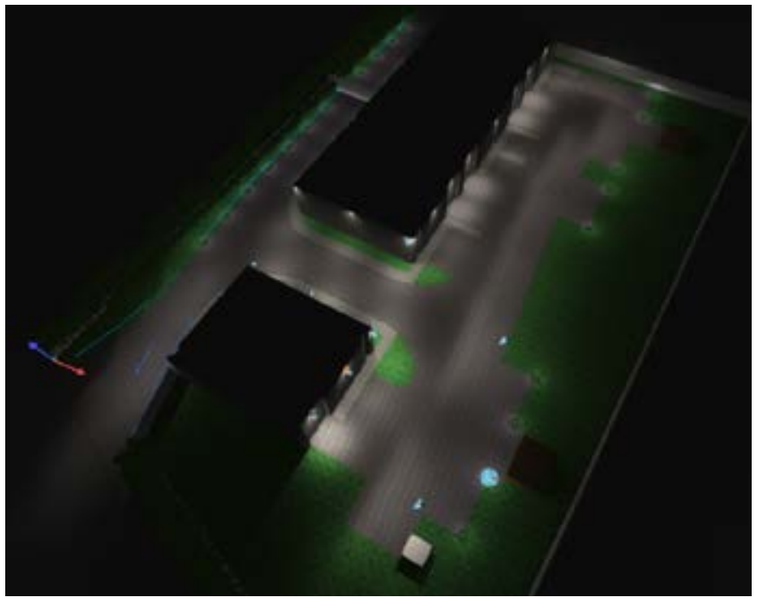

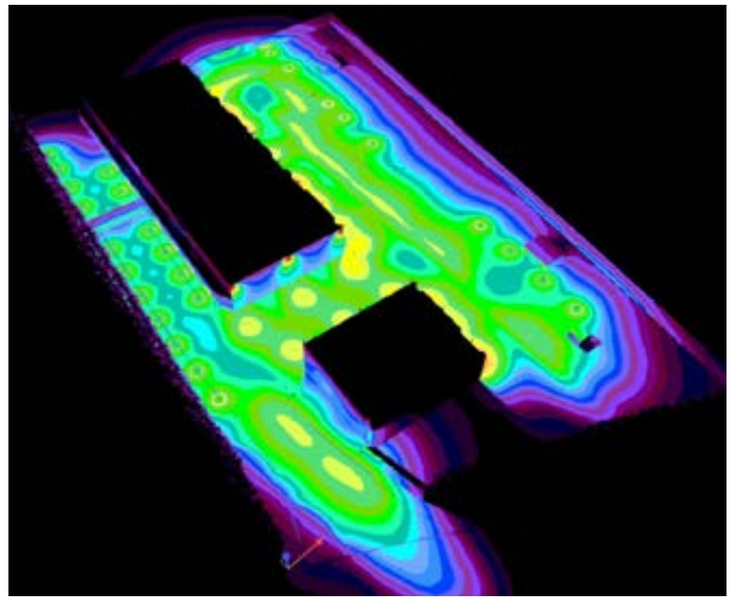

Exterior Lighting
Frogsditch Farm, Hayes

Exterior Lighting Analysis and
Proposals for Planning
29 September 2022

SKR Lighting Design

Introduction

Contents:

1. Existing Exterior Lighting Survey and Observations

2. Lighting calculations and Proposed Lighting Equipment

Note:

This document has been completed with consultation and approval of the project planning consultant:

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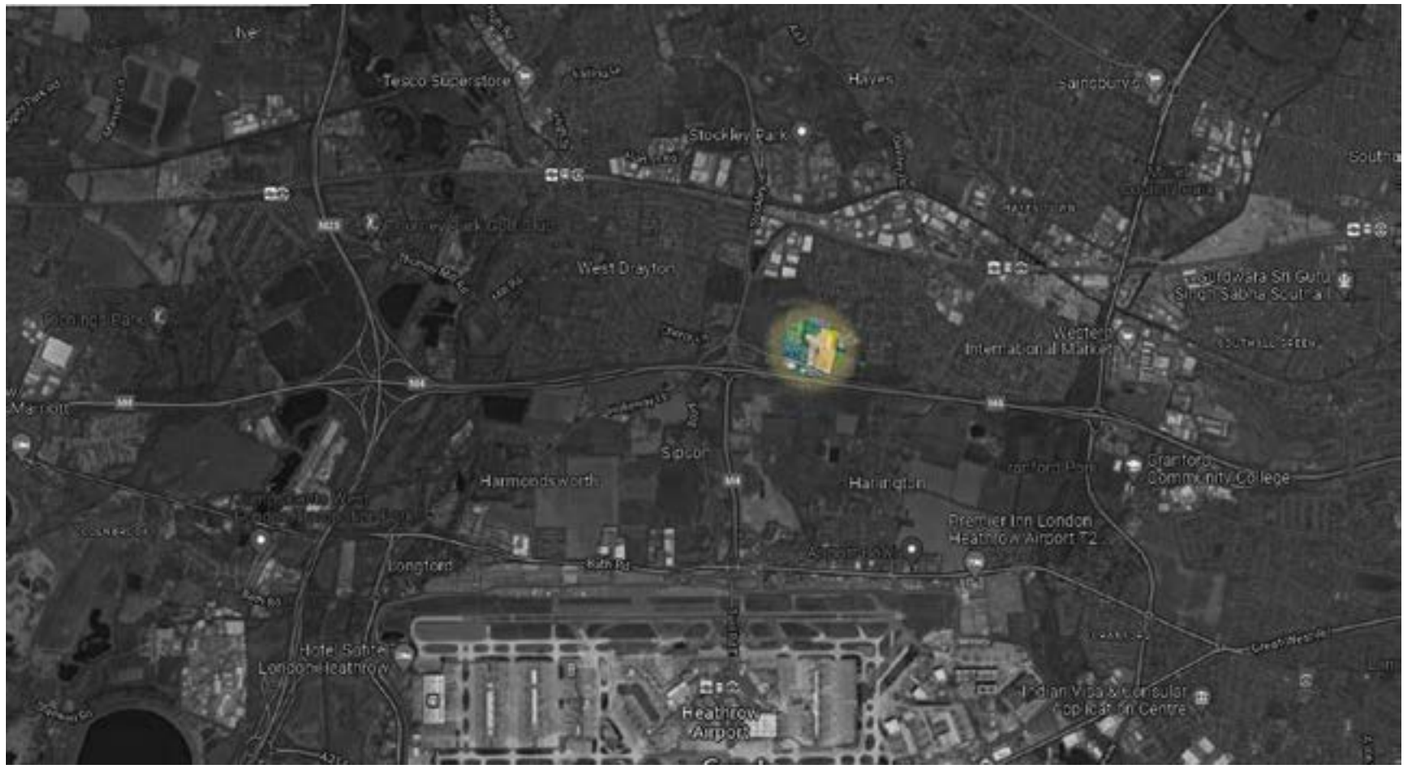
Tel 01865 953198
email: kirsten.sloth-nielsen@berrys.uk.com
www.berrys.co.uk

Existing Exterior Lighting

Location



Frogsditch Farm, Shepiston Lane, Hayes, UB3 1LL

Daylight and Dusk/night survey carried out on 15/09/2022, 5-6pm after dusk.

Weather conditions 15deg C, dry, partly cloudy.

Current use is a secure parking area for commercial vehicles.

Setting. The site sits north of Shepiston Lane and sits between the Cherry Lane Cemetary to the West and an agricultural field to the East.

Survey - Shepiston Lane and Entrance

There is standard LED highway lighting to Shepiston Lane for a 40mph speed limit. Column heights are approximately 12m in height.

(Images from Site and Google Street view)

The existing entrance is not illuminated.

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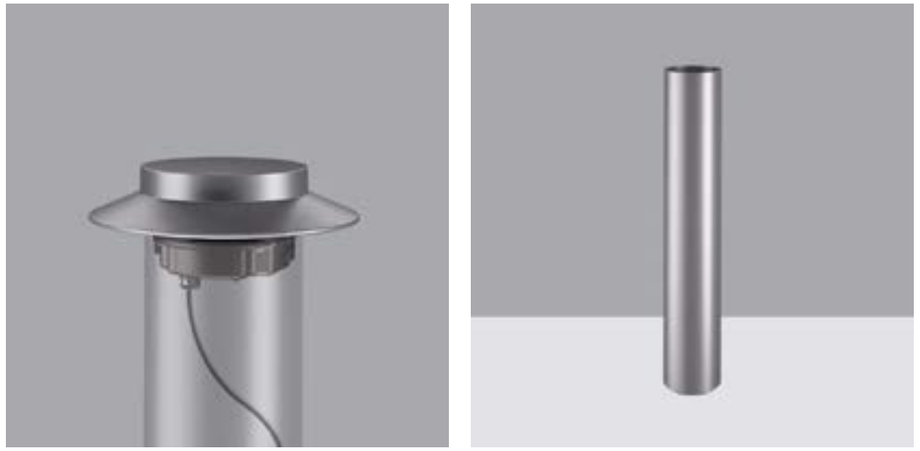
Survey - Surrounding areas and land

View from inside the cemetary towards the site.

View from inside the site into the farmland to the east.

Proposed Exterior Lighting

Proposed specification LED luminaire product information (used in calculations)



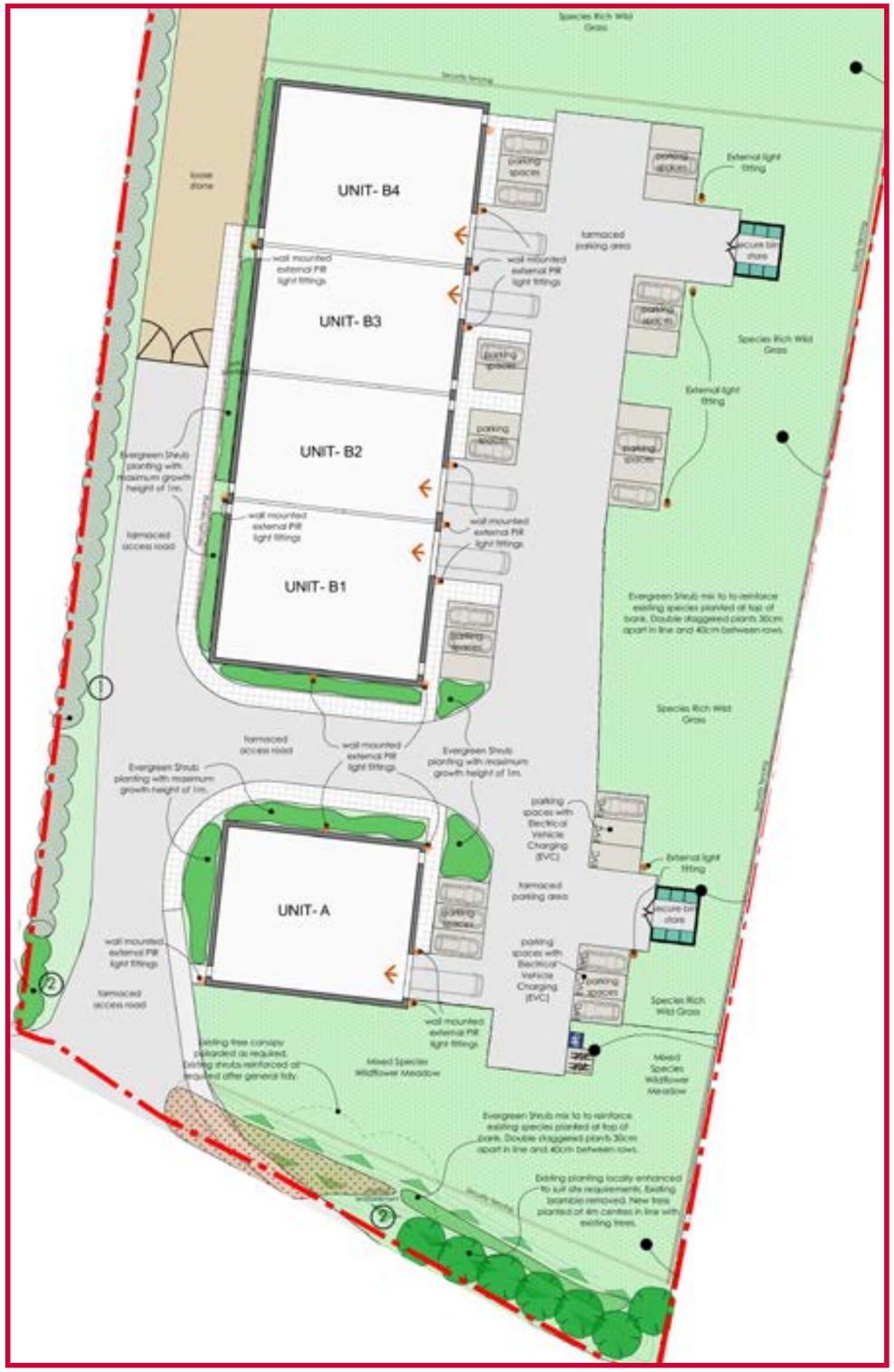
REF: L1 - IGUZZINI Low-level LED lighting bollard BW79.TG . 2700k warm white.
C/w special back light spill shield

REF: L3 - IGUZZINI Platea Pro, P883.TG.2700k warm white
6m Column mounted luminaire with road optic.

REF: L2 - IGUZZINI Platea Pro, P817.TG.2700k warm white
Wall mounted LED flood light.

REF: L4 - IGUZZINI Platea Pro, P823.TG.2700k warm white
Wall mounted LED flood light.

Proposed Lighting Scheme Strategy and Scope



The approach to the overall site is to use LED lighting with a colour temperature of 2700k very warm white. For a site like this, usually 3000-5000k could be used, but as it sits next to a cemetary and agricultural field, we are allowing for the sensitivity to night wildlife.

Zero Up-light LED luminaires will be used which helps with all round reduction of night-light pollution.

Average Light Level Guide:

Roads - 20lux
Loading Areas - 150lux Max
Parking Bays - 10lux
Bin Stores & Bike Parking - 20lux
Boundaries - 1lux

As this is a private commercial space with two reasonably sensitive areas to the east and west the emphasis is for minimal application of working light.

Areas of task necessity for employee and visitor safety and guidance are paramount, while still creating a pleasant, welcoming and attractive place to work in and visit.

All care has been taken to limit all unnecessary spill light out of the working site. This is shown in all the DIALUX diagrams the areas in Black or dark purple are under 1.0lux.

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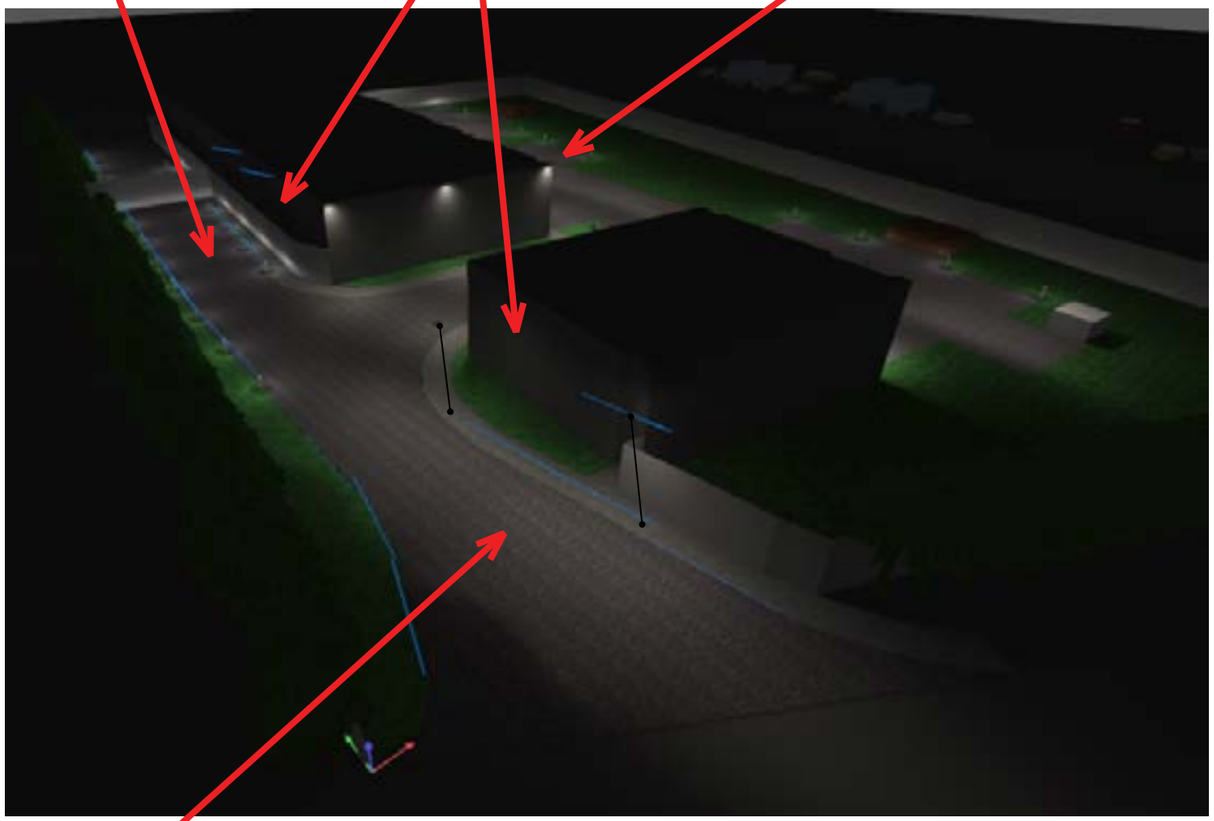
Scheme Review - Views from South

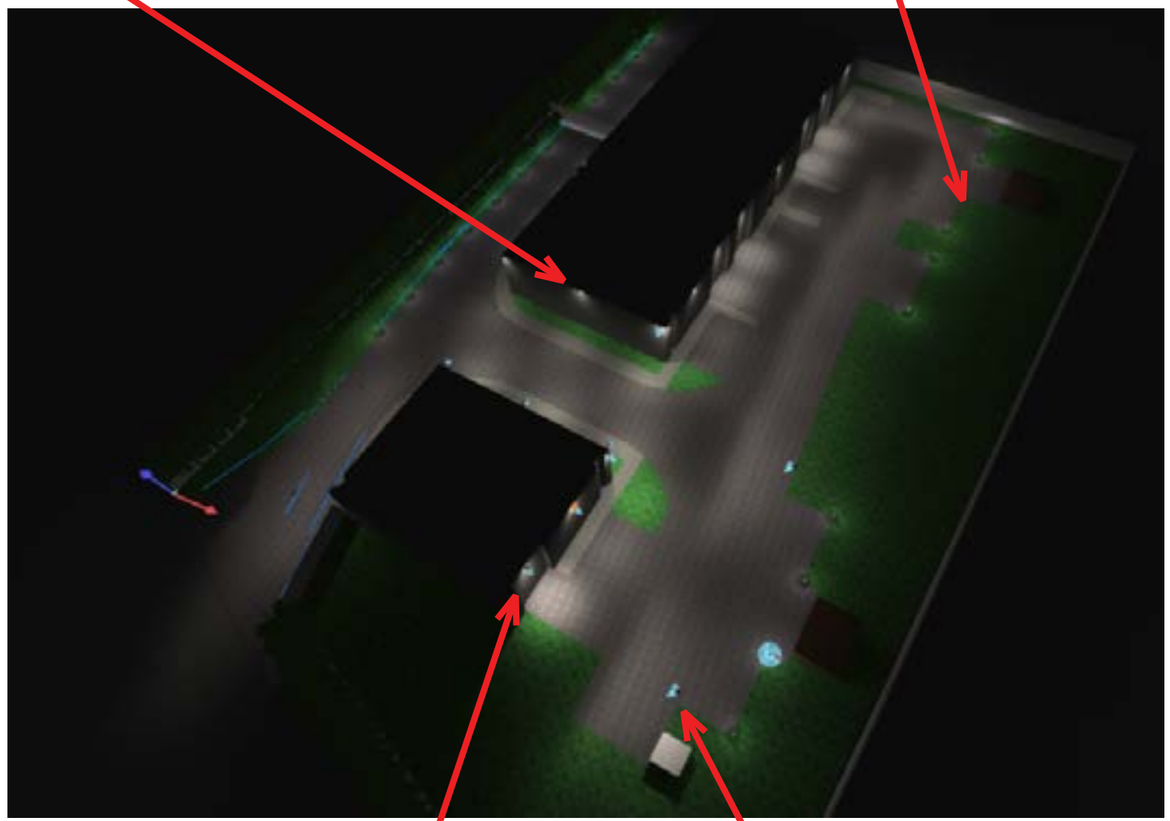
L1 - Bollards.
1.0m tall lighting bollard for side access road. All light is directed in towards working area. All rear light to be blanked out using light cut-off shields to stop light spilling into cemetary.

No illumination to West facing facades of buildings.

L2 - Wall mounted down-flood lights.
These are mounted at 6.0m height on warehouse facades to provide wide and wash-light to roads and pathways.

L1 - Bollards.
1.0m tall lighting bollard for surrounding parking bays. This helps to minimise light spill into the grass area.





L3 - 6m tall lighting colums with LED luminaires using road wide optics to illuminate entrance road.

L4 - Wall mounted down-flood lights.
These are used to illuminate the loading bay areas and are mounted at 6.0m above the main doors.

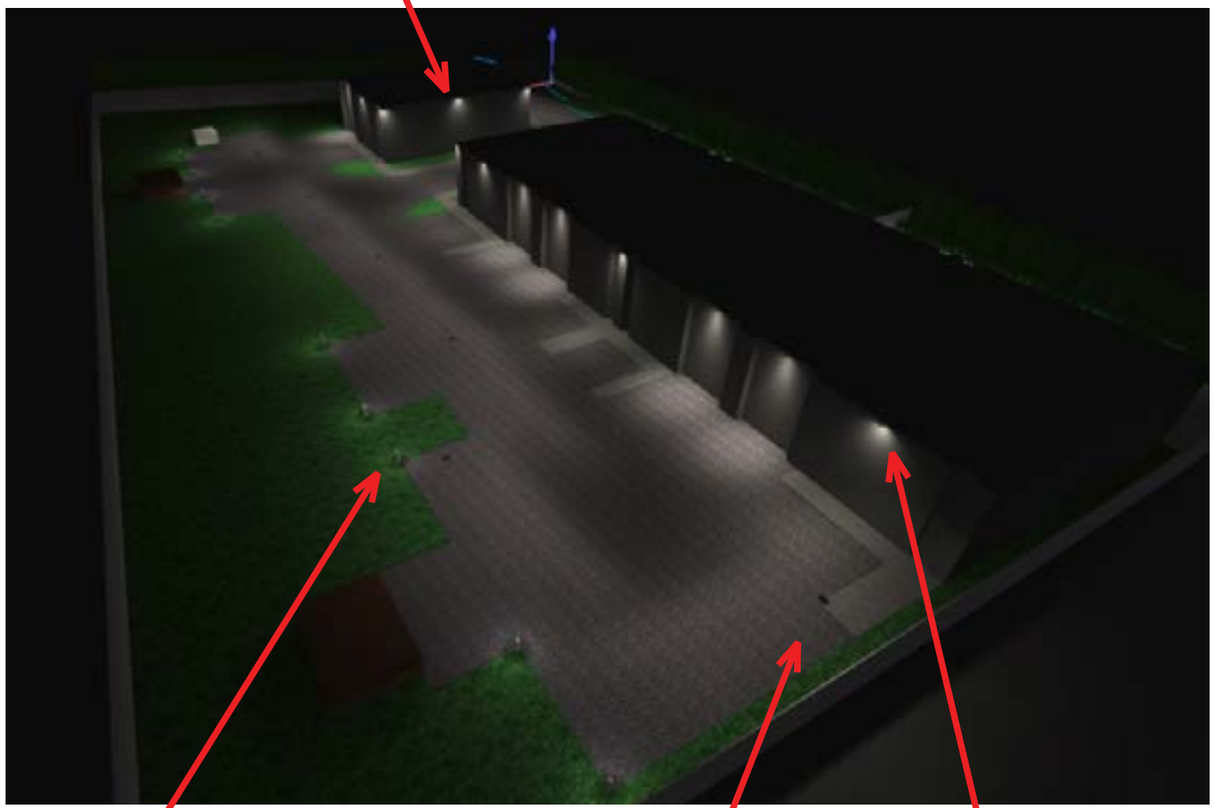
L3 - 6m tall lighting colums with LED luminaires using road wide optics to illuminate road and parking areas.

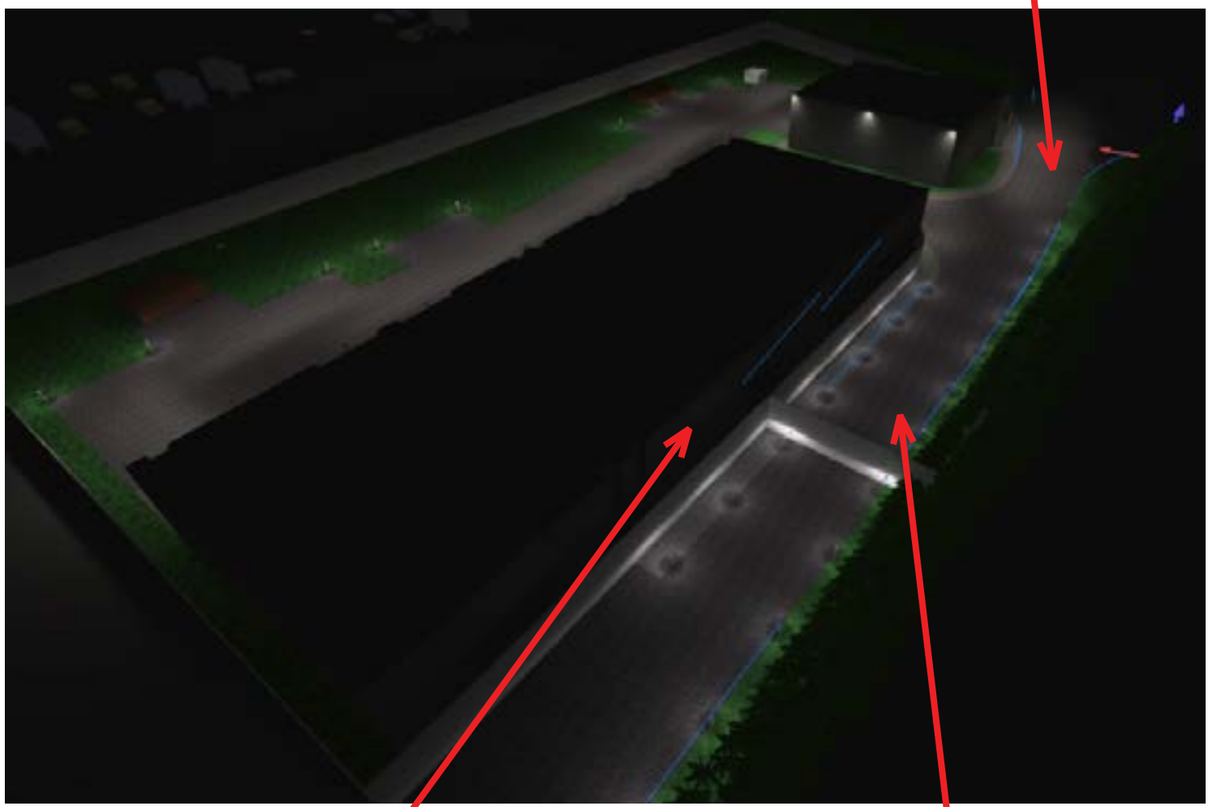
SKR Lighting Design

Scheme Review - Views from North

L2 - Wall mounted down-flood lights.
These are mounted at 6.0m height on warehouse facades to provide wide and wash-light to roads and pathways.

L3 - 6m tall lighting colums with LED luminaires using road wide optics to illuminate entrance road.





L1 - Bollards.
1.0m tall lighting bollard for surrounding parking bays. This helps to minimise light spill into the grass area.

L3 - 6m tall lighting colums with LED luminaires using road wide optics to illuminate road and parking areas.

L4 - Wall mounted down-flood lights.
These are used to illuminate the loading bay areas and are mounted at 6.0m above the main doors.

No direct illumination to West facing facades of buildings.

L1 - Bollards.
1.0m tall lighting bollard for side access road. All light is directed in towards working area. All rear light to be blanked out using light cut-off shields to stop light spilling into cemetary.

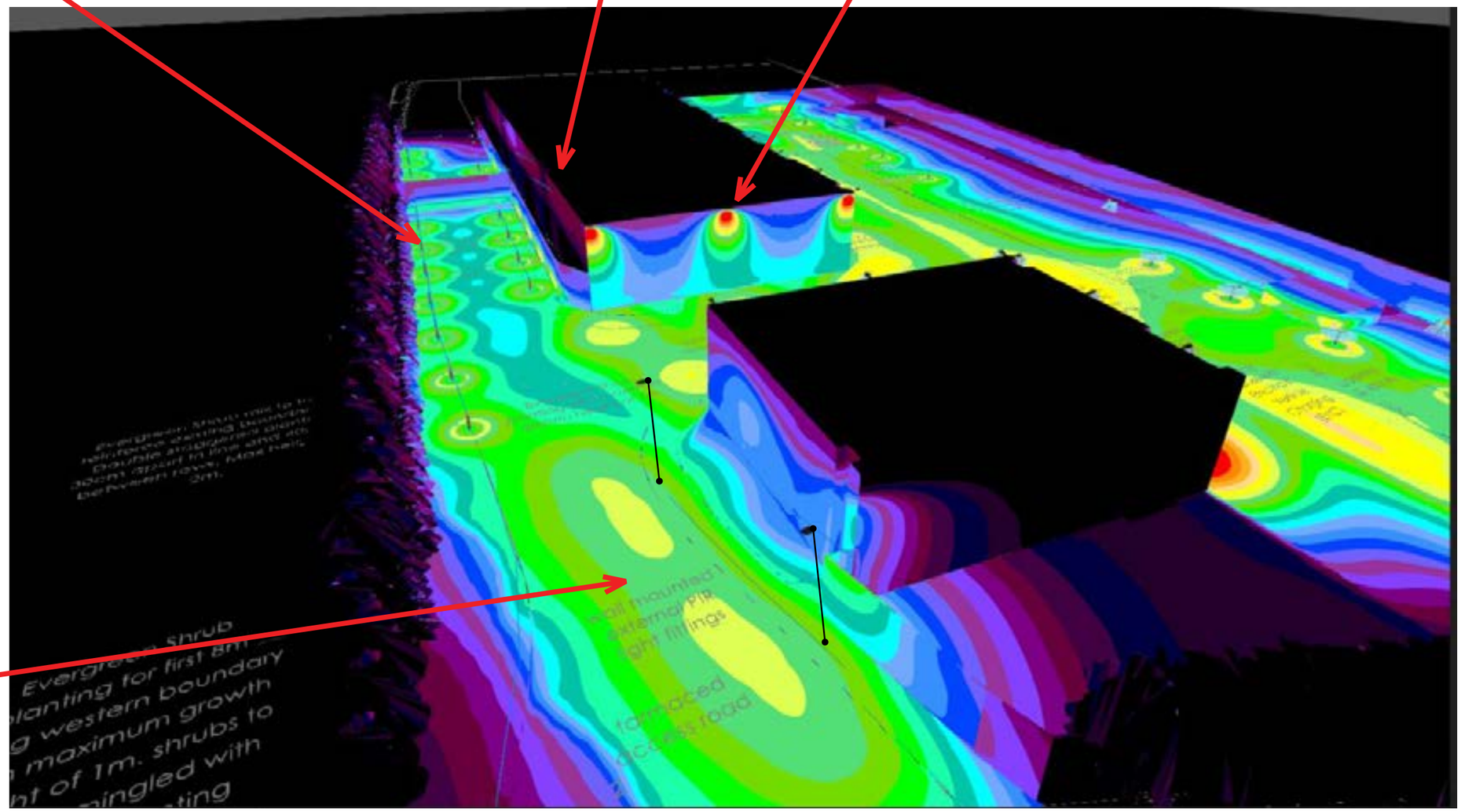
Light levels and operational overview - West

L1 Bollards.
1.0m tall lighting bollard for side access road providing 20lux average.
All light is directed in towards working area. All rear light to be blanked out using light cut-off shields to stop light spilling into cemetary.
CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.

No direct illumination to West facing facades of buildings.

L2 - Wall mounted down-flood lights.
Providing an average of 20Lux to road and pathways.
These are mounted at 6.0m height on warehouse facades to provide wide and wash-light to roads and pathways.
CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.

L3 - Lighting Columns for Entrance road.
20Lux average.
Light spill cuts off before boundary.
CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.



Dialux colour scale to denote light level ranges in LUX

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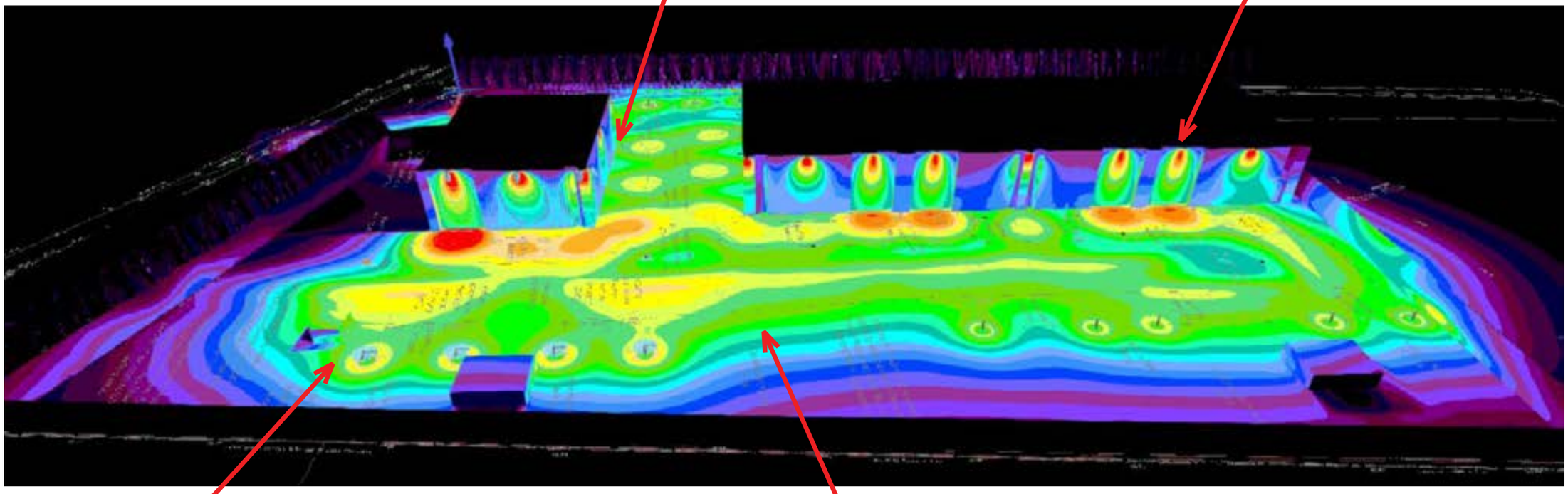
Light levels and operational overview - East

L2 - Wall mounted down-flood lights.
Providing an average of 20Lux to road and pathways.
These are mounted at 6.0m height on warehouse facades to provide wide and wash-light to roads and pathways.
CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.

L4 - Wall mounted down-flood lights.
These are used to illuminate the loading bay areas up to a level of 150lux and are mounted at 6.0m above the main doors.
CONTROL and USE:
7 Days per week, Dusk to dawn. ON 50% brightness.
100% brightness setting triggered by user as an over-ride switch on timer as required for tasks.



L1 Bollards.
1.0m tall lighting bollard for perimeter parking bays (10Lux Ave) and contributing to road illumination.
CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.

L3 - Lighting Columns for Entrance road.
20Lux average.
Light spill cuts off before boundary.
CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.

Dialux colour scale to denote light level ranges in LUX

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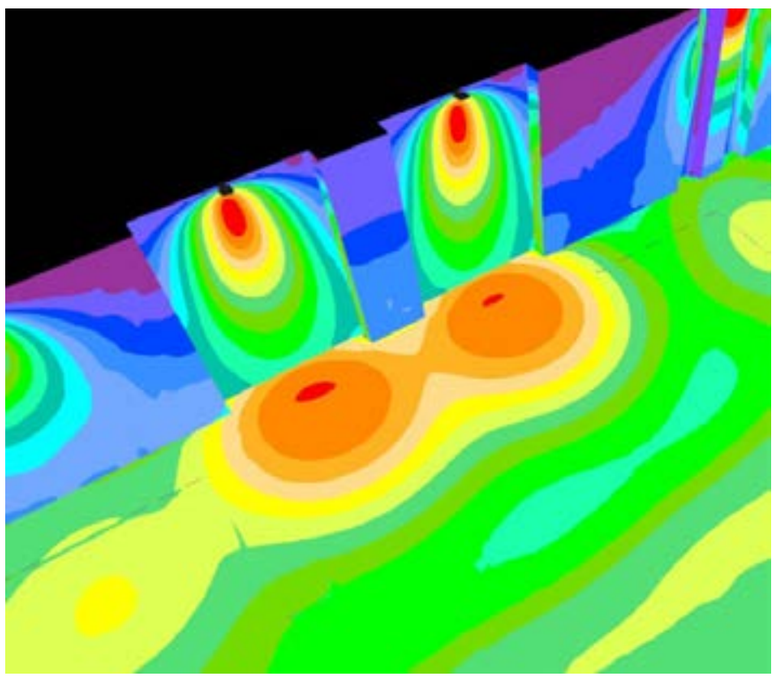
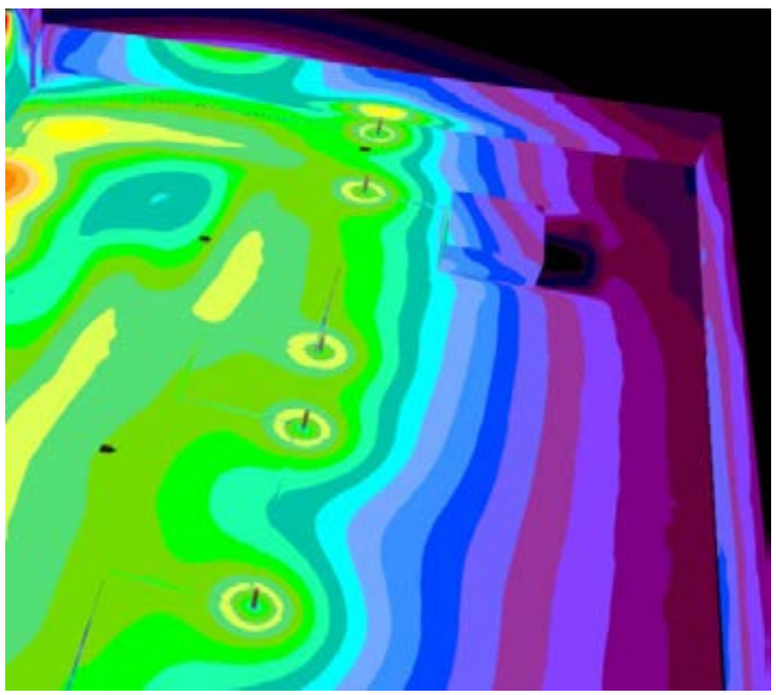
Light levels - Loading Bay, Road and Side Road Analysis



L4 - Wall mounted down-flood lights.
These are used to illuminate the loading bay areas up to a level of 150lux and are mounted at 6.0m above the main doors.

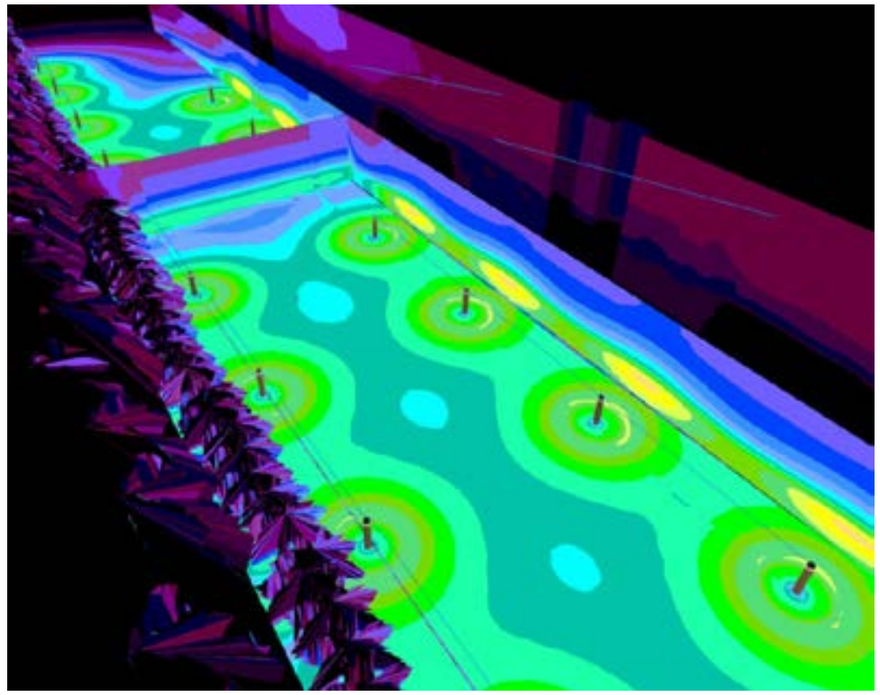
CONTROL and USE:
7 Days per week, Dusk to dawn.
ON 50% brightness.
100% brightness setting triggered by user as an over-ride switch as required for tasks to 100% by PIR if required.



L1 Bollards and L3 Lighting columns.
Both elements combine to light the road to an outline average of 20lux and the parking bays to and average of arouns 10Lux.

The layout of the scheme ensures a light drop off to 1.0Lux at the boundary to the field.

CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.



L1 Bollards.
1.0m tall lighting bollard for side access road providing 20lux average. All light is directed in towards working area. All rear light to be blanked out using light cut-off shields to stop light spilling into cemetary.

CONTROL and USE:
7 Days per week, Dusk to Midnight. ON 100% brightness.
Midnight to dawn. 25% setting and triggered to 100% by PIR if required.

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Signage Lighting Strategy

Signage

As this is a commercial area with multiple user units it is expected that signage will be needed.

It would be sensibly expected that illuminated signage would be required either side of the main entrance on Shepiston Lane.

Additional guidance signage may be required. Suggested locations are shown by the red arrows.

The images shown is an examples of how LED lighting could be applied sensitively for down-washing a sign in a location like this.

Suggested light source to be 2700k warm white to be in keeping with the rest of the site.

NOTE: The signage design is NOT part of this lighting submission.
These are guidance and advice notes only.

SKR Lighting Suggestions and Improvements for sustainability

Specification outline guidance for exterior lighting:

a) Use High-frequency / non-flicker control gear for LED where possible.

b) 2700k Warm white LED colour temperature.

c) Dimmable via a control system for energy saving.

d) Use of suitable inteligent PIR / Movement detectors linked to control system.

Guidance for future interior lighting of work / storage spaces:

Currently a scheme does not exist for the interior lighting of these commercial dwellings. However, it it proposed that the following criteria are followed by the owner to ensure and minimise lighting spill from inside the units:

a) Interior luminaires to use high-frequency / non-flicker control gear where possible.

b) 3000-4000k LED white range colour temperature light sources.

c) Dimmable (via a control system, not a manual rotary dimmer).

d) Ceiling down-lighting to be mounted above the level of the access / delivery doors to limit the spill out of the interior space.

Thank you

SKR Lighting Design

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