

St. Hills Car Park Lighting Proposal

Doc Ref. : 2024-106-CA001-LR001 Car Park Lighting Proposal and Sustainability Statement R00

Prepared for : The Church of Scientology

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Revision	Date	Description
00	28/01/25	Provisional Calculations and Layouts
01	13/03/25	Client discussions update
02	17/03/25	Client discussions update

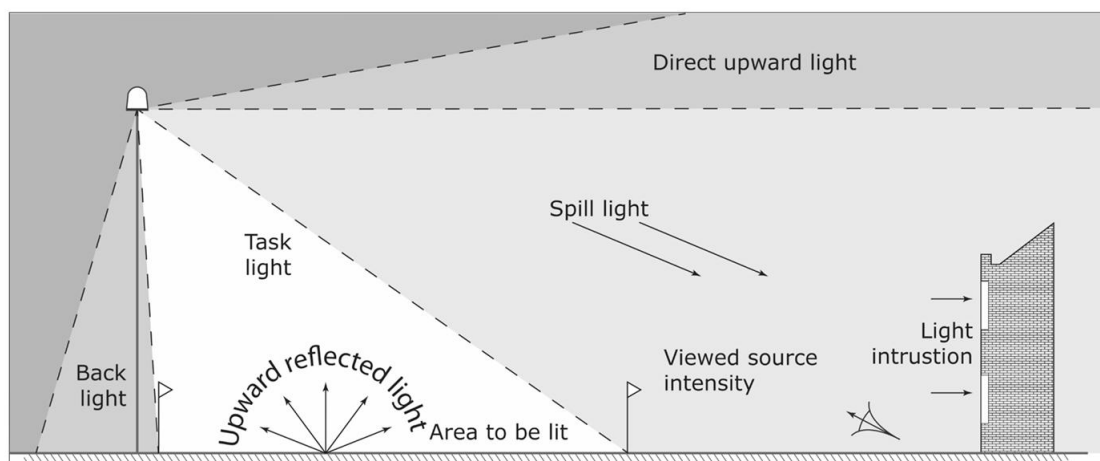
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1.0 Introduction

Therm LZC Ltd. Have been asked to provided a provisional lighting scheme for the Juhring and Hobbs Field at St. Hills. The lighting has been designed to be sympathetic with the existing site and the local area. The scheme and fittings have been selected to provide energy efficiency and lighting control which exceed the local planning requirements. This is covered in Section 2.0.

Consideration has been given to the obtrusive lighting presented by the scheme and has been reduced where possible to have minimal impact.as detailed in CIE 150: 2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations. The diagram below shows the term used and the key points of which the design needs to comply.



In order to meet the guidance the following values have been used to form the design and proposal. Under this guidance, the High Weald AONB falls within zone E1. Additionally, the guidance sets out that where an area to be lit lies close to the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone – this means that where a rural site is outside of, but adjacent or very close to the AONB boundary, zone E1 should also be used.

Zone	Sky Glow ULR [Max %]	Light Intrusion (onto premises) E _{Vertical} [Lux]		Building Luminance [cd/m ²]	Upward Flux of installation (4 or more luminaires) [Max %]		
		Pre-curfew	Post-curfew		Road	Amenity	Sports
E0	0	n/a	n/a	<0.1	n/a	n/a	n/a
E1	0	2	<0.1	<0.1	2	n/a	n/a
E2	2.5	5	1	5	5	6	2
E3	5	10	2	10	8	12	6
E4	15	25	5	25	12	25	15

1.1 Site Description

The site is located on the south-western side of Saint Hill Road and consists of 2 interconnected fields to the north and west of a group of buildings centred around The Castle and Saint Hill Manor that comprise the UK headquarters of the International Association of Scientologists.

The northern field (Juhring Field) has a direct access onto Saint Hill Road at the far north, and part of it adjoins the main access driveway. It is relatively enclosed and bounded to the south and south-west by North Wood containing 2 ponds, the western part of which is designated as ancient woodland. High Wood, outside the site to the north-west, is also ancient woodland.

The western field (Hobbs Field) is more open in character on an elevated plateau with land levels dropping gently from north-east to south-west. The eastern perimeter has an access track running alongside.

In policy terms, the site is located within the countryside and within the High Weald Area of Outstanding Natural Beauty. It is also within 7km of the Ashdown Forest. Saint Hill Manor is a Grade II listed building. Saint Hill Road is a classified road. The site is designated as a Great Crested Newt – Impact Risk Zone (Red/Amber), a Geology safeguarding Zone and Airport Safeguarding Zone. Part of the wider site (including the SE corner of Juhring Field) is at risk of surface water flooding.

Site Address: St. Hill Manor, St. Hills Road, East Grinstead RH19 4JY



The lighting scheme covers the permanent carpark with access from the site.

1.2 Carpark Design Proposal and Usage

The carpark is split into two areas. The permanent parking area and the temporary part. This is shown below:



With regards to the lighting, it is proposed that the permanent part has columns which are to remain in situ. Section 2.0 Planning and Design Considerations covers this in more detail. The red box, shows the area where special traffic considerations have been made. The fitting locations have been selected using the Land Scape Architect's layout plan¹ for locations of fittings. The column heights selected have been 6m to give the best spread of lighting over the carpark area from the column locations. The columns selected are black to match the existing and are foldable to enable ease of maintenance from ground level. An example of these is given in the appendix.

2.0 Planning and Design Considerations

As part of the planning and design considerations the lighting design has been put together to cover the requirements of both the visual/ecological impacts of implementing the scheme and the site traffic impacts for the proposed usage.

Due to the site location the visual impacts have been the primary consideration as the carpark is a private space which is used to support the events at St. Hill's or the adjacent sports clubs.

¹ Architect Plan 01-1232 Saint Hill Manor Landscape GA 250305

2.1 Luminaire Selection and Sustainability

Consideration has been given to sustainability through the selection of an energy efficiency .

2.1.1 Carpark Column Light Fitting - Thorlux Star Beam Plus

The Luminaires selected are the Thorlux Star Beam Plus.



The reason for selecting this fitting are because it is similar to the existing carpark fittings Also in addition to this the following reasons are relevant:

- Strong high pressure die-cast LM6 aluminium body with clear toughened/safety glass cover
- Area or flood distribution options
- Integral high efficiency driver
- Extremely efficient and long system life up to 100,000 hours
- Universal bracket for wall or column mounting
- Photocell option SmartScan wireless technology removes the need for control cabling.
- Zero uplight

2.1.2 Carpark EV Post and Light Fitting - Thorlux Passway EV



Innovative dual EV charging pillar with built-in high performance area lighting. Passway EV combines high performance area illumination with EV charging in a single, stylish and robust solution. By incorporating up to 2 x 22 kW fast charging into the Passway bollard, Passway EV not only provides the power to charge your electric cars quickly, but importantly, also provides the illumination to enable users to safely connect to the charger and identify trip hazards such as trailing cables.

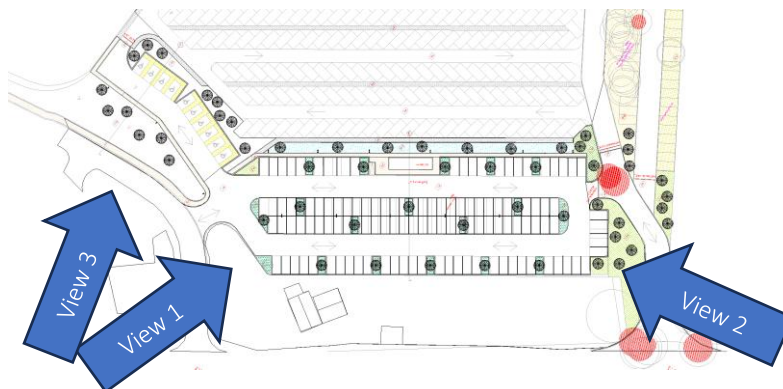
The sophisticated optics provide excellent area illumination with high uniformity, low glare and less than 2% upward light, reducing light pollution. Integral emergency and SmartScan Radar options provide unparalleled safety, comfort and convenience for an EV charger.

- Superb photometric performance for wide spacings and excellent uniformity
- On-board selector switch provides on-site adjustment between area and pathway distributions
- SmartScan Radar with sensor discretely hidden behind the cover or photocell options
- SmartScan wireless emergency option
- High power charging capability up to twin 22 kW
- Simple RFID antenna to control user access as standard
- Can be connected to the internet using the integrated Ethernet port, Wi-Fi or 4G connectivity to provide optional back-office

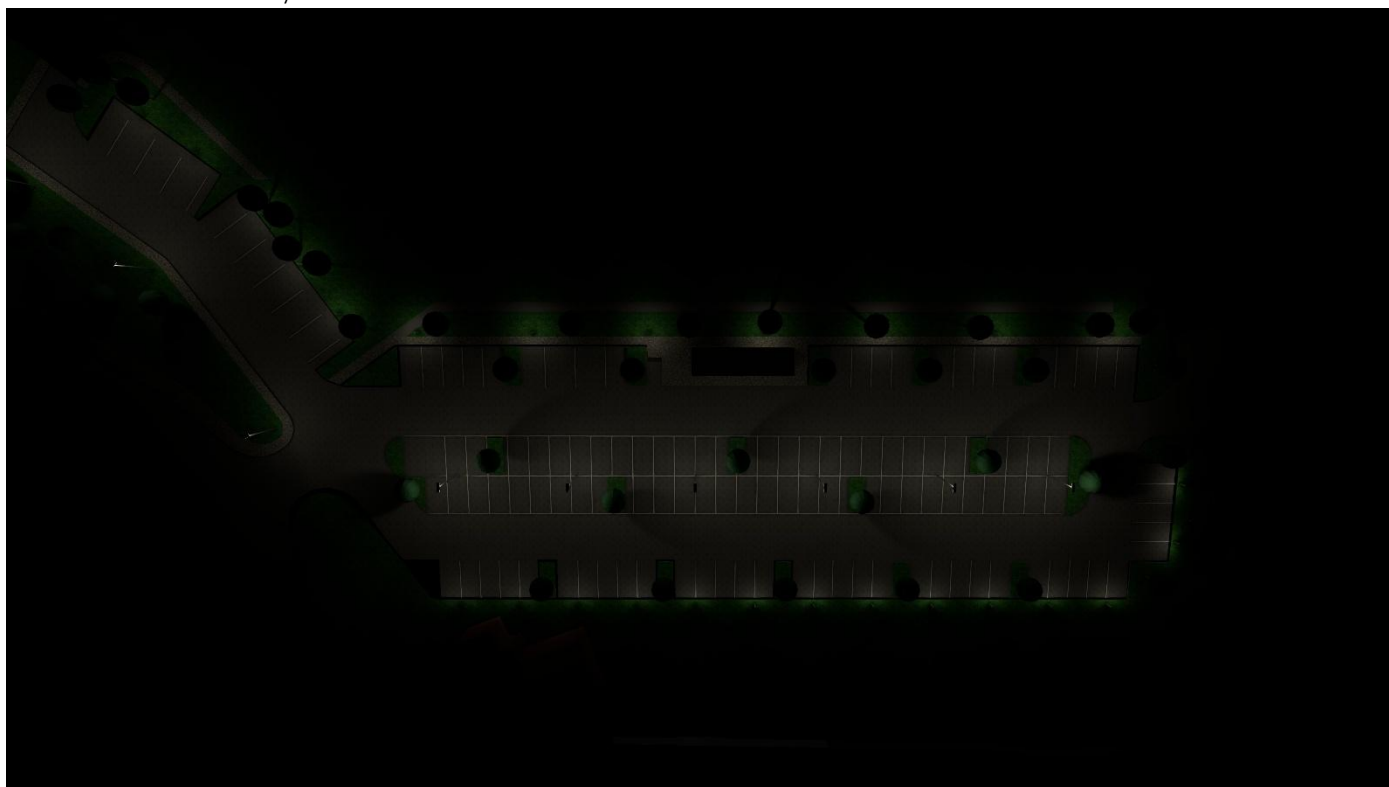
Notes: For cable lengths up to 25 m and in accordance with table 4E4A of BS7671. Ensure RCD is compliant with BS EN 61008-1 and switches all poles (including neutral).

2.2 Lighting Design Considerations

The permanent car park lighting has been considered, and the following images show the lighting arrangement.
Note :- The false colour renders are for illustration only and are not representative of the brightness which will be experienced on site. The raytraced outputs are more representative of the expected outputs and light distribution which will be experienced on site, but are subject to the final finishes and site specific conditions.

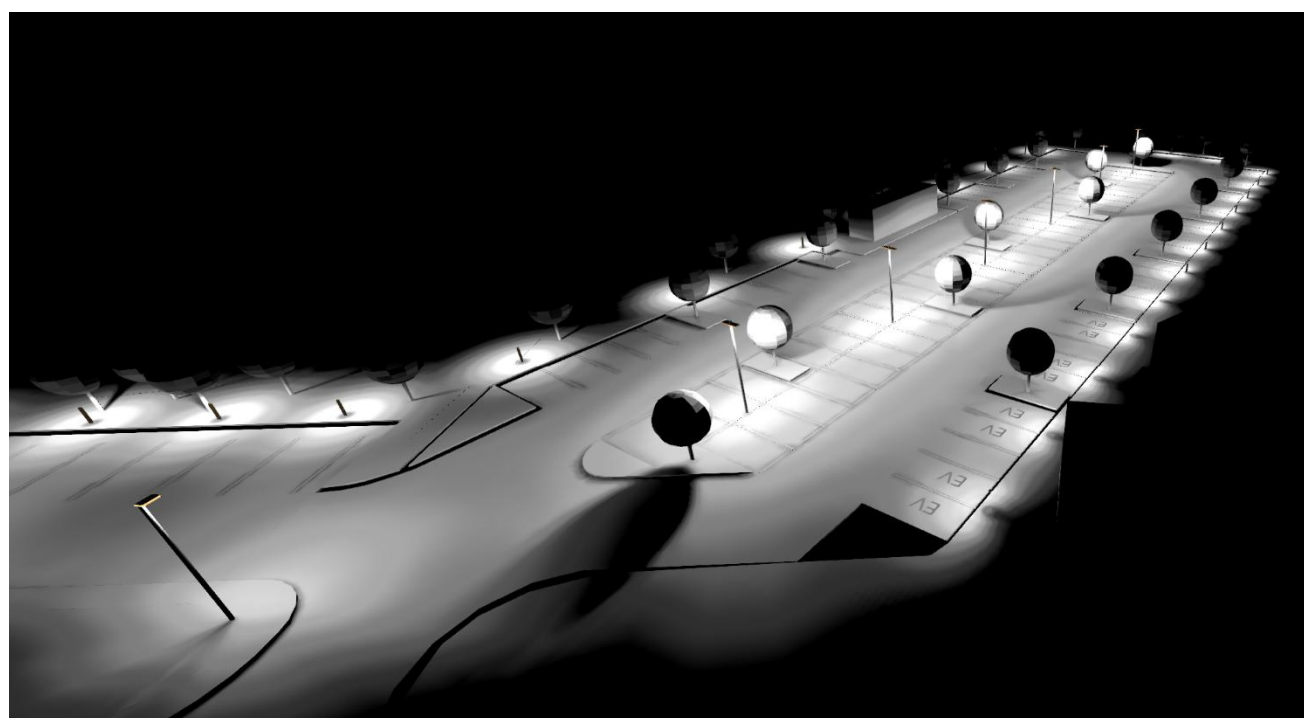
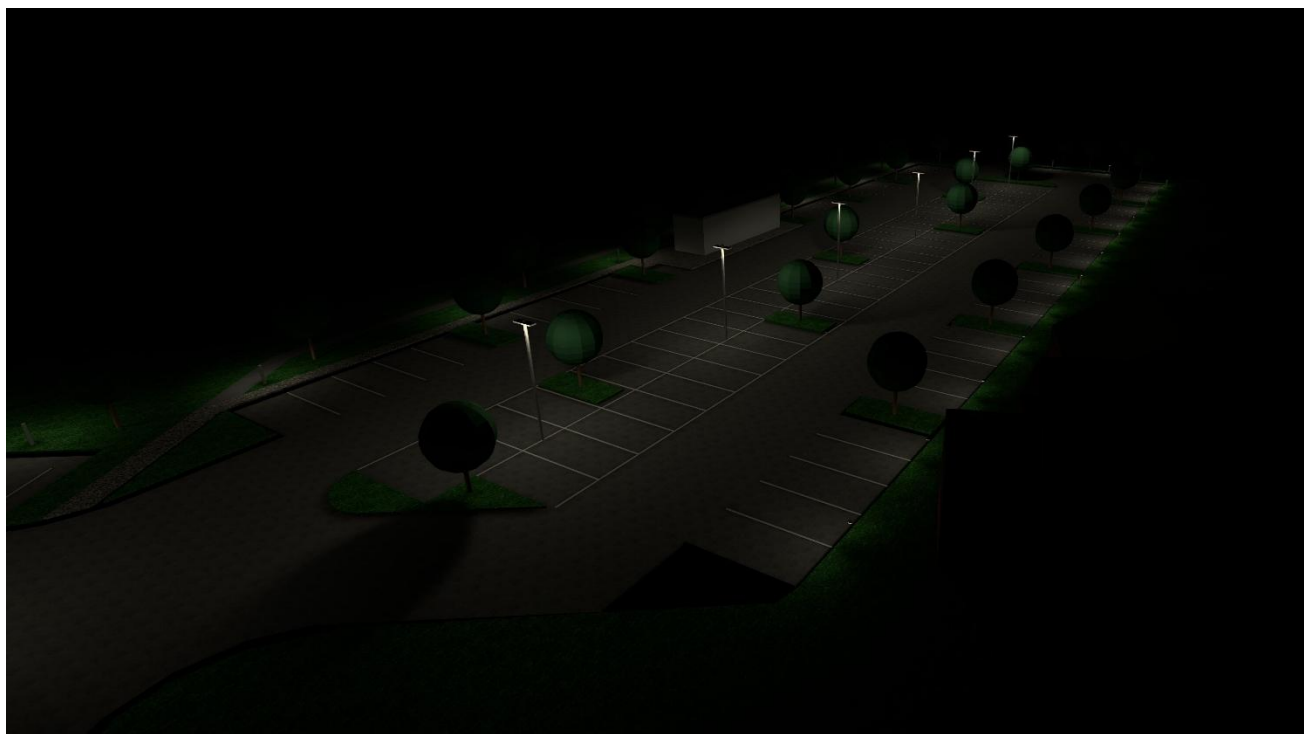


Site Overview Raytrace

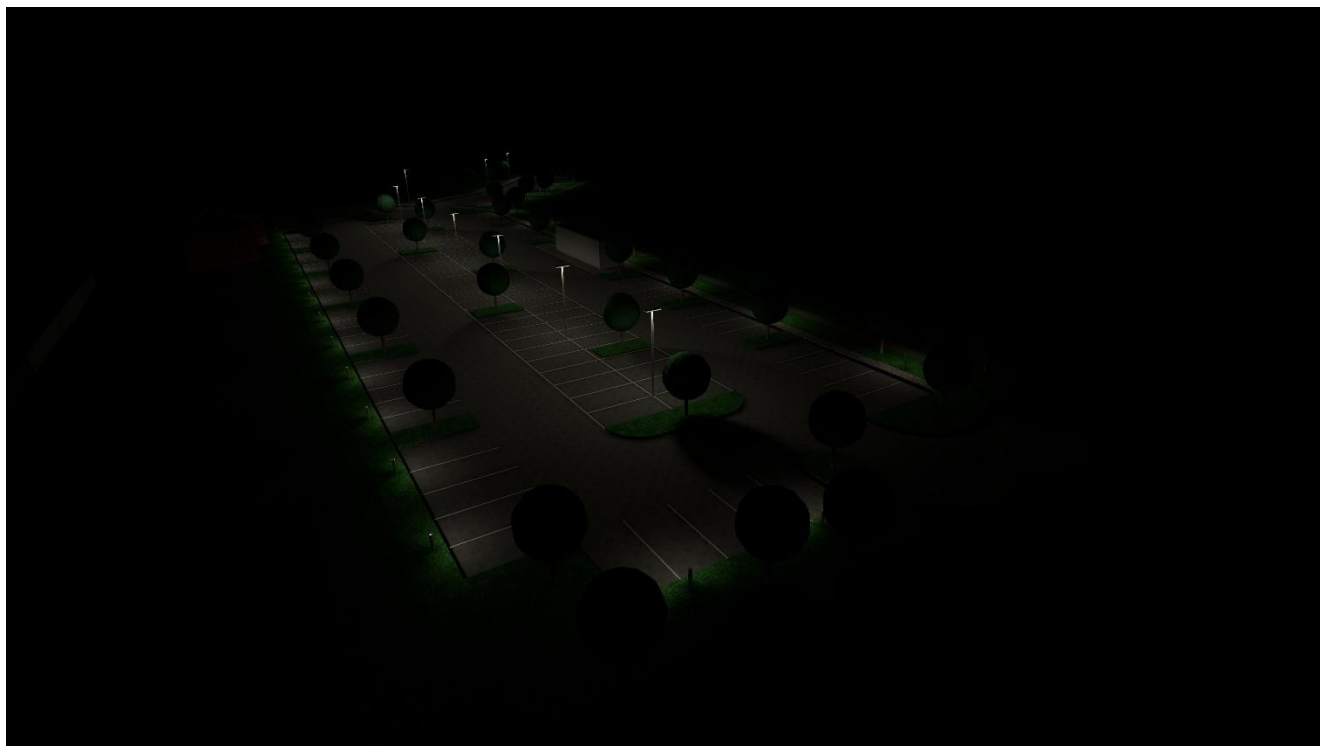


View 1 – Permanent Carpark Render

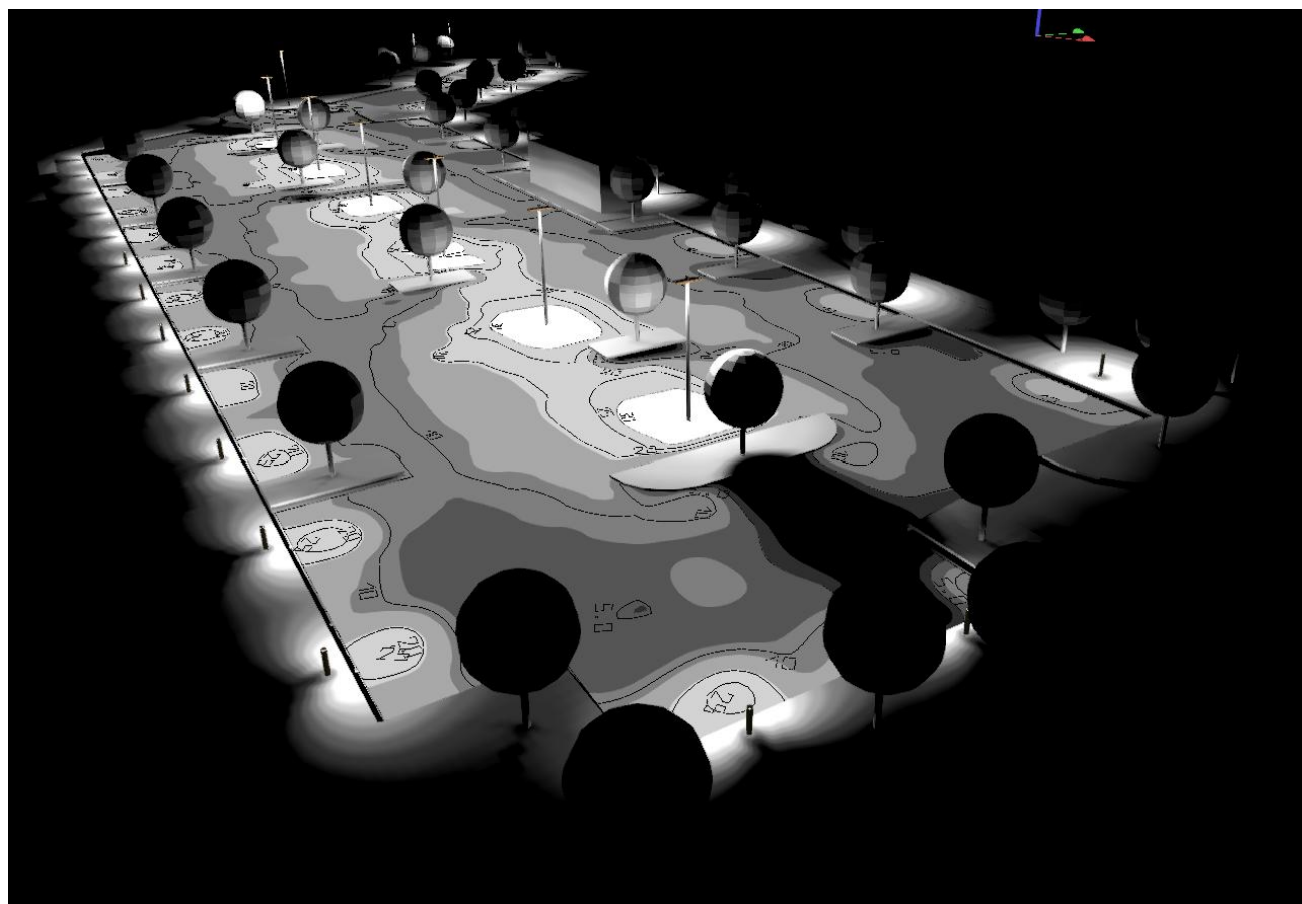
View 1 – Permanent Carpark False Colour



View 2 – Permanent Carpark Render



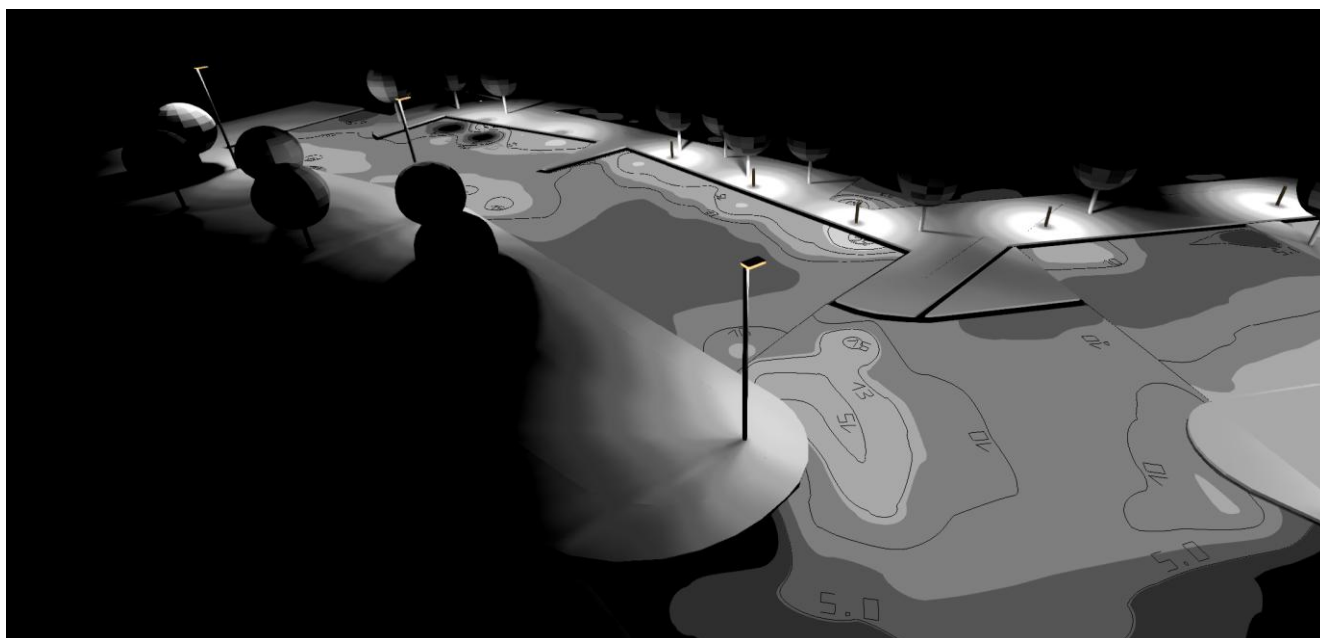
View 2 – Permanent Carpark False Colour



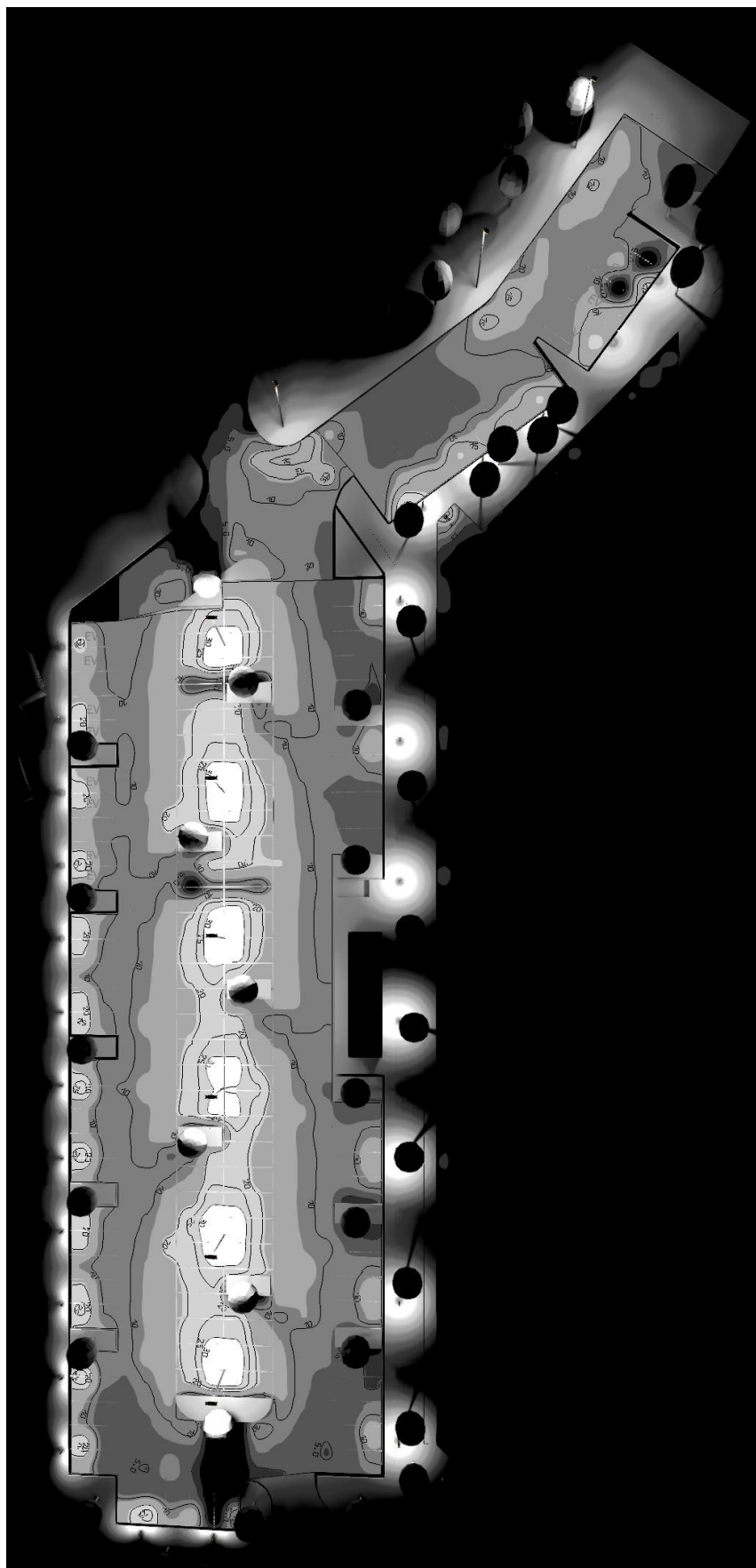
View 3- EV Bays Render



View 3- EV Bays False View

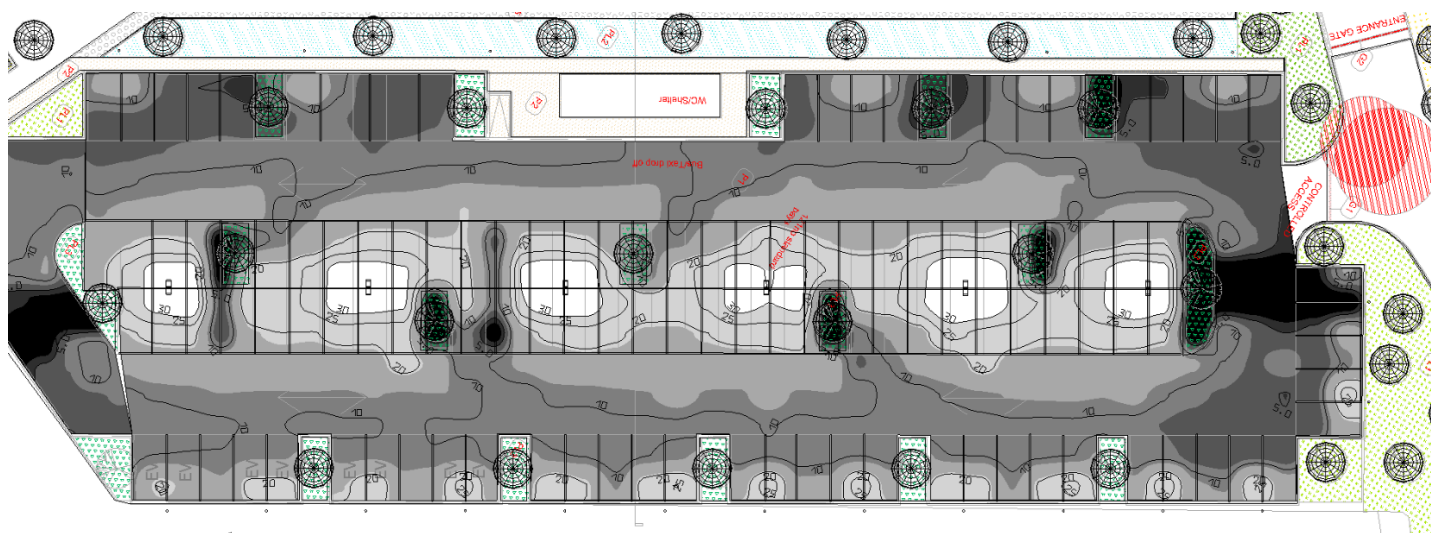


The following image shows how the light spillage will affect the neighbours and the adjacent parts of the site.

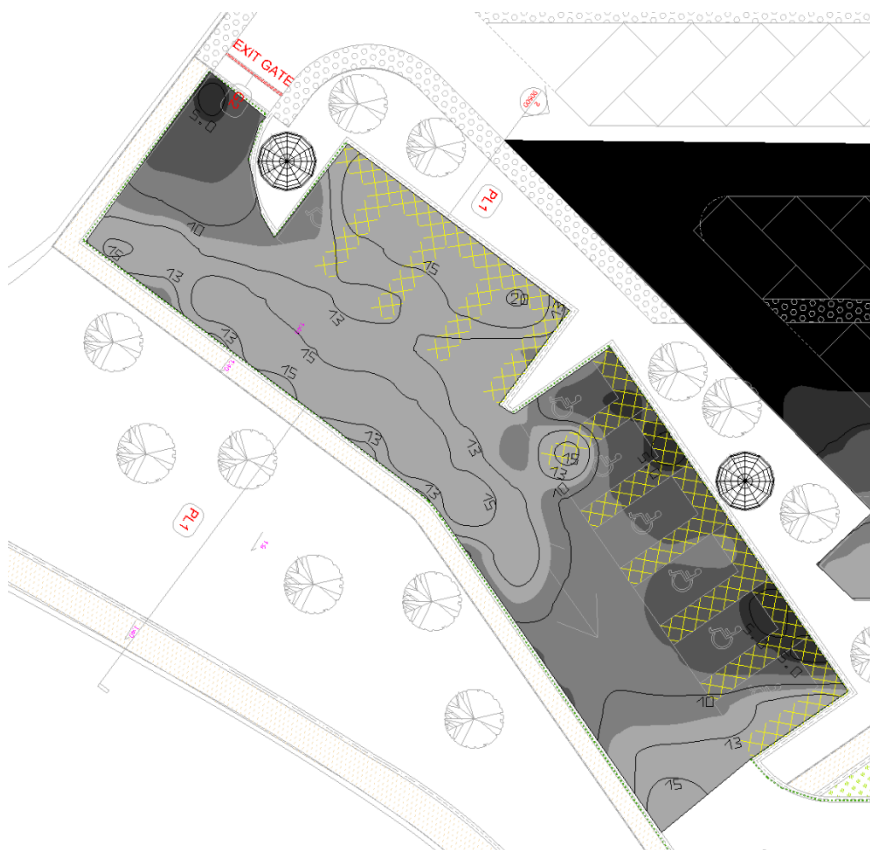


As can be seen there is very little light spillage from the carpark area so the lighting impact is minimised. Through the selection of the fittings. This is further improved by the introduction of Smart Scan controls can incorporate PIR or radar detection to switch luminaires (if required). Daylighting and time control can also be included so the fitting only come on in the hours required and when required. This control would be done by a local gateway connection which is connected via mobile data to enable remote access and control.

Permanent Carpark Area – Lux Calculation

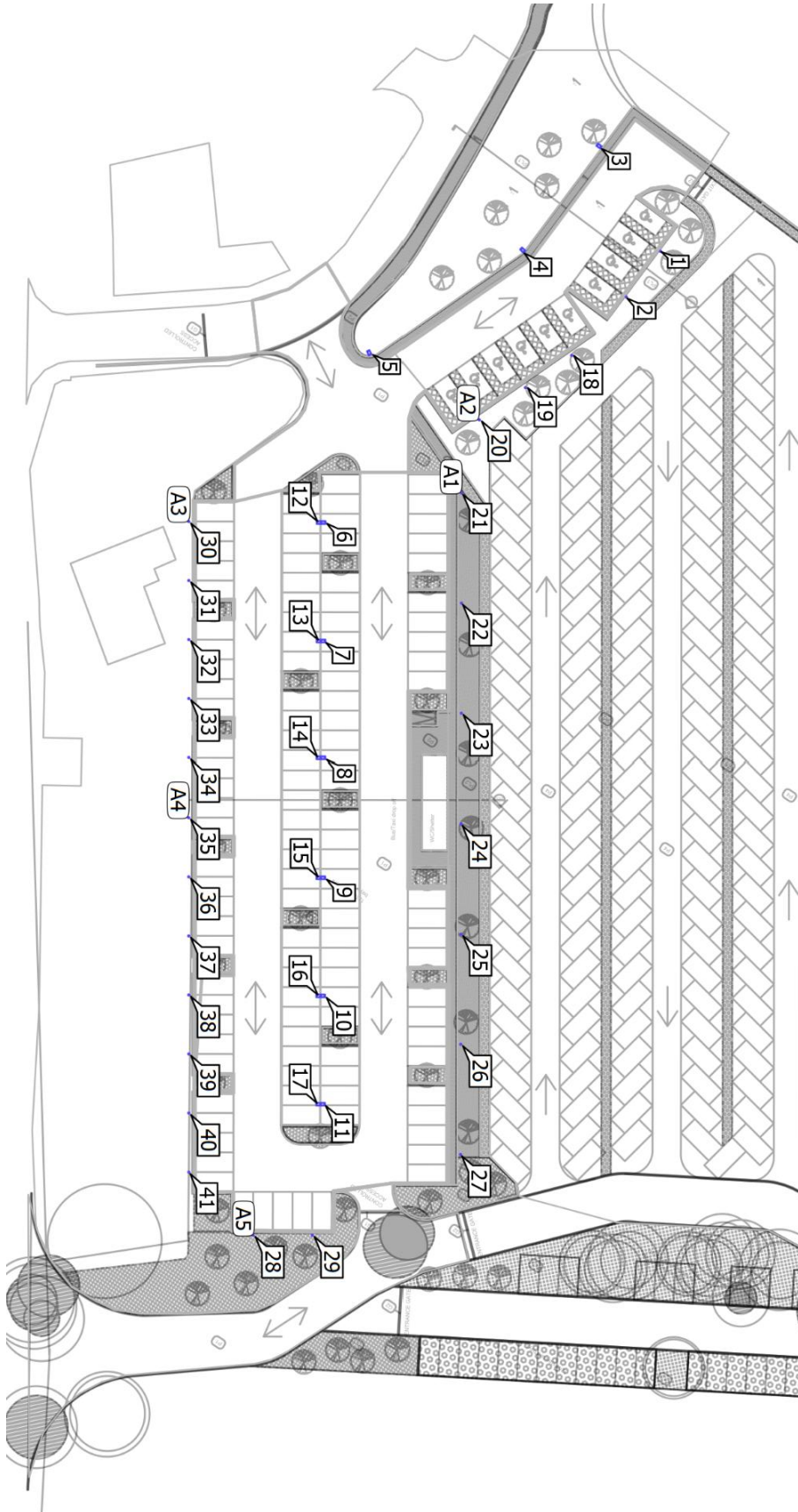


Permanent Carpark – Disabled Bays – Lux Calculation



Luminaire Layout Plan

See Appendix A for the Fitting references.



Luminaire List

Φ_{total} 81380 lm	P_{total} 1021.0 W	Luminous efficacy 79.7 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Thorlux Lighting	EPW20661 /PATH	Passway 11W - Pathway Distribution - 850mm Root Mounted - 2700K - Emergency	14.0 W	655 lm	46.8 lm/W
10	Thorlux Lighting	EPW20663 /AREA	Passway 21W - Area Distribution - 1100mm Root Mounted - 2700K - Emergency	25.0 W	1255 lm	50.2 lm/W
2	Thorlux Lighting	PW21T3/ AREA	Passway EV - 21W - Area Distribution - 1400mm - 3000K	25.0 W	1255 lm	50.2 lm/W
15	Thorlux Lighting	SM031A23	Starbeam Plus LED - Area Distribution - 31W - 3000K	35.0 W	3810 lm	108.9 lm/W
5	Thorlux Lighting	WPW21T3/ PATH	Passway EV - 11W - Pathway Distribution - 1400mm - 3000K - SmartScan Emergency	14.0 W	655 lm	46.8 lm/W

X-direction	2 pcs., Centre - centre, 7.500 m	X	Y	Mounting height	Luminaire
Arrangement	A5	125.692 m	-145.857 m	0.200 m	29

4.0 In Summary

The lux-plot provided demonstrates that the lighting should not unduly impact its surroundings.

- Luminaires chosen for the task have very high quality, precision designed optics to accurately control the distribution of illuminance to the area that requires it and minimise spill light. Luminaires have zero upward light output ratio and asymmetric distribution.
- Lighting is designed to the recommendations of the Institute of Lighting Professionals (ILP) Guidance for the Reduction of Obtrusive Light and meets recommended requirements.
- Lighting levels are chosen from Lighting Guide 6 published by the Chartered Institute of Building Service Engineers
- All external (and internal) lighting will be LED, chosen not only for its obvious energy efficiency but also for reduced spectrum of wavelengths and UV values.
- Car park column lighting can be controlled for time and movement to further reduce impact.