



PROPOSED MIXED USE DEVELOPMENT,  
Emmet Road,  
Inchicore,  
Dublin 8

Site Lighting Report  
D2030-IN2-ZZ-ZZ-RP-EE-0001  
IN2 Project No. D2006  
27/09/2022  
REV3.0

## Revision History

Date	Revision	Description
16/09/2022	1.0	Planning issue – for information
23/09/2022	2.0	Planning issue for review
27/09/2022	3.0	Final Planning issue

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## 1.0 Introduction

IN2 Engineering Design Partnership has been commissioned to provide the External Site Lighting report to support the planning application for for a mixed-use development at Emmet Road, Inchicore, Dublin 8.

The development will comprise 578 no. apartments, consisting of 110 no. studio apartments, 172 no. 1 bedroom apartments, 250 no. 2 bedroom apartments (including 10 no. duplex apartments) and 46 no. 3 bedroom apartments (all apartments to have balconies or terraces), community facilities Library/Community Hub, Creche, Supermarket, 5 no. units (retail/café/restaurant/class 2 financial services floorspace) & 2 no. Café units), a public plaza fronting onto Emmet Road and the installation of a new watermain c 200m in length along Emmet Road to the junction with Tyrconnell Road/Grattan Crescent. The proposal includes works to a protected structure (8705 - Richmond/Keogh Barracks, relating to works to rubble stone boundary wall).

This report will provide an overview of the relevant codes and standards applicable to site lighting, in particular the requirements for accessible routes.

The report details the design criteria used for the Emmet Road development and demonstrate safe levels of illumination to pedestrian areas, in particular disabled access routes, and the public plaza etc.

## 2.0 Executive Summary

The following report contains the design layout and accompanying calculations of the site lighting scheme for the proposed Emmet Road development. The external lighting for this permitted development has been designed to achieve the performance requirements as set out in the following standards

- DCC - Public Lighting Installations in Residential and Industrial Areas
- BS 5489-1:2013 Code of Practice for the Design of Road Lighting
- BS EN 13201-2:2015 – Road Lighting Part 2: Performance Requirements
- BS 8300:2018 - Design of an accessible and inclusive built environment
- Institution of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01:2011
- CIBSE – Lighting Guide 6: The Exterior Environment
- NSAI National Rules for Electrical Installations I.S 10101: 2020
- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010)
- Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2018).

The design criteria set out for this permitted development is based on the lighting requirements of the BS EN 13201-2:2015, BS 5489-1:2013 and BS 8300:2018, as specified in the table below.

Area	Lighting Levels (Lux)	Uniformity (Uo)
Pedestrian Access Routes in the open Environment. Level and gently sloped.	5	0.2
Entrances/exits of buildings.	100	0.4
Stairways and ramps in the open Environment	30	0.2
Stairways and ramps adjacent to the entrances / exits of buildings	100	0.4
Car Parks (light traffic)	5	-
Car Park (Medium traffic)	10	-
Entrance Road (Main Traffic Routes)	10	0.2

Fig 1.1 – Minimum Lighting Requirements

### 3.0 Design analysis and Calculation Results

The proposed development's site lighting has been designed to ensure that the lighting criteria set out in each of the relevant standards listed previously are met or exceeded, and that adequate illumination is provided to ensure that key requirements such as roads, streets, access/egress, enhanced site security, and the safe use of paths are met or exceeded.

The site lighting is designed to comply with the recommendations from the Ecological (Biodiversity) Appraisal, which is included in the planning submission. According to the Enviroguide Bat Lighting requirements, which identify that small numbers of bats may use even very minor cracks or crevices for temporary roosting, the design has been assessed to establish minimal environmental and ecological impact through glare, sky glow, and obtrusive light (light spill), and will adhere to the following characteristics.

- The minimum level of appropriate/required lighting level will be provided within the developed/residential areas.
- Light standards will be fitted with low intensity, horizontal cut-off LED light fittings employing a narrow directional light or cowed light. This will avoid the effect of light spill arising.
- The lighting includes dimming by 30% post curfew hours.
- Light standards and associated lighting will be directed away from areas of open space.
- No floodlighting will be used in the development.
- The avoidance of direct lighting of proposed areas of habitat creation/landscape planting, or on trees planted.
- Goldenbridge Cemetery will not have an increase in the current lux level due to the adjacent development.
- Unnecessary light spill controlled through a combination of directional lighting and hooded/shielded luminaires or strategic planting to provide screening vegetation.
- The colour rendering of the selected light fitting will be 3000k\* making the LED fittings a warmer light, helping to further minimize the impact on the local wildlife
- Where lighting is necessary, it shall be of limited height and targeted downwards to prevent overspill.
- Bat boxes will not be illuminated.

## 4.0 Design Analysis & Calculation Results.

### 4.1 Ramps / Steps

The lighting performance of the Ramps & Steps in the open areas around the development have been assessed with fitting Type 'X6' LED strip luminaire and Type 'X7' recessed LED circular luminaire.

#### 4.1.1 Ramps / Steps

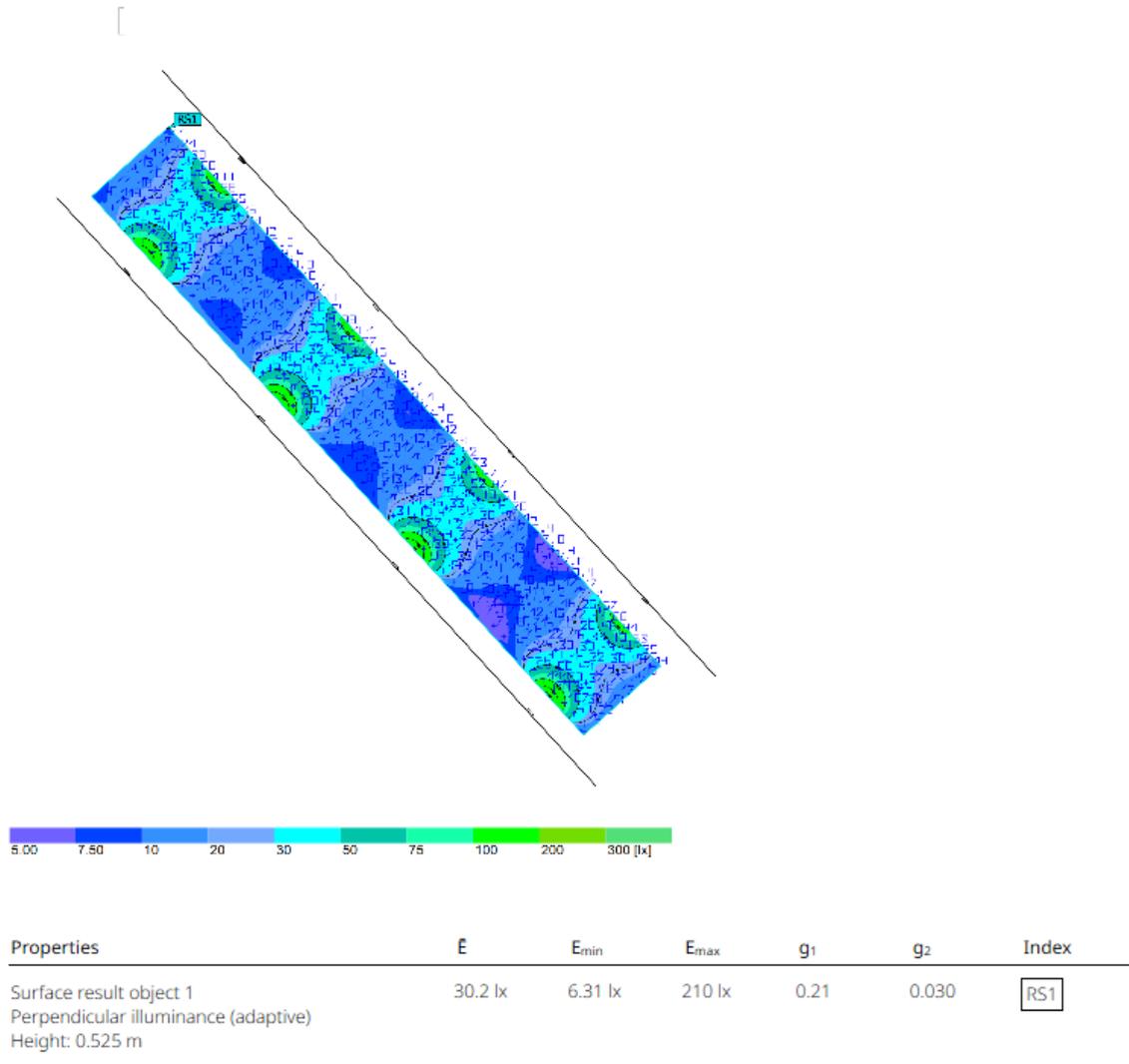


Fig 4.1.1 – Illumination Levels of Steps & Ramps

Evaluation	Target	Result	
Eaverage (maintained)	30 lux	30.2 lux	Pass
UO (Uniformity)	0.20	0.21	Pass

Fig 4.1.2 – Analysis Results

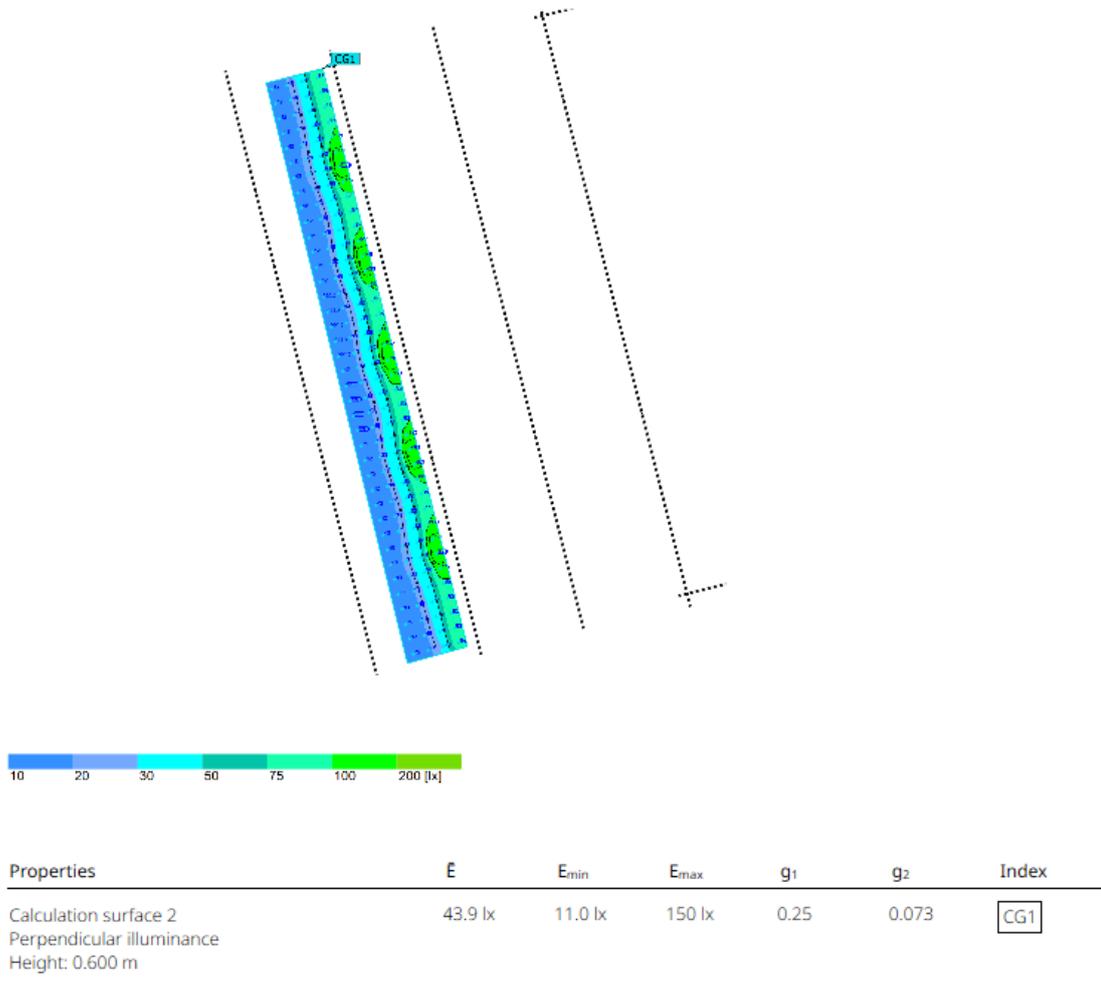


Fig 4.1.3 – Illumination Levels of Steps & Ramps

Evaluation	Target	Result	
Eaverage (maintained)	30 lux	43.9 lux	Pass
UO (Uniformity)	0.20	0.25	Pass

Fig 4.1.4 – Analysis Results

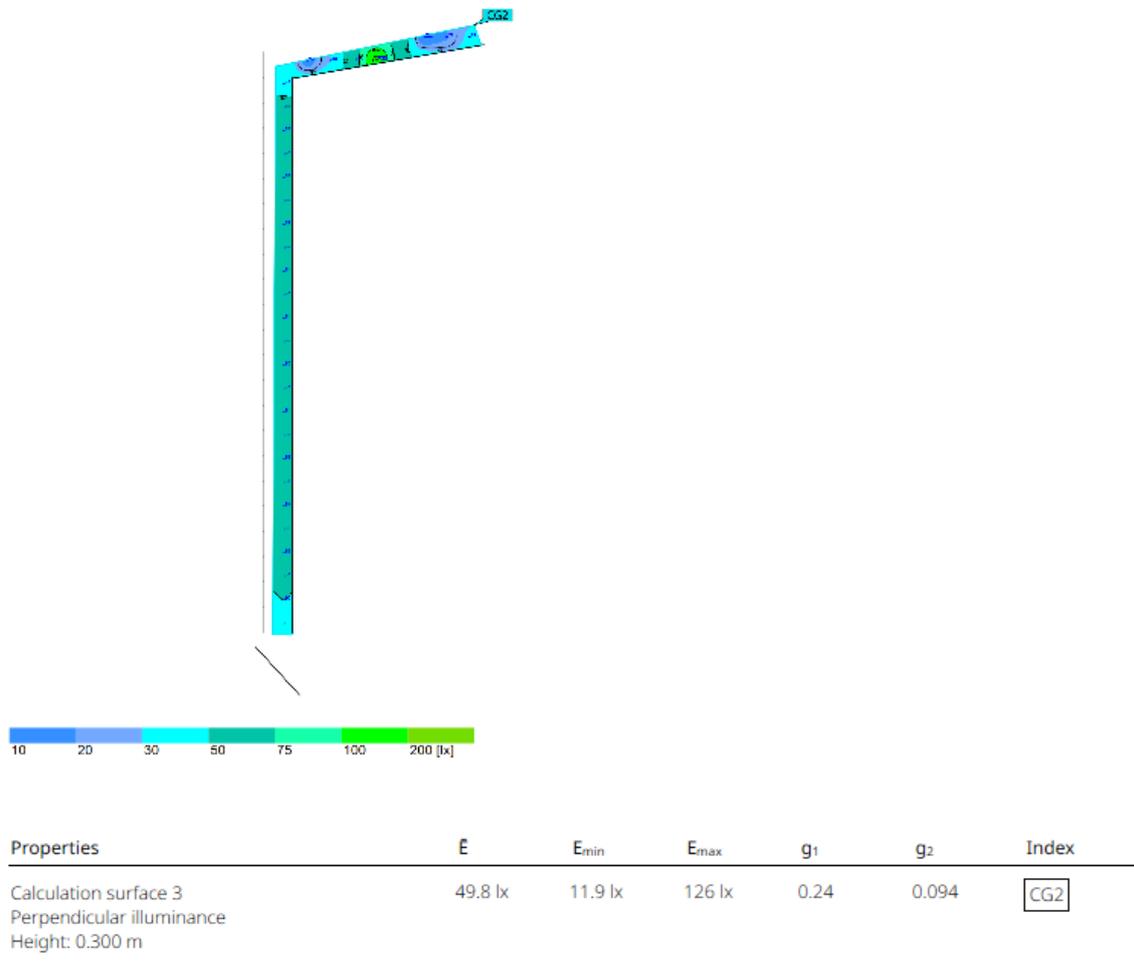


Fig 4.1.5 – Illumination Levels of Steps & Ramps

Evaluation	Target	Result	
Eaverage (maintained)	30 lux	49.8 lux	Pass
UO (Uniformity)	0.20	0.24	Pass

Fig 4.1.6 – Analysis Results

## 4.2 Public Plaza Pedestrian Area

The lighting performance at the Public Plaza Pedestrian area has been assessed with fitting Type 'X3' multi headed (180° & 360° optics) LED luminaires mounted on 6-metre-high lighting columns.

### 4.2.1 Public Plaza Pedestrian Area

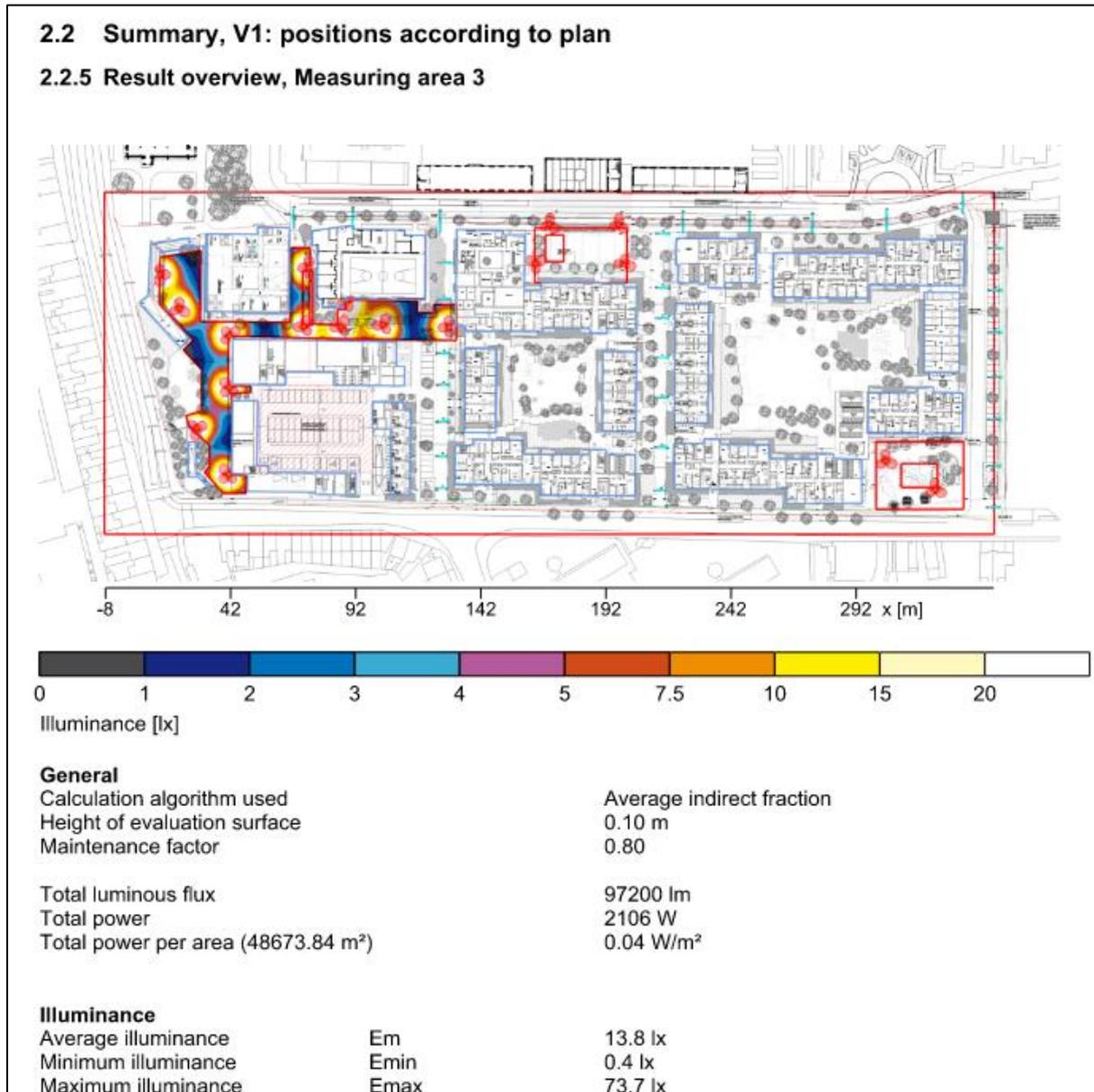


Fig 4.2.1 – Illumination Levels at Public Plaza

Evaluation	Target	Result	
Eaverage (maintained)	5 lux	13.8	Pass
UO (Uniformity)	0.20	0.20	Pass

Fig 4.2.2 – Analysis Results

### 4.3 Playground Area

The lighting performance at the Playground area has been assessed with fitting Type ‘X3’ multi headed (180° & 360° optics) LED luminaires mounted on 6-metre-high lighting columns.

#### 4.3.1 Playground Area

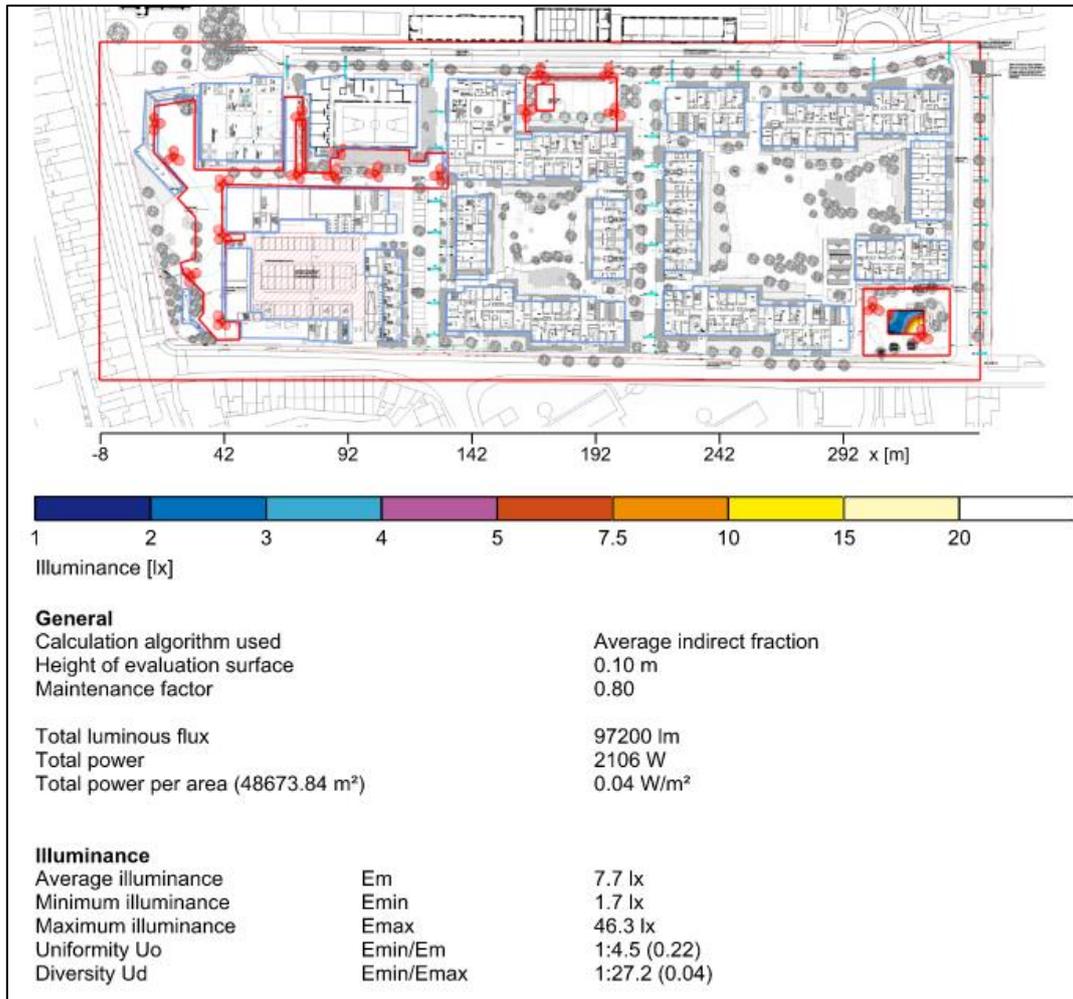


Fig 4.3.1 – Illumination Levels at Playground Area

Evaluation	Target	Result	
Eaverage (maintained)	5 lux	7.7 lux	Pass
UO (Uniformity)	0.20	0.22	Pass

Fig 4.3.2 – Analysis Results

#### 4.4 Public Lighting – Patriots Path

The lighting performance along Patriots Path has been assessed with fitting Type ‘X5’ multi headed LED luminaires mounted on 8-metre-high lighting columns. The public lighting luminaire will be mounted at 8 metres with the secondary luminaires for the path mounted on the same columns at 6 metres.

##### 4.4.1 Public Lighting – Patriots Path

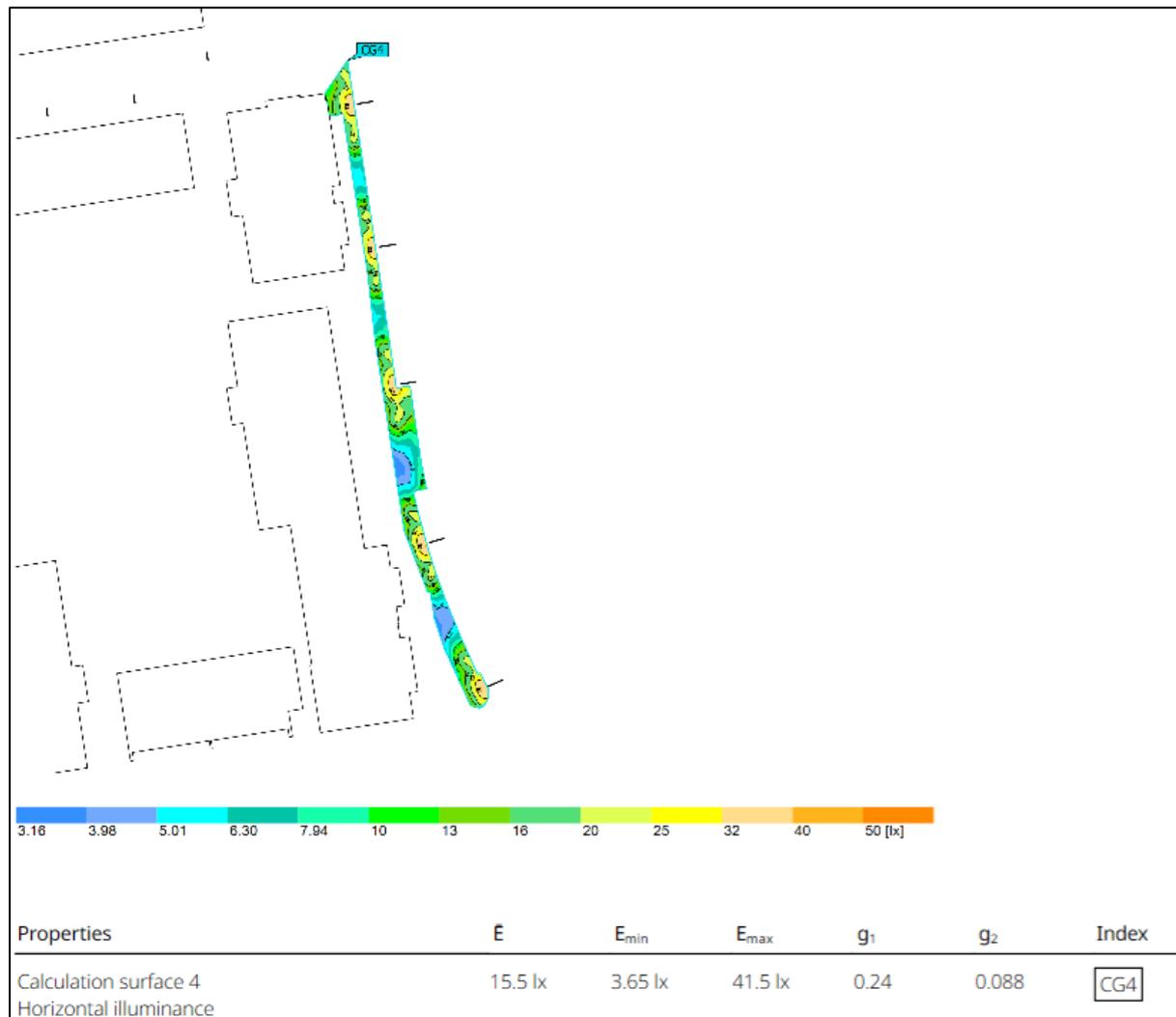


Fig 4.4.1 – Illumination Levels at Patriots Path

Evaluation	Target	Result	
Eaverage (maintained)	15 lux	15.5 lux	Pass
UO (Uniformity)	0.20	0.24	Pass

Fig 4.4.2 – Analysis Results

## 4.5 Internal Streets

The lighting performance along the internal streets has been assessed with fitting Type ‘X4’ single headed LED luminaire mounted on 6-metre-high lighting columns.

### 4.5.1 Internal Streets

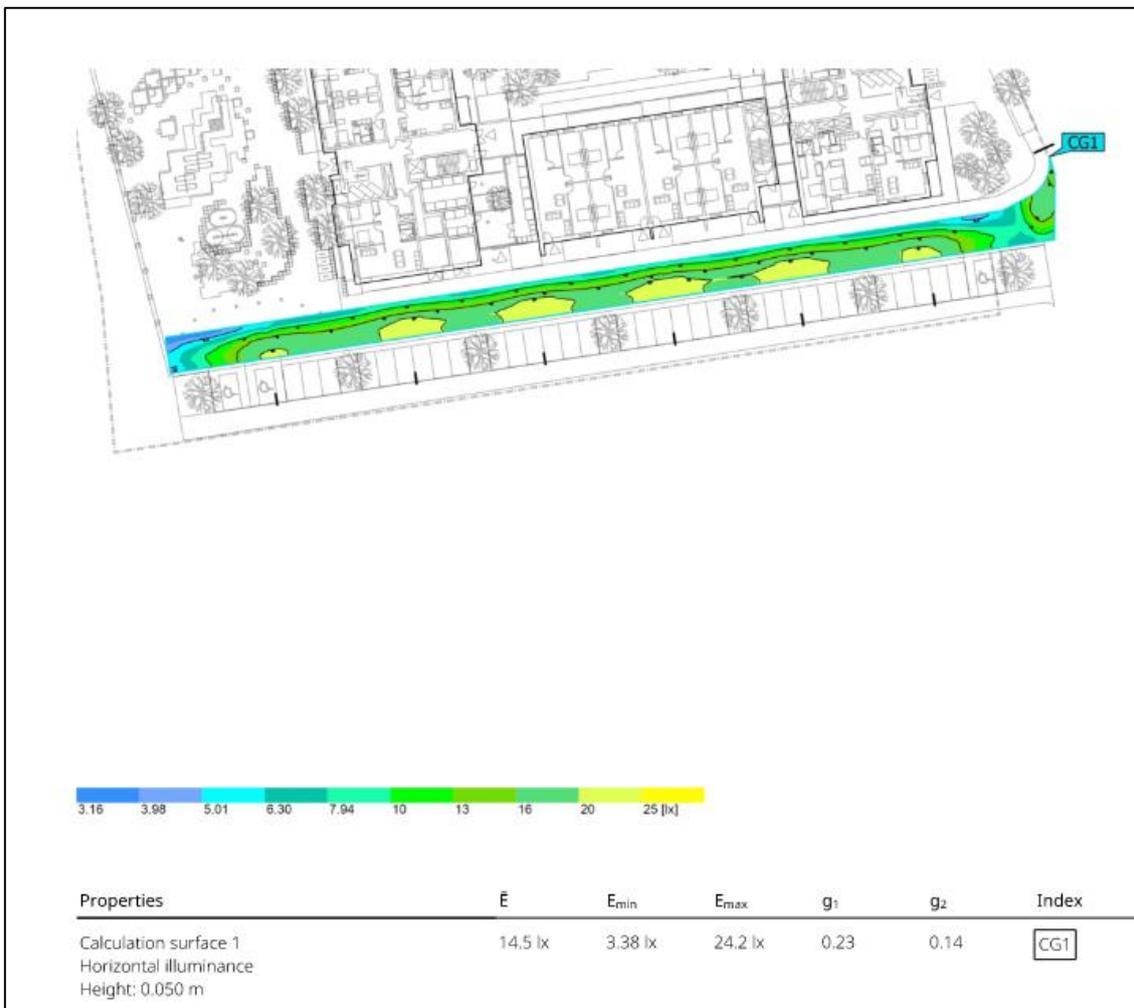


Fig 4.5.1 – Illumination Levels along internal streets

Evaluation	Target	Result	
Eaverage (maintained)	15 lux	~14.5	Pass
UO (Uniformity)	0.20	0.23	Pass

Fig 4.5.2 – Analysis Results

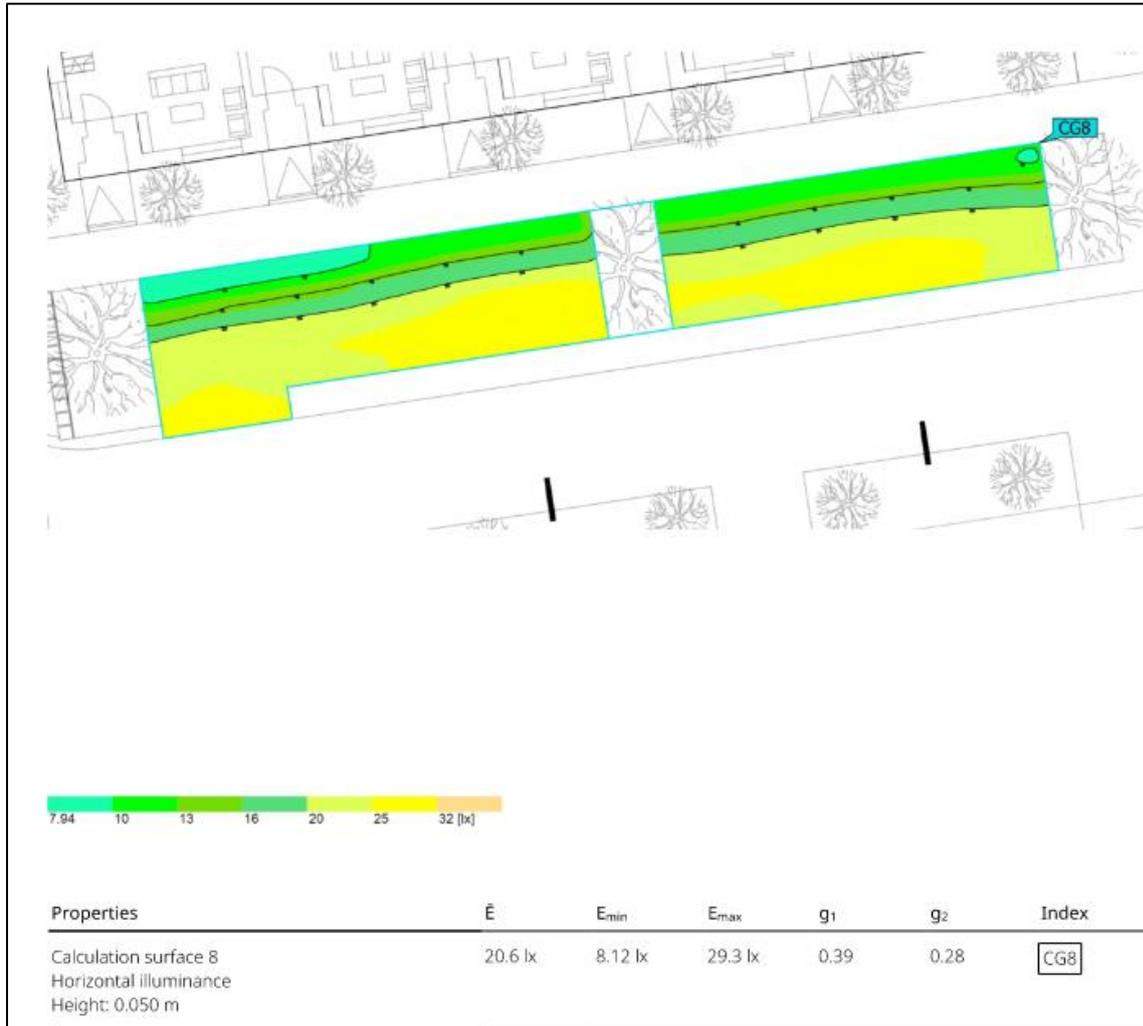


Fig 4.5.3 – Illumination Levels along internal streets

Evaluation	Target	Result	
Eaverage (maintained)	15 lux	20.6	Pass
UO (Uniformity)	0.20	0.39	Pass

Fig 4.5.4 – Analysis Results

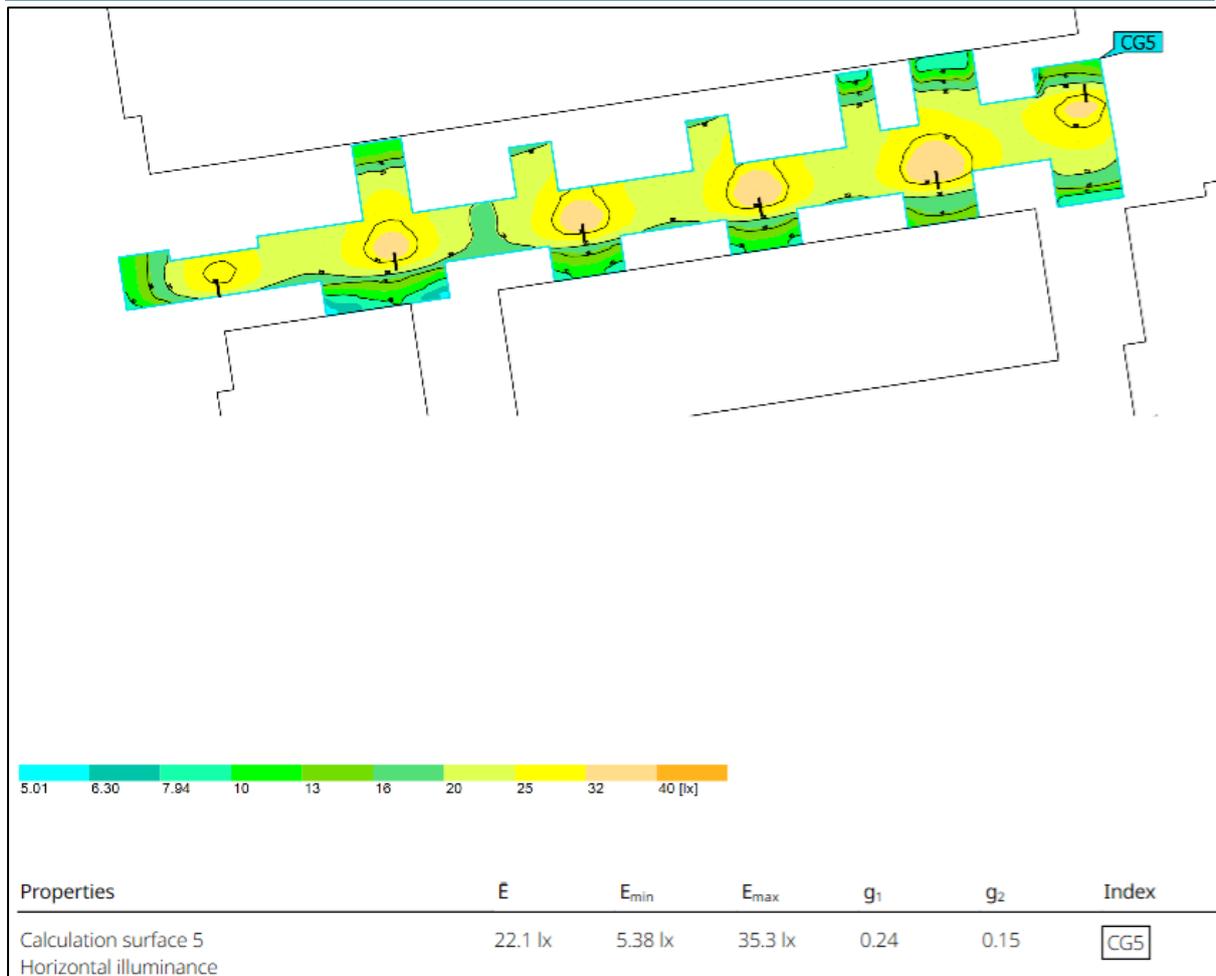


Fig 4.5.6 – Illumination Levels along internal streets

Evaluation	Target	Result	
Eaverage (maintained)	15 lux	22.1	Pass
UO (Uniformity)	0.20	0.24	Pass

Fig 4.5.7 – Analysis Results

## 4.6 Courtyard Lighting

The lighting performance along the courtyard paths has been assessed with fitting Type 'X10' single bulb LED ground-recessed luminaire mounted within the pavement.

4.6.1 Courtyard Lighting

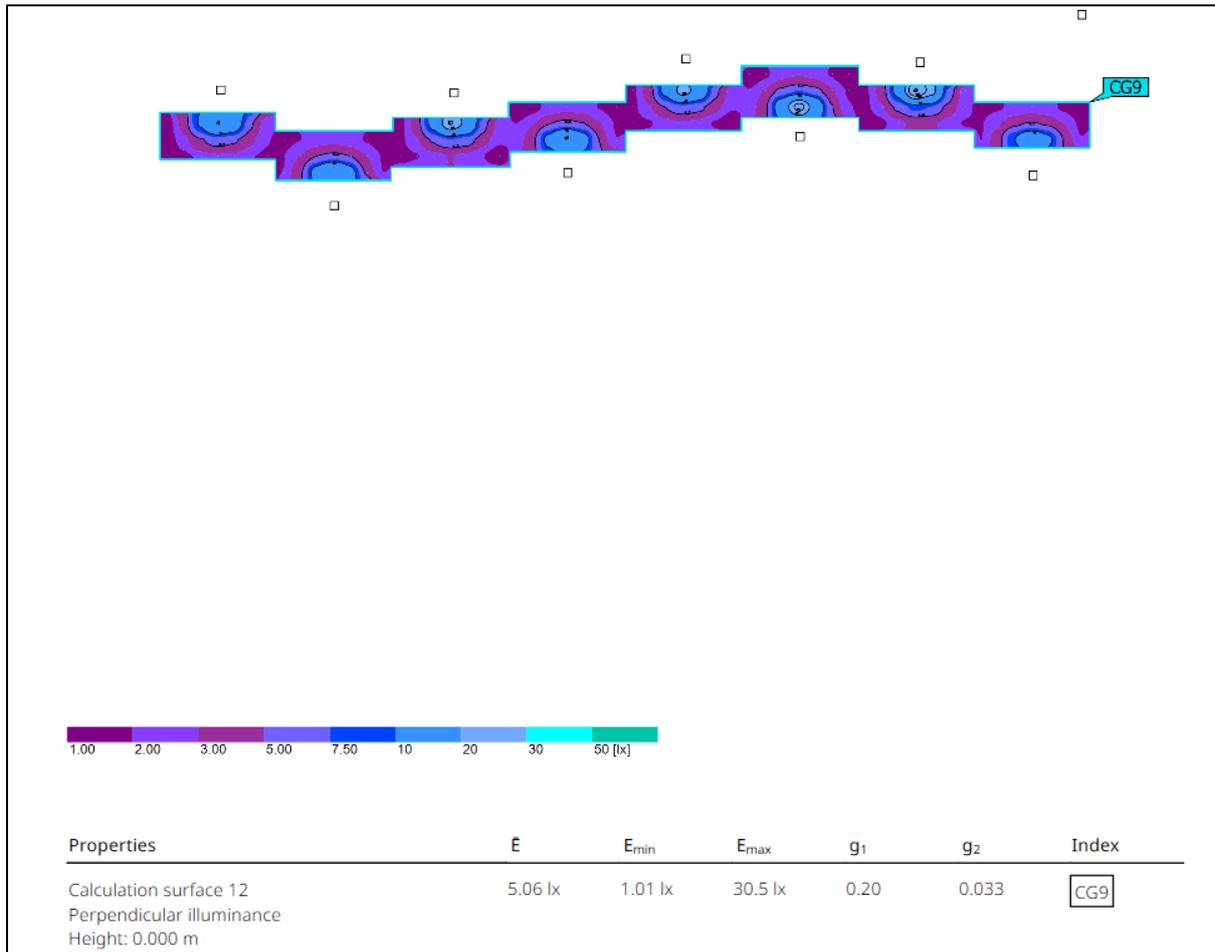


Fig 4.5.1 – Illumination Levels along Courtyard pathways

Evaluation	Target	Result	
Eaverage (maintained)	5 lux	5.06 lux	Pass
UO (Uniformity)	0.20	0.20	Pass

Fig 4.5.2 – Analysis Results

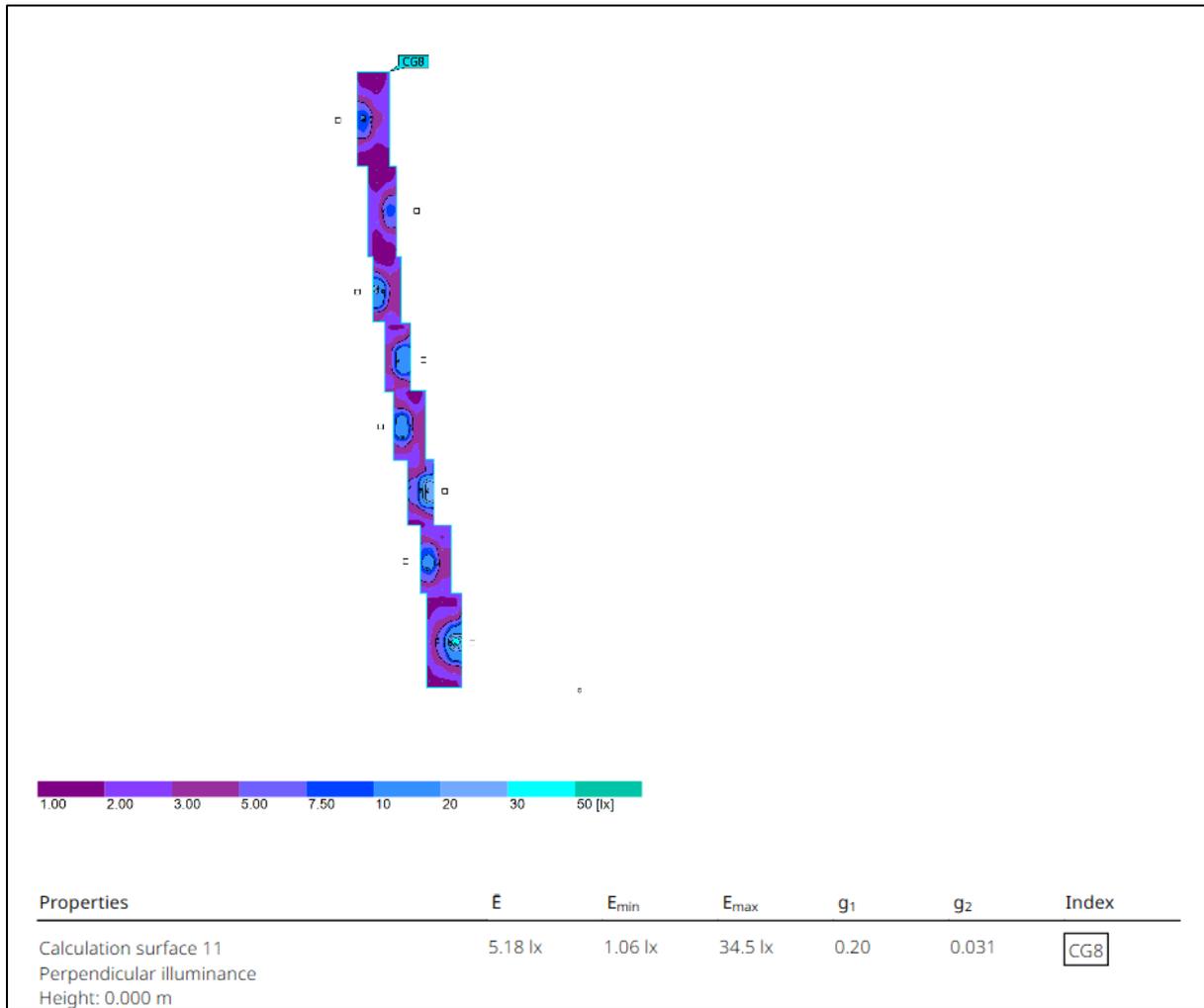


Fig 4.5.4 – Illumination Levels along Courtyard pathways

Evaluation	Target	Result	
Eaverage (maintained)	5 lux	~5.1 lux	Pass
UO (Uniformity)	0.20	0.20	Pass

Fig 4.5.5 – Analysis Results

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## 5.0 Appendix A – Lighting Drawings

D2030-IN2-SW-00-DR-E-0101 – Site Lighting Layout, Sheet 1 of 2

D2030-IN2-SW-00-DR-E-0102 – Site Lighting Layout, Sheet 2 of 2



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