

General Lighting

Installation : Llandarcy Asphalt

Project number : CW24790

Customer : Llandarcy Asphalt

Processed by : C Woodman

Date : 03.02.2025

Project description:
LED Flood Lighting Calculations

The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

Object : General Lighting
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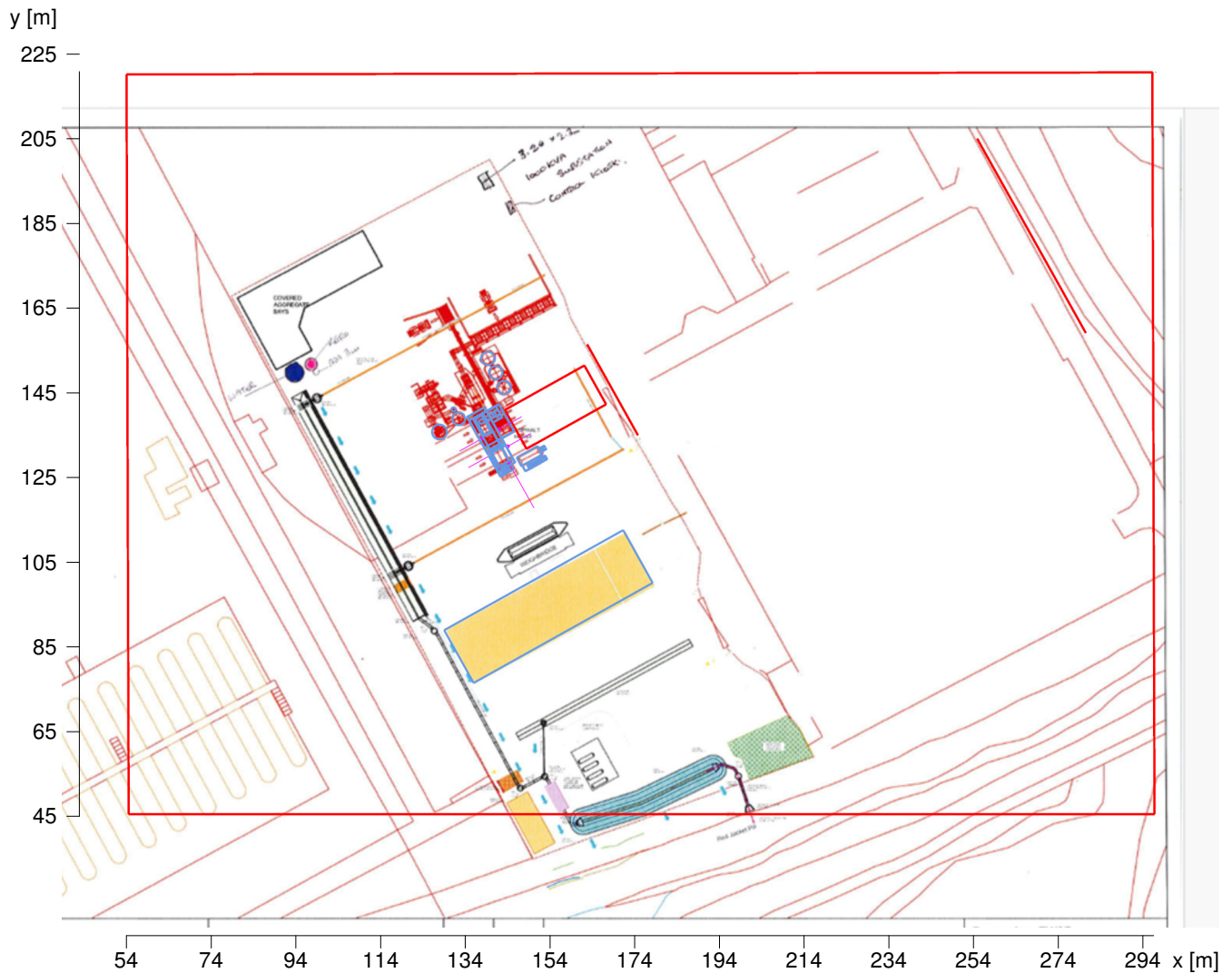
Table of contents

First Page	1
Table of contents	2
1 Exterior 1	
1.1 Description, Exterior 1	
1.1.1 Floor plan	3
1.1.2 3D view, View 1	4
1.2 Summary, Exterior 1	
1.2.1 Result overview, Ground Level Illuminance	5
1.2.2 Result overview, Vertical Illuminance 1 (Gates)	7
1.2.3 Result overview, Vertical Illuminance 2 (Motorway)	9
1.3 Calculation results, Exterior 1	
1.3.1 Table, Ground Level Illuminance (E)	11
1.3.2 Table, Vertical Illuminance 1 (Gates) (E)	12
1.3.3 Table, Vertical Illuminance 2 (Motorway) (E)	14
1.3.4 Pseudo colours, Ground Level Illuminance (E)	16
1.3.5 Pseudo colours, Vertical Illuminance 1 (Gates) (E)	17
1.3.6 Pseudo colours, Vertical Illuminance 2 (Motorway) (E)	18
1.3.7 3D luminance, View 1	19
1.3.8 3D luminance, View 2	20
1.3.9 3D luminance, View 3	21
1.3.10 3D luminance, View 4	22
1.3.12 3D pseudo colours, View 1 (E)	23

1 Exterior 1

1.1 Description, Exterior 1

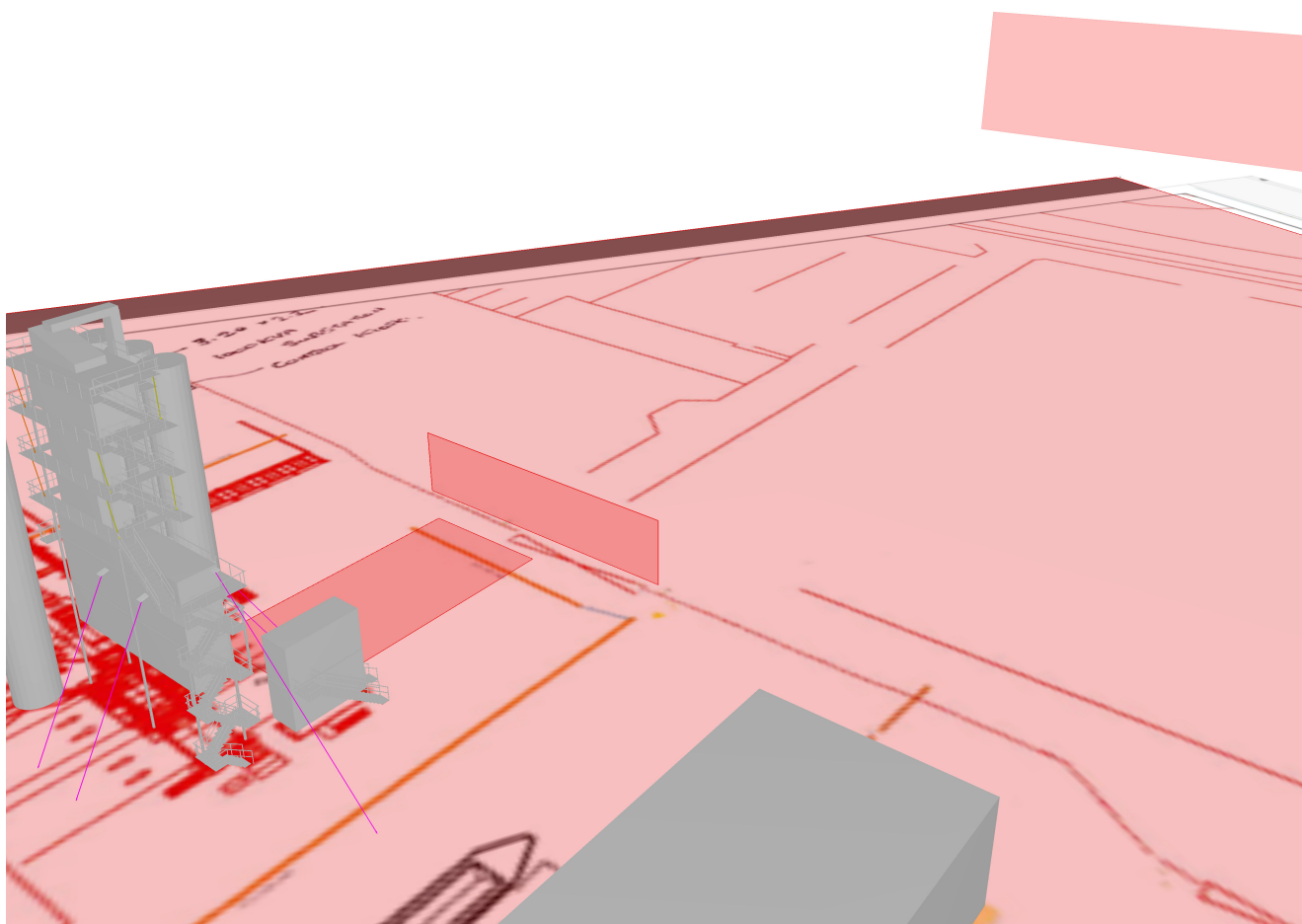
1.1.1 Floor plan



Object : General Lighting
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1.1 Description, Exterior 1

1.1.2 3D view, View 1





Design
Lighting Solutions

Object : General Lighting
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1 Exterior 1

1.2 Summary, Exterior 1

1.2.1 Result overview, Ground Level Illuminance

3	5 x	Order No.	: OV102100BKCW
		Luminaire name	: Inceptor® Ace
		Equipment	: 1 x LED 100 W / 12000 lm



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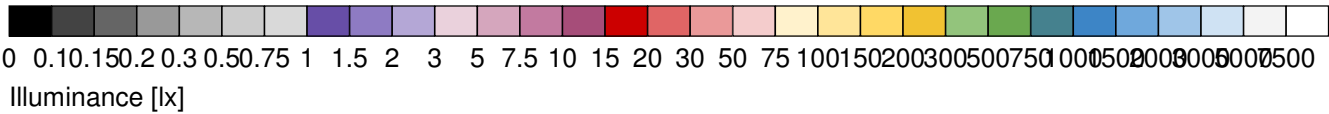
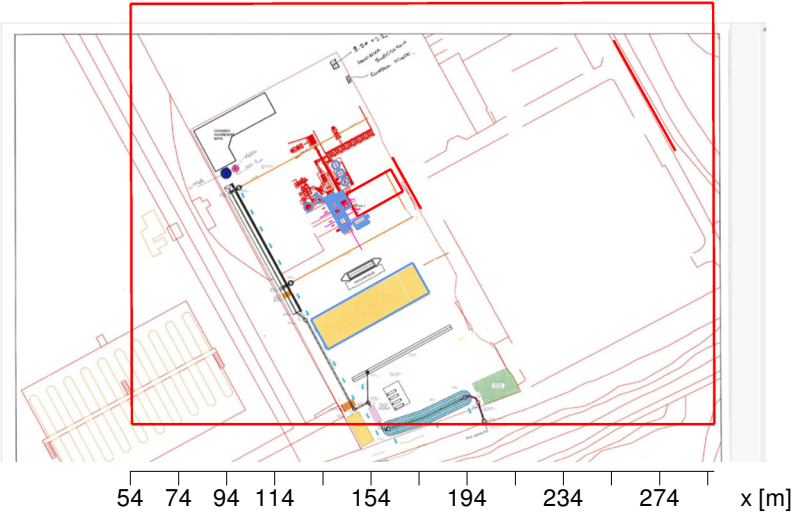
1.2 Summary, Exterior 1

1.2.2 Result overview, Vertical Illuminance 1 (Gates)

3	5 x	Order No.	: OV102100BKCW
		Luminaire name	: Inceptor® Ace
		Equipment	: 1 x LED 100 W / 12000 lm

1.2 Summary, Exterior 1

1.2.3 Result overview, Vertical Illuminance 2 (Motorway)



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	267500 lm
Total power	2250 W
Total power per area (42289.62 m²)	0.05 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	0.29 lx
Minimum illuminance	E_{min}	0.25 lx
Maximum illuminance	E_{max}	0.34 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.19 (0.84)
Diversity U_d	E_{min}/E_{max}	1:1.38 (0.73)

Type No. Make

Ovia		
1	5 x	Order No. : OV10250BKCW
		Luminaire name : Inceptor® Ace
		Equipment : 1 x LED 50 W / 5500 lm
2	5 x	Order No. : OV102300BKCW
		Luminaire name : Inceptor® Ace
		Equipment : 1 x LED 300 W / 36000 lm

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Date : 03.02.2025

1.2 Summary, Exterior 1

1.2.3 Result overview, Vertical Illuminance 2 (Motorway)

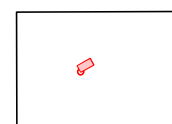
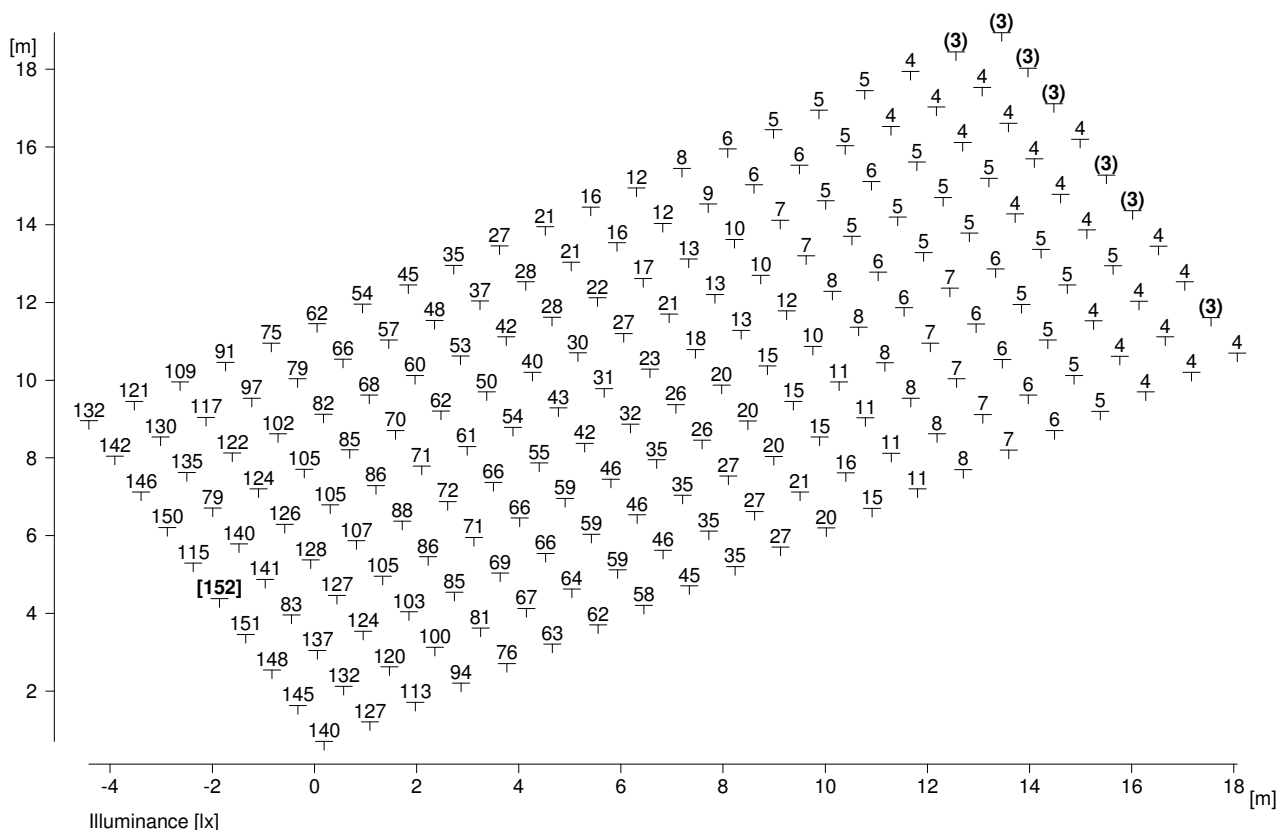
3	5 x	Order No.	: OV102100BKCW
		Luminaire name	: Inceptor® Ace
		Equipment	: 1 x LED 100 W / 12000 lm

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1 Exterior 1

1.3 Calculation results, Exterior 1

1.3.1 Table, Ground Level Illuminance (E)



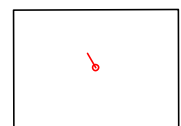
Height reference plane	: 0.00 m
Average illuminance	$\bar{E}_m$: 44 lx
Minimum illuminance	E_{min} : 3 lx
Maximum illuminance	E_{max} : 152 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 15.02 (0.07)

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1.3 Calculation results, Exterior 1

1.3.2 Table, Vertical Illuminance 1 (Gates) (E)

24	5.24	4.59	4.8	5.23	5.3	5.42	5.54	5.66
	5.36	4.75	4.95	5.44	5.51	5.76	5.85	5.93
	5.84	5.26	5.44	5.63	5.73	5.98	6.07	6.1
	5.66	5.41	5.61	5.79	5.91	6.19	6.3	6.29
22	5.84	5.63	5.84	6.01	6.16	6.44	6.53	6.48
	6.23	5.73	5.94	6.07	6.25	6.59	6.66	6.59
	6.06	5.6	5.85	6.24	6.44	6.76	6.82	6.7
20	6.28	5.85	6.1	6.47	6.67	7.03	7.08	6.9
	6.77	6.31	6.5	6.54	6.78	7.11	7.18	6.96
	7.02	6.59	6.78	6.75	7.01	7.3	7.33	7.14
18	7.13	6.76	6.93	6.92	7.2	7.16	7.24	7.33
	6.83	5.93	6.16	6.12	6.46	6.87	6.95	7.06
	6.95	6.68	6.86	6.73	6.56	7	7.07	7.11
16	7.04	6.11	6.3	6.12	6.57	6.96	7.03	7.11
	6.47	5.57	5.82	6.2	6.1	6.62	6.71	6.75
	6.53	5.54	5.8	6.18	6.08	6.67	6.74	6.79
14	6.65	5.64	5.93	6.23	6.08	6.61	6.66	6.69
	7.6	6.58	6.83	6.31	6.88	7.4	7.45	7.49
	7.62	6.58	6.88	6.25	6.99	7.54	7.57	7.59
12	7.72	6.65	6.97	6.26	7.02	7.51	7.54	7.53
	6.55	5.52	5.85	6.11	6.05	6.56	6.61	6.52
	6.29	5.27	5.6	5.84	5.88	6.22	6.26	6.2
10	6.25	5.31	5.51	5.85	5.71	6.16	6.21	6.32
	6.43	5.37	5.72	5.93	5.78	6.17	6.22	6.23
	6.28	5.28	5.49	5.86	5.73	6.13	6.03	6.21
8	6.08	5.5	5.65	5.83	5.44	5.9	6.14	6.16
	6.43	5.56	5.43	5.59	5.67	6.03	6.07	6.09
	6.08	5.25	5.36	5.78	5.64	5.97	6.01	6.03
6	6.47	5.61	5.71	5.55	5.65	5.91	5.93	5.95
	6.11	5.53	5.64	5.77	5.29	5.58	5.93	5.95
	6.36	5.12	5.22	5.67	5.56	5.5	5.56	5.92
4	6.19	5.31	5.15	5.27	5.49	5.74	5.77	5.43
	6.12	5.28	5.51	5.6	5.05	5.37	5.77	5.8



Part1

Average illuminance	$\bar{E}_m$	: 6.08 lx
Minimum illuminance	E_{min}	: 4.17 lx
Maximum illuminance	E_{max}	: 7.72 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.46 (0.69)

1.3 Calculation results, Exterior 1

1.3.2 Table, Vertical Illuminance 1 (Gates) (E)

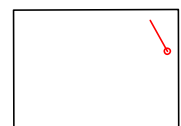


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1.3 Calculation results, Exterior 1

1.3.3 Table, Vertical Illuminance 2 (Motorway) (E)

	0.3	0.3	0.3	0.31	0.31	0.31	0.32	0.31	0.31	0.31	0.32	0.31
[m]	0.3	0.3	0.3	0.31	0.31	0.32	0.32	0.31	0.31	0.31	0.32	0.31
50	0.3	0.3	0.3	0.31	0.31	0.31	0.32	0.31	0.31	0.31	0.32	0.31
	0.3	0.3	0.3	0.31	0.31	0.31	0.32	0.31	0.31	0.31	0.32	0.31
	0.3	0.3	0.3	0.31	0.31	0.31	0.32	0.31	0.31	0.31	0.32	0.31
	0.29	0.3	0.3	0.31	0.31	0.31	0.32	0.31	0.3	0.31	0.31	0.31
45	0.28	0.29	0.29	0.29	0.3	0.3	0.3	0.3	0.29	0.3	0.3	0.31
	0.28	0.29	0.29	0.29	0.3	0.3	0.3	0.3	0.29	0.3	0.3	0.3
	0.29	0.29	0.3	0.3	0.3	0.31	0.31	0.3	0.3	0.3	0.31	0.3
	0.27	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.3	0.3
40	0.28	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.3
	0.27	0.28	0.28	0.28	0.29	0.29	0.29	0.28	0.28	0.29	0.29	0.29
	0.28	0.28	0.29	0.29	0.29	0.29	0.3	0.29	0.29	0.29	0.3	0.3
	0.28	0.28	0.29	0.29	0.29	0.29	0.3	0.3	0.29	0.29	0.3	0.3
35	0.27	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.28	0.29	0.29	0.29
	0.28	0.29	0.29	0.29	0.3	0.3	0.3	0.29	0.29	0.29	0.3	0.29
30	0.28	0.29	0.29	0.3	0.3	0.3	0.3	0.29	0.29	0.29	0.3	0.29
	0.29	0.29	0.3	0.3	0.3	0.3	0.3	0.29	0.29	0.29	0.3	0.29
	0.29	0.29	0.3	0.3	0.3	0.3	0.3	0.29	0.29	0.29	0.3	0.29
	0.29	0.3	0.3	0.3	0.31	0.3	0.31	0.29	0.29	0.29	0.3	0.29
25	0.31	0.31	0.31	0.31	0.32	0.31	0.31	0.3	0.29	0.3	0.3	0.3
	0.31	0.32	0.32	0.32	0.32	0.31	0.31	0.3	0.29	0.3	0.3	0.3
	0.32	0.32	0.33	0.33	0.33	0.32	0.32	0.3	0.29	0.3	0.3	0.3
	0.32	0.33	0.33	0.33	0.33	0.32	0.32	0.3	0.29	0.3	0.3	0.29
20	0.27	0.28	0.28	0.28	0.28	0.28	0.29	0.28	0.28	0.28	0.29	0.29
	0.27	0.28	0.28	0.28	0.28	0.28	0.29	0.28	0.27	0.28	0.29	0.29
	0.27	0.28	0.28	0.28	0.28	0.28	0.29	0.28	0.28	0.28	0.29	0.29
15	0.27	0.28	0.28	0.28	0.28	0.29	0.29	0.28	0.28	0.28	0.29	0.29
	0.27	0.27	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.28	0.28
	0.27	0.27	0.28	0.27	0.28	0.28	0.28	0.27	0.26	0.27	0.28	0.28
10	0.32	0.32	0.33	0.32	0.32	0.3	0.3	0.27	0.26	0.27	0.27	0.28
	0.31	0.32	0.33	0.32	0.32	0.29	0.29	0.26	(0.25)	0.26	0.26	0.27
	0.32	0.33	[0.34]	0.33	0.33	0.3	0.3	0.27	0.26	0.27	0.27	0.3
	0.32	0.33	[0.34]	0.33	0.33	0.3	0.3	0.26	0.26	0.29	0.27	0.29

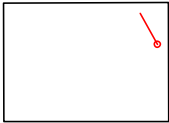
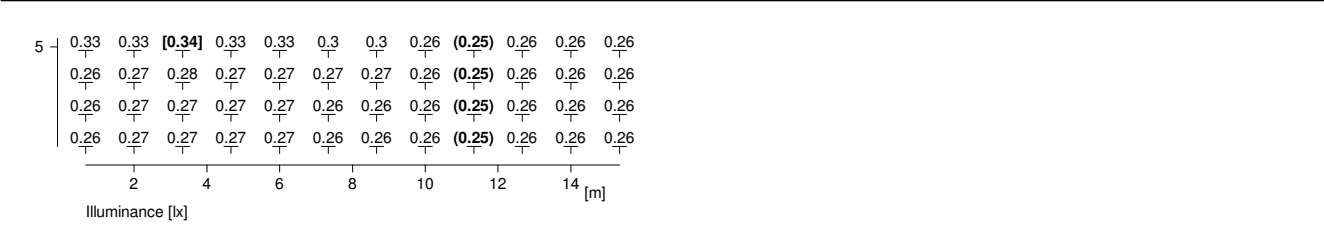


Part1

Average illuminance	$\bar{E}_m$	: 0.29 lx
Minimum illuminance	E_{min}	: 0.25 lx
Maximum illuminance	E_{max}	: 0.34 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.19 (0.84)

1.3 Calculation results, Exterior 1

1.3.3 Table, Vertical Illuminance 2 (Motorway) (E)



Part2



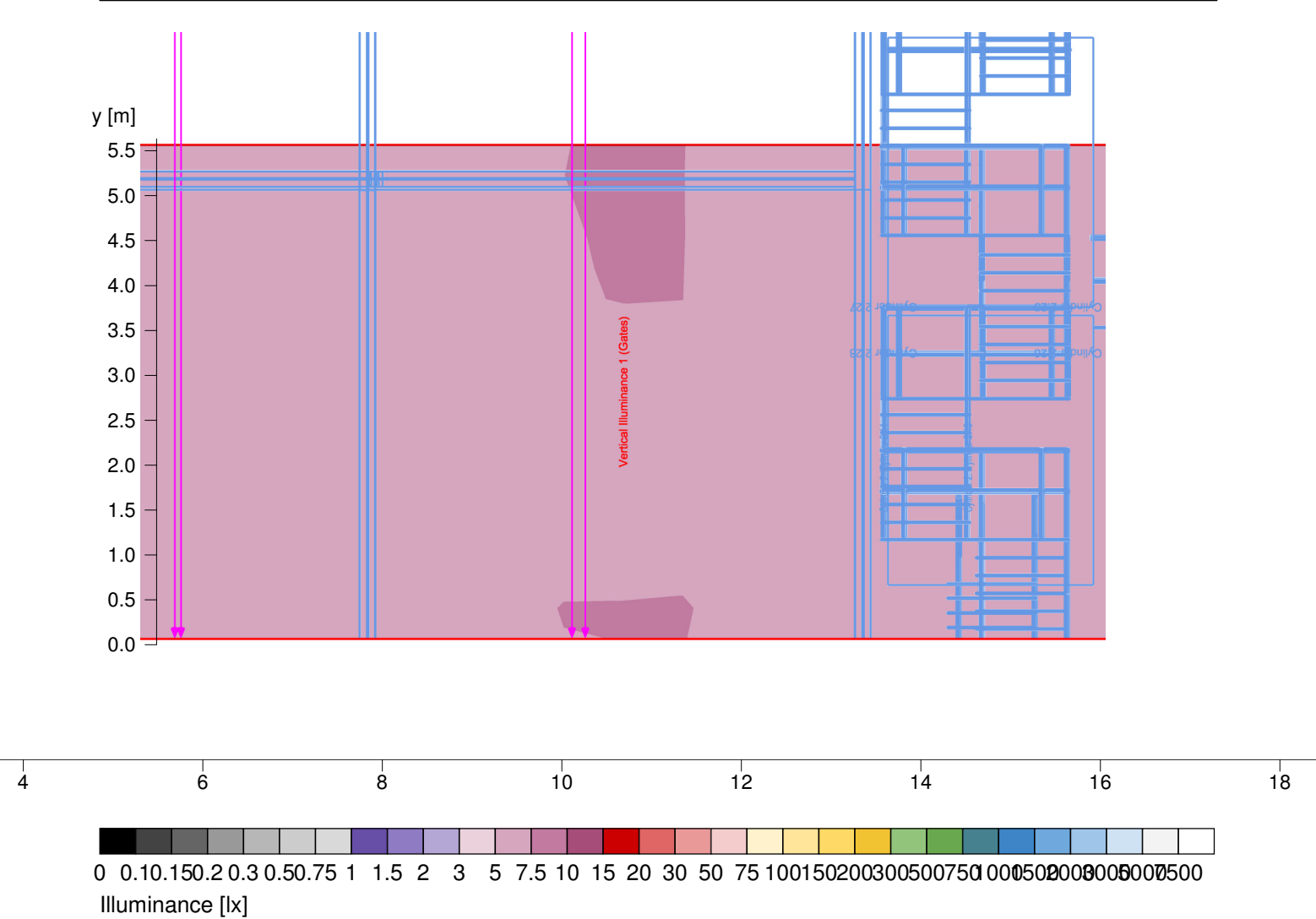
Design
Lighting Solutions

1.3.4 Pseudo colours, Ground Level Illuminance (E)



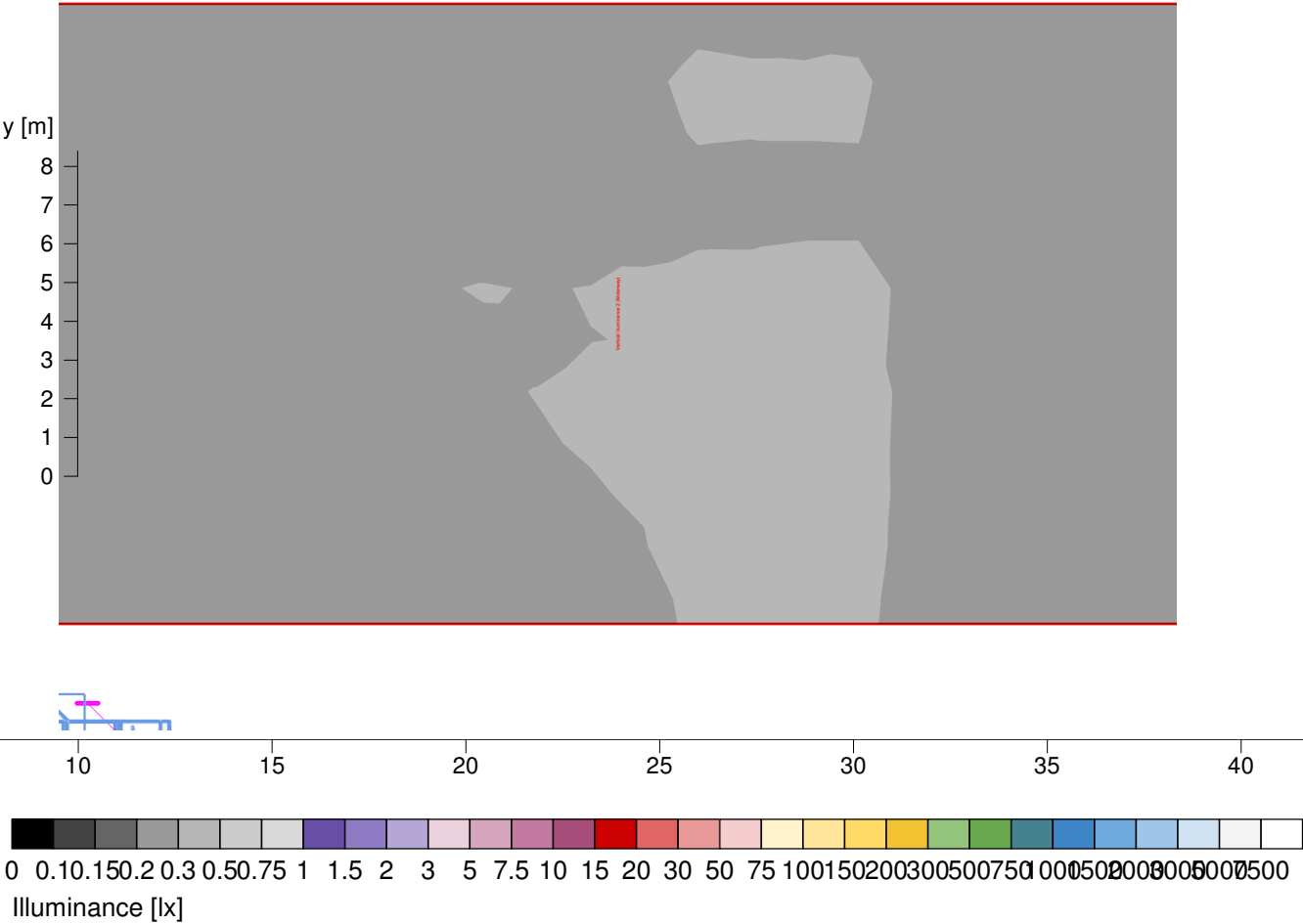
1.3 Calculation results, Exterior 1

1.3.5 Pseudo colours, Vertical Illuminance 1 (Gates) (E)



Average illuminance	$\bar{E}_m$	: 6.08 lx
Minimum illuminance	E_{min}	: 4.17 lx
Maximum illuminance	E_{max}	: 7.72 lx
Uniformity U_0	$E_{min}/\bar{E}_m$	: 1 : 1.46 (0.69)

1.3 Calculation results, Exterior 1
1.3.6 Pseudo colours, Vertical Illuminance 2 (Motorway) (E)

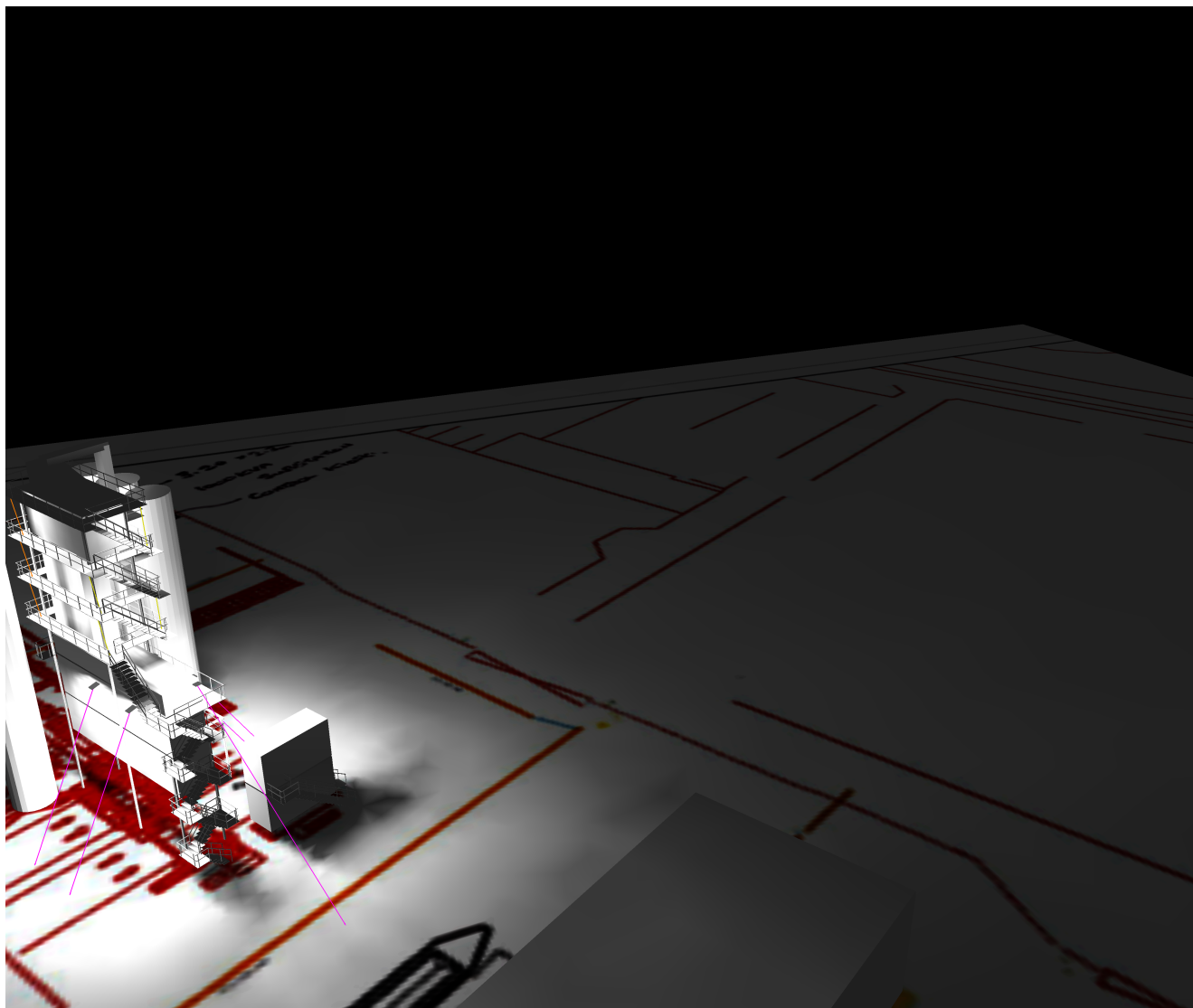


Average illuminance	$\bar{E}_m$	: 0.29 lx
Minimum illuminance	E_{min}	: 0.25 lx
Maximum illuminance	E_{max}	: 0.34 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.19 (0.84)

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1.3 Calculation results, Exterior 1

1.3.7 3D luminance, View 1



Luminance in the scene

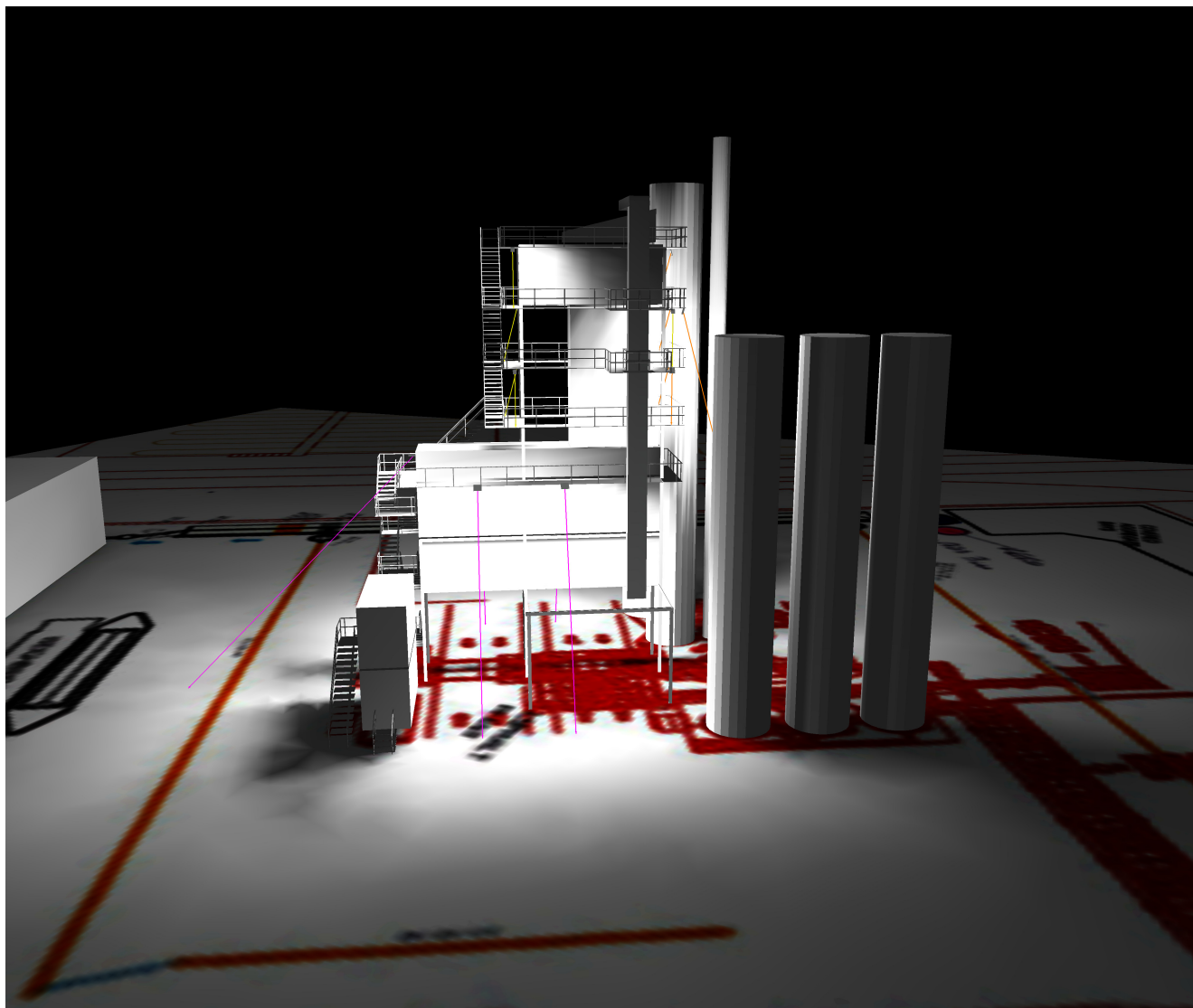
Minimum: : 0 cd/m²

Maximum: : 1410 cd/m²

Object : General Lighting
Installation : Llandarcy Asphalt
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1.3 Calculation results, Exterior 1

1.3.8 3D luminance, View 2

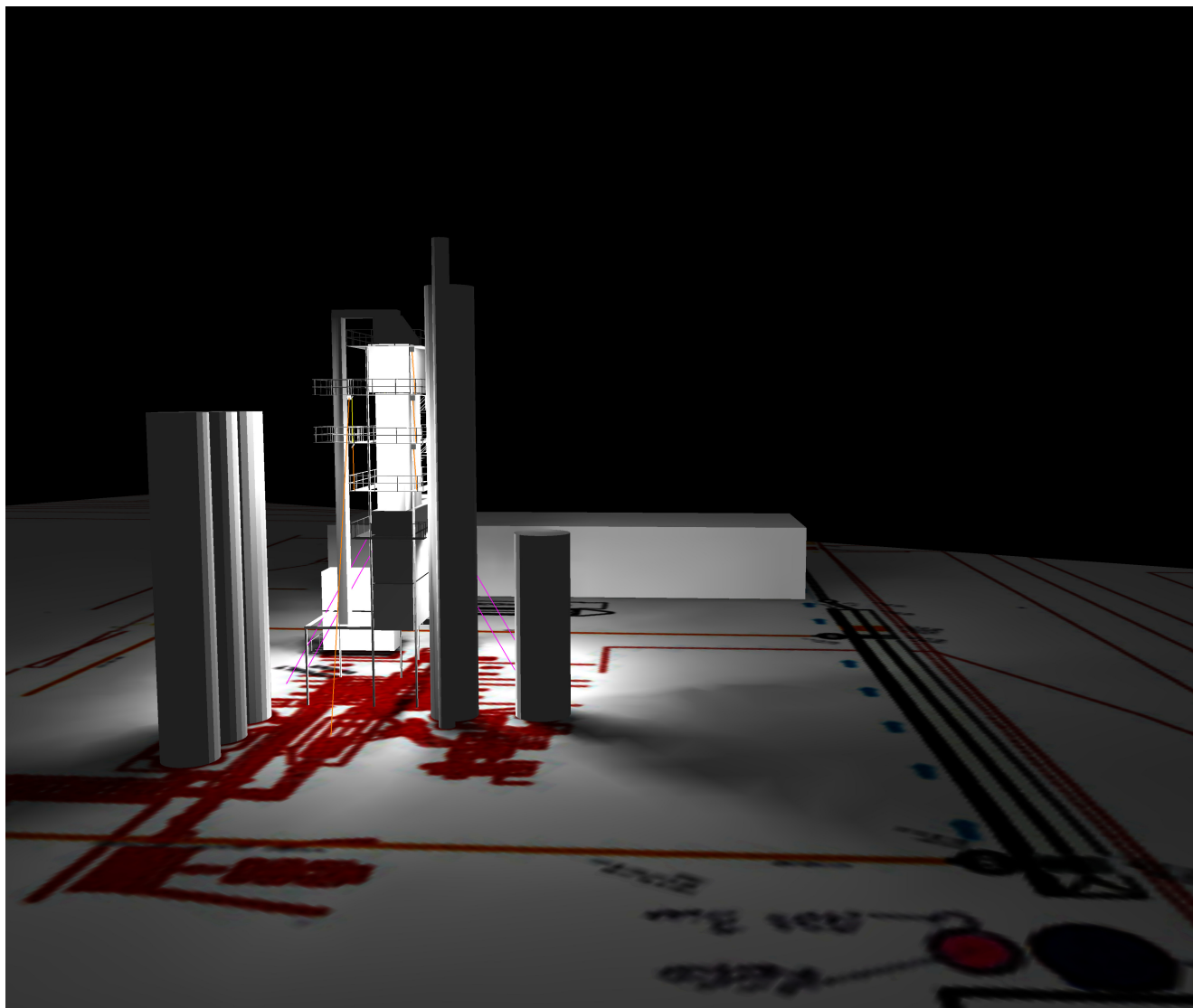


Luminance in the scene
Minimum: : 0 cd/m²
Maximum: : 1410 cd/m²

Object : General Lighting
Installation : Llandarcy Asphalt
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1.3 Calculation results, Exterior 1

1.3.9 3D luminance, View 3



Luminance in the scene

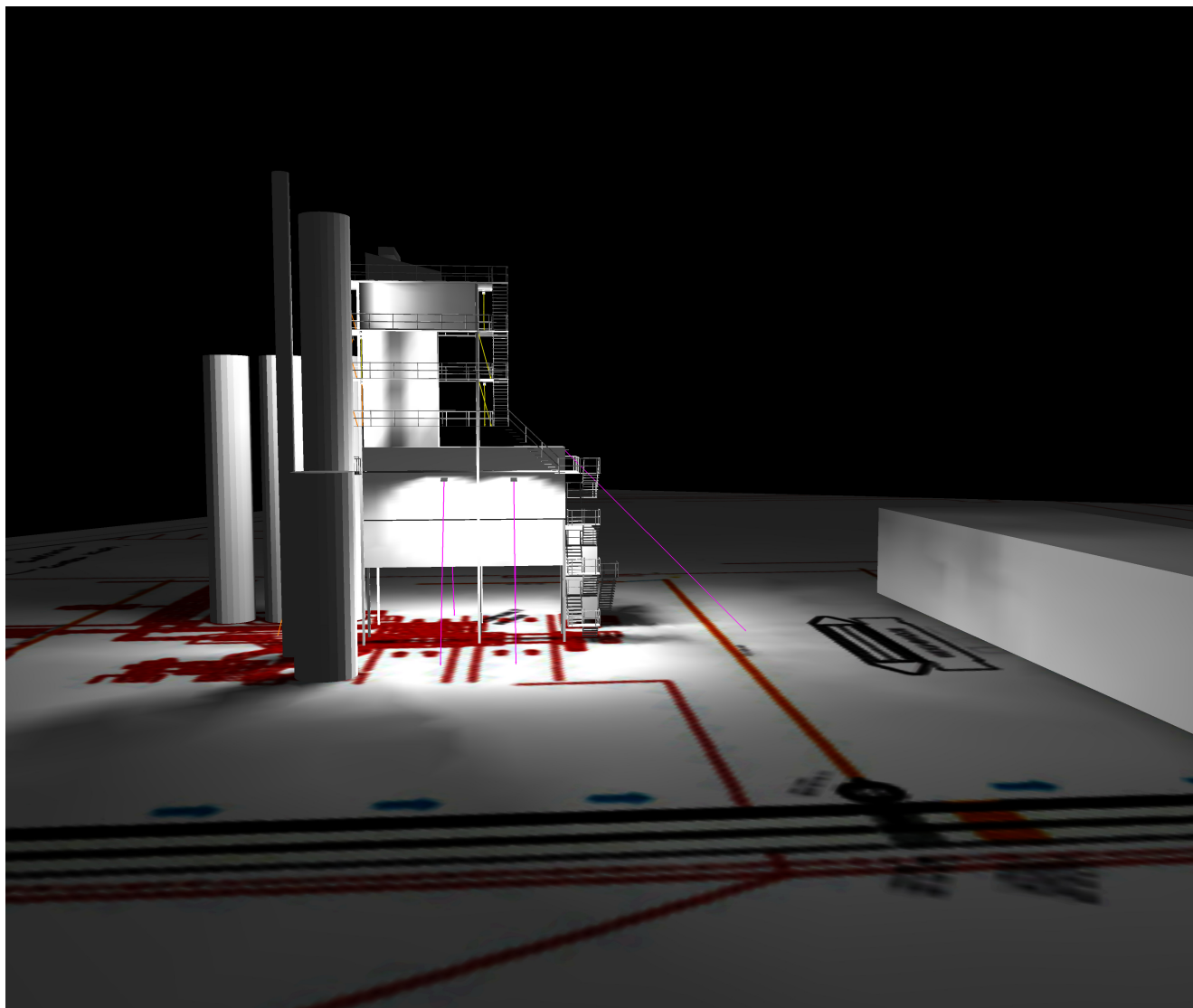
Minimum: : 0 cd/m²

Maximum: : 1410 cd/m²

Object : General Lighting
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1.3 Calculation results, Exterior 1

1.3.10 3D luminance, View 4



Luminance in the scene

Minimum: : 0 cd/m²

Maximum: : 1410 cd/m²

1.3 Calculation results, Exterior 1

1.3.12 3D pseudo colours, View 1 (E)

