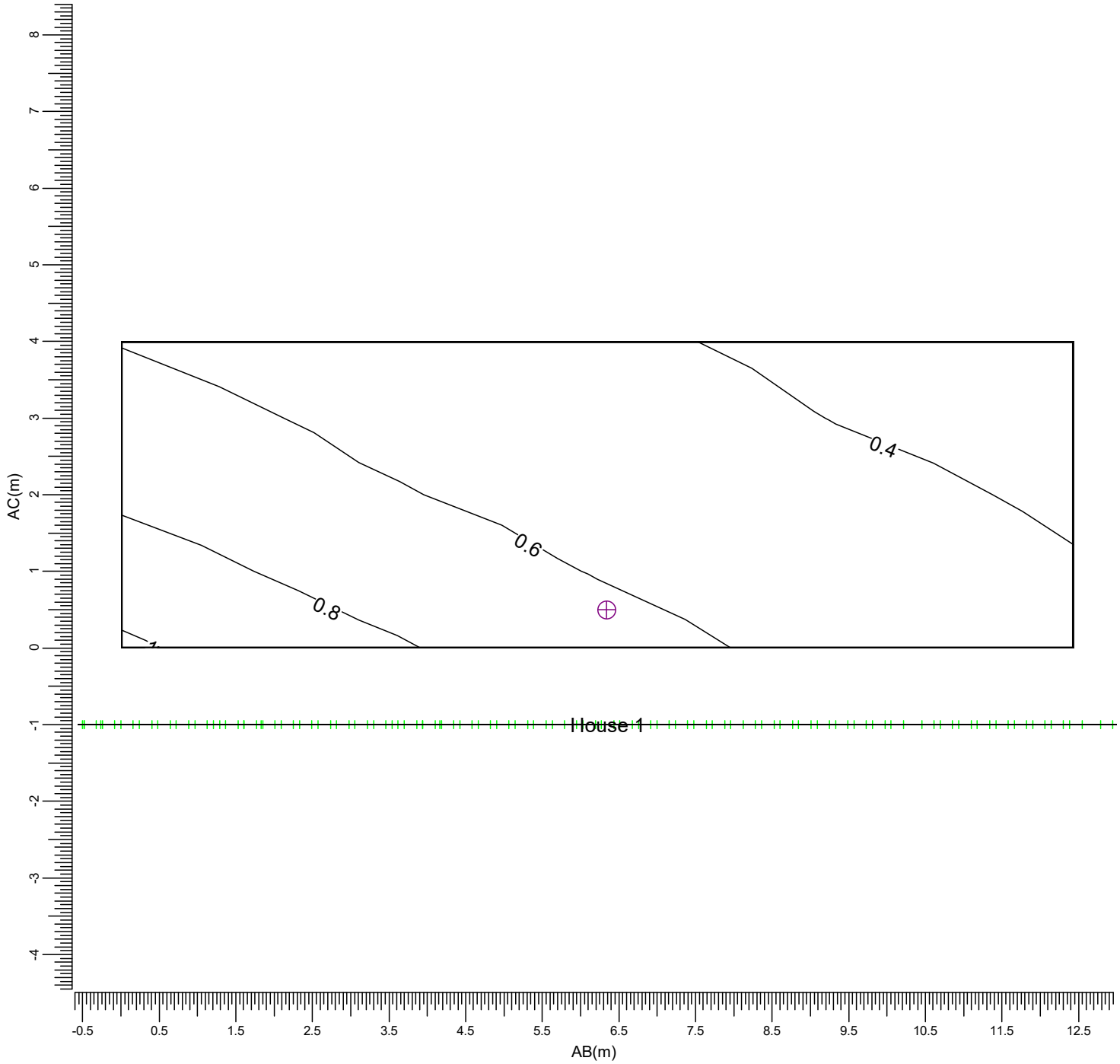
E BVP528 OUT T35 A55-NMB L K BVP518 OUT T35 A55-NMB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
37.8	0.00	0.00	1.00	1:2000

3.6 Ev House 1: Iso Contour

Main Pitch

Grid : Ev House 1
Calculation : Surface Illuminance (lux)



(-73.50, -37.50, 5.00) C-----D (-84.50, -31.70, 5.00)
| |
(-73.50, -37.50, 1.00) A-----B (-84.50, -31.70, 1.00)

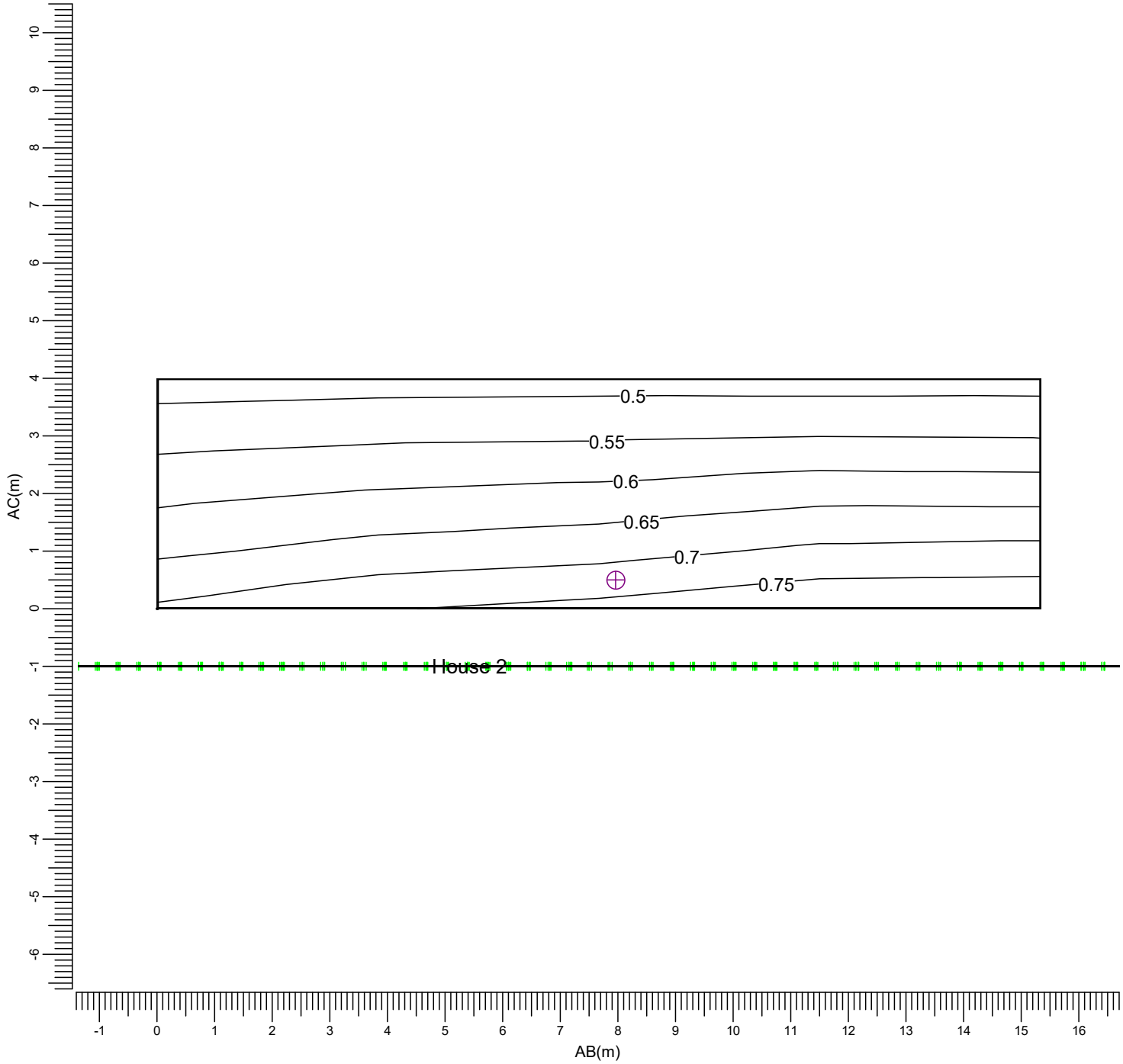
E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

Maximum	Project maintenance factor	Scale
1.03	0.90	1:75

3.7 Ev House 2: Iso Contour

Main Pitch

Grid : Ev House 2
Calculation : Surface Illuminance (lux)



(-82.60, -14.90, 5.00) C-----D (-83.70, 0.40, 5.00)
(-82.60, -14.90, 1.00) A-----B (-83.70, 0.40, 1.00)

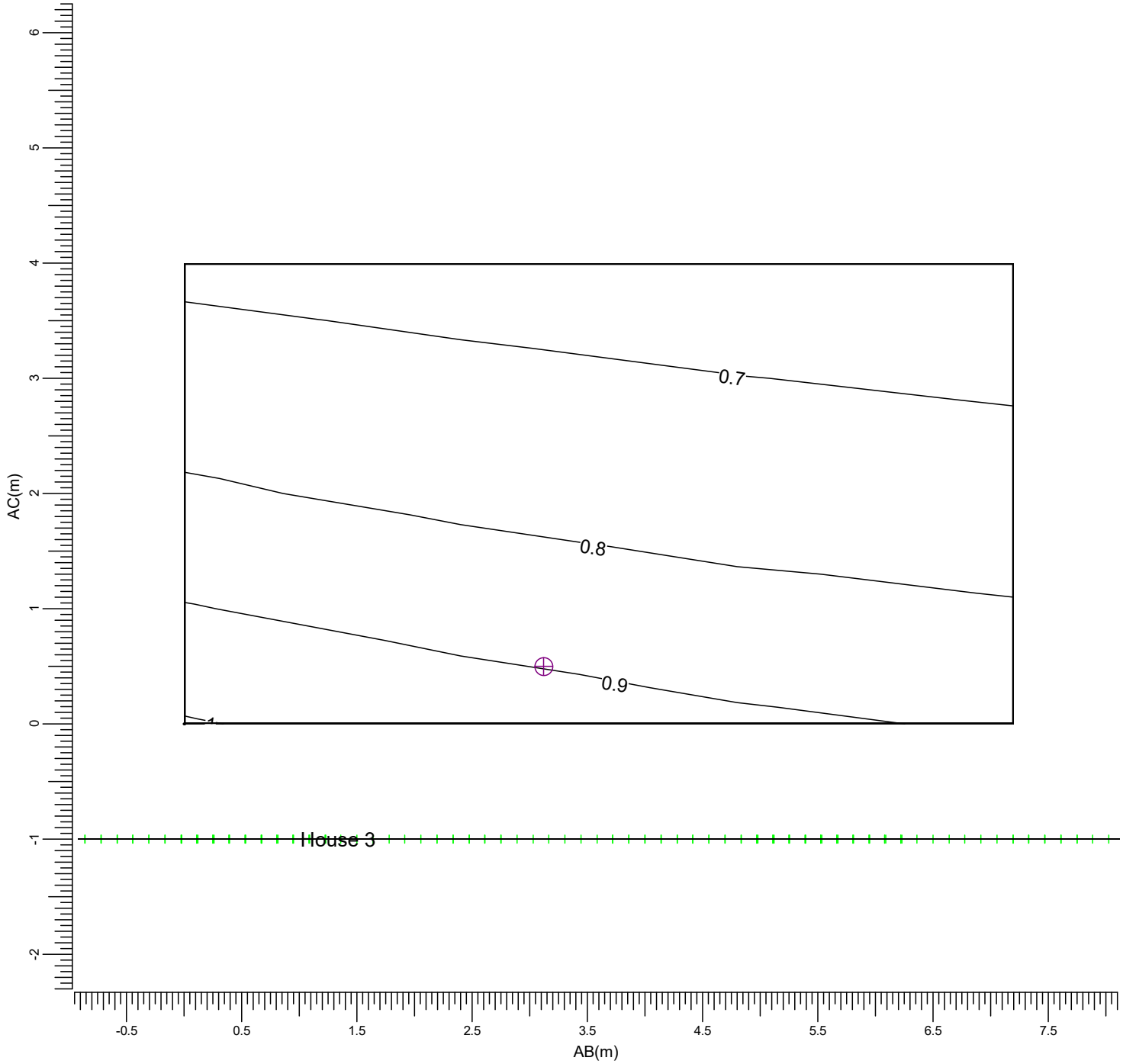
E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

Maximum	Project maintenance factor	Scale
0.79	0.90	1:100

3.8 Ev House 3: Iso Contour

Main Pitch

Grid : Ev House 3
Calculation : Surface Illuminance (lux)



(-76.50, 12.90, 5.00) C-----D (-76.70, 20.10, 5.00)
| |
(-76.50, 12.90, 1.00) A-----B (-76.70, 20.10, 1.00)

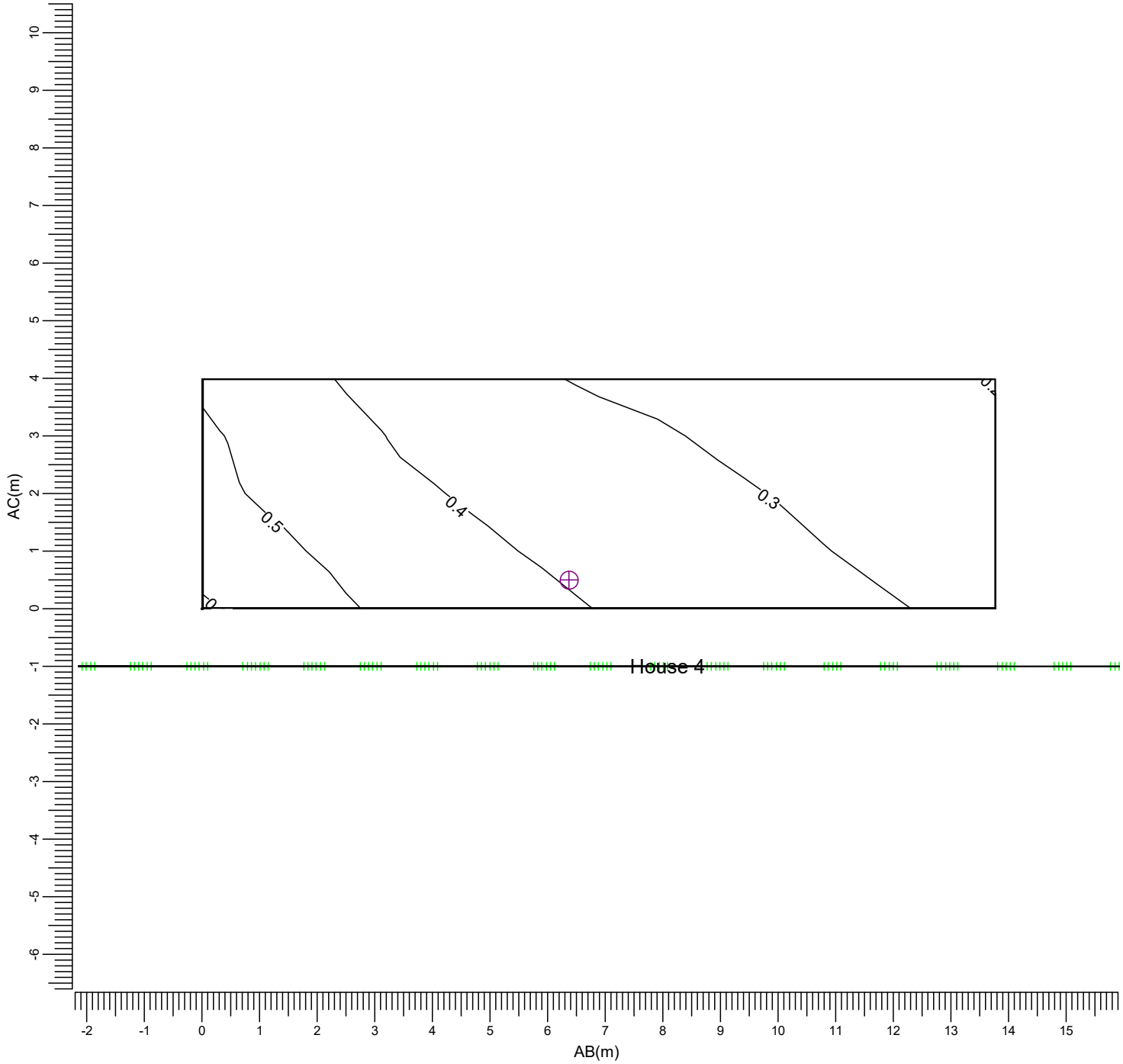
E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

Maximum	Project maintenance factor	Scale
1.01	0.90	1:50

3.9 Ev House 4: Iso Contour

Main Pitch

Grid : Ev House 4
Calculation : Surface Illuminance (lux)



(-74.50, 27.80, 5.00) C-----D (-82.80, 38.80, 5.00)
| |
(-74.50, 27.80, 1.00) A-----B (-82.80, 38.80, 1.00)

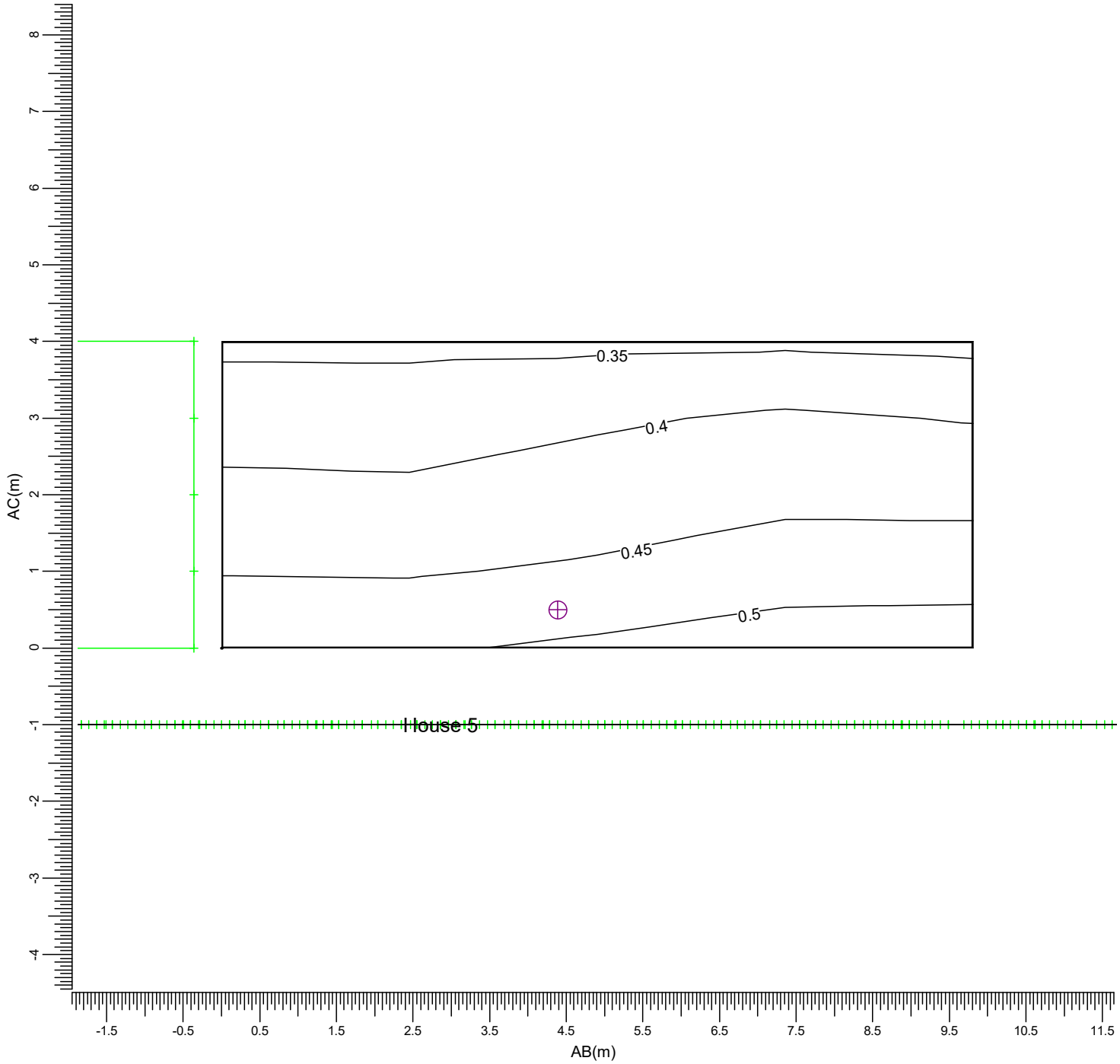
E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

Maximum	Project maintenance factor	Scale
0.61	0.90	1:100

3.10 Ev House 5: Iso Contour

Main Pitch

Grid : Ev House 5
Calculation : Surface Illuminance (lux)



(-86.90, 40.70, 5.00) C-----D (-83.50, 49.90, 5.00)
| |
(-86.90, 40.70, 1.00) A-----B (-83.50, 49.90, 1.00)

E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

Maximum	Project maintenance factor	Scale
0.53	0.90	1:75

4. Luminaire Details

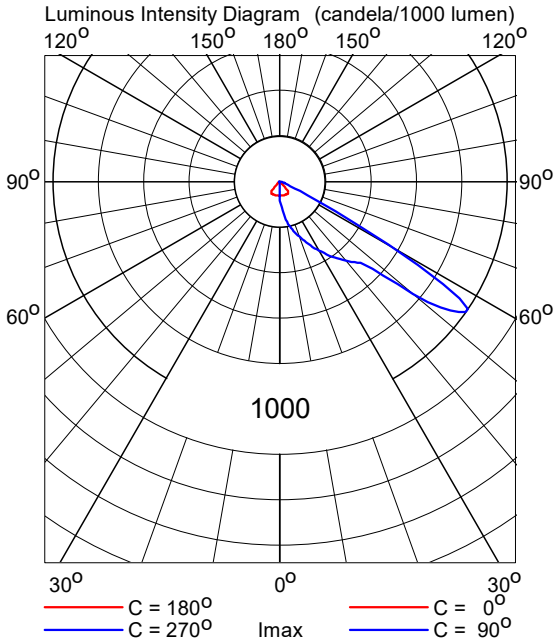
4.1 Project Luminaires

OptiVision LED gen3.5 2022
BVP528 OUT T35 1xLED2590-4S/757/757 E3/D4I A55-NMB LO

Light output ratios
- DLOR : 0.58
- ULOR : 0.00
- TLOR : 0.58

Ballast : E3/D4I
Lamp flux : 259000 lm
Luminaire wattage : 1505.9 W
Measurement code : LVM2I482U1

Note: Luminaire data not from database.



OptiVision LED gen3.5 2022
BVP518 OUT T35 1xLED1720-4S/757/757 E3/D4I A55-NMB LO

Light output ratios
- DLOR : 0.58
- ULOR : 0.00
- TLOR : 0.58

Ballast : E3/D4I
Lamp flux : 172000 lm
Luminaire wattage : 1006.0 W
Measurement code : LVM2I482U1

Note: Luminaire data not from database.

