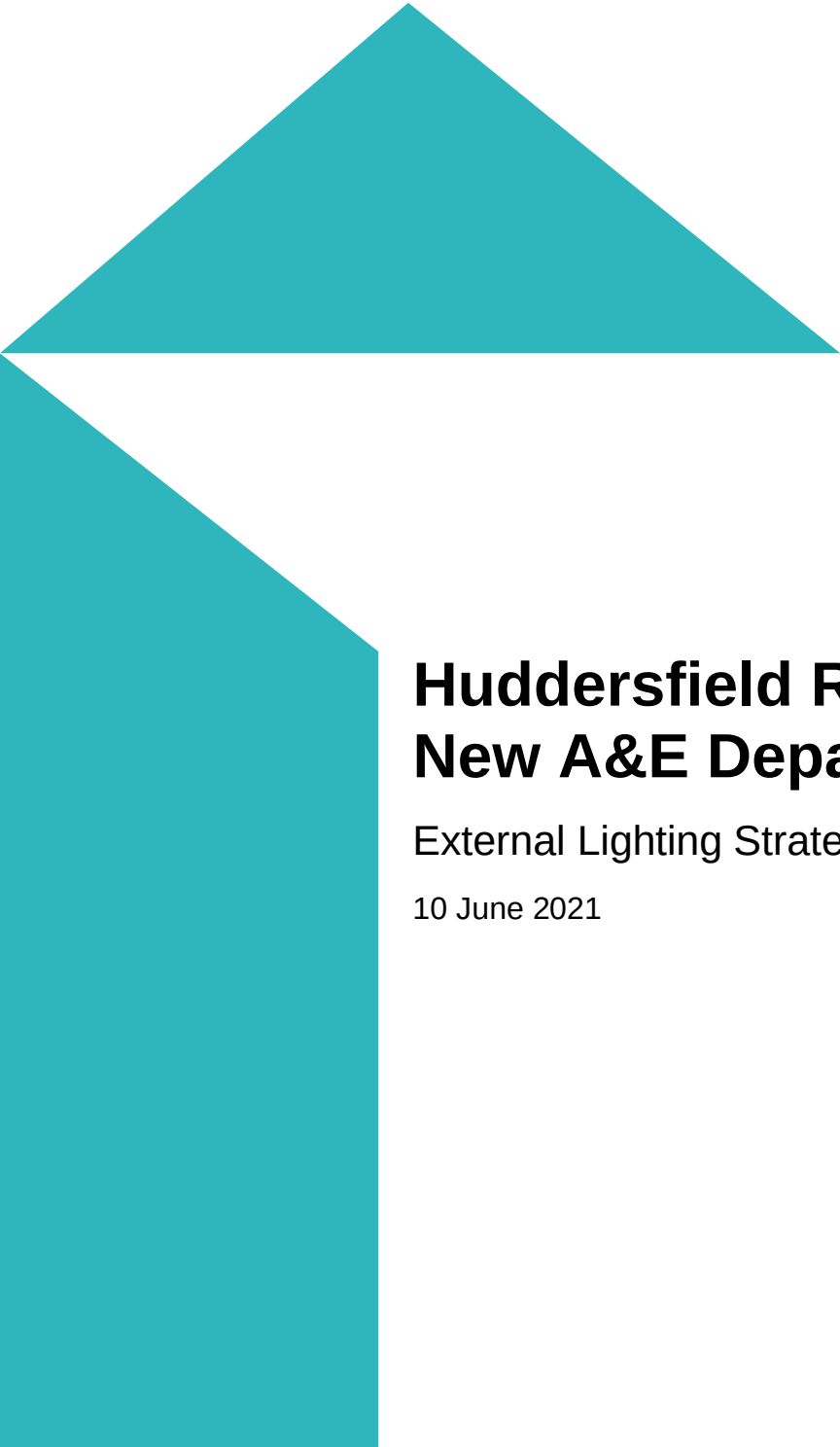




Huddersfield Royal Infirmary New A&E Department

External Lighting Strategy

10 June 2021

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10 June 2021

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Executive summary

An external lighting design is proposed to provide ample lighting to the new Accident and Emergency at Huddersfield Royal Infirmary.

Lighting proposals will meet relevant performance standards, in particular guidelines set out by the ILE for avoidance of obtrusive light and British Standards for external lighting.

The following key principles will be carried forward into the next design stages:

- Ensuring that access roads and public areas within the development are lit adequately to the correct technical guidelines, depending on the purpose, intended usage and to ensure safety;
- Aspire to meet relevant standards, where possible in a creative way to use light architecturally to emphasise the developments key spaces and views;
- Minimise crime and promote safety throughout the development;
- Create attractive and welcoming external spaces for building occupants and visitors and
- Minimise obtrusive light to existing adjacent properties, in particular the houses to the south of the A&E Department.

1 Introduction

1.1 Purpose of the Report

This External Lighting Planning Strategy has been prepared on behalf of Calderdale and Huddersfield Solutions Ltd (“the Applicant”) in support of a full planning application for the erection of a clinical building to accommodate Accident and Emergency (A&E) Department at Huddersfield Royal Infirmary, Acre Street, Huddersfield HD3 3EA (“the site”). The site totals 0.88 hectares.

This document describes the external lighting proposals for the A&E.

All lighting will be designed to meet relevant environmental design criteria and ensure the interests of safety and minimising crime.

1.2 Project Description

The proposed development includes a single storey clinical building with roof mounted plantroom.

The building will provide four ambulance bays, with dedicated ambulance entrance. There will also be a public entrance for walk in patients.

A new external carpark and access road will be provided as part of the scheme.



Photo 1.1: CGI Representation of new A&E Department (Ref: IBI Group)

2 Policy Contact and Performance Objectives

2.1 Overview

The key national, regional, and local policy documents, in addition to technical requirements, that relate to the A&E Department External Lighting design are summarised in this section and have been taken into account in the production of this External Lighting Strategy.

2.2 Performance Objectives

The external lighting design at the A&E Department will:

- Deliver high quality and efficient lighting, which creates an attractive and safe environment for building users and residents.;
- Use fittings selected with a high lighting efficacy, making use of modern luminaire and lamp technology to provide an energy efficient and flexible lighting scheme.
- Luminaires will include LEDs and will include provision for time switching and photocell control.
- Pay particular attention to any sensitive areas of the site's ecology and identify areas of darkness in order to preserve the existing landscape, minimise environmental impact and minimise cost.
- Minimise sky glow, light spill and the luminous intensity, which can be experienced from luminaires.
- Provide safe, attractive and clear key routes during the evening for occupants and visitors.

2.3 Design Standards

- The proposed lighting will be designed in accordance with current versions of relevant European and British Standards, in particular:
- ILE Institution of Lighting Engineers Guidance Note 1 for the reduction of obtrusive light (2021);
- BS 5489-1:2020: Code of Practice for the Design of Road Lighting. Lighting of Roads and Public Amenity Areas;
- BS EN 12464-2:2014: Lighting of Work Places: Outdoor Work Places (building mounted fittings, car parking, entrances and walkways);
- Lighting Guide LG2: Lighting for Healthcare Premises; and
- Lighting Guide LG6: The Outdoor Environment (2016).

2.3.1 Lighting Levels

Type of Area	Maintained illuminance, Em (lux)	Illuminance Uniformity, Uo
Walkways for pedestrians Ambulance Access Road	5	0.25
Building Perimeter (security lighting)	10	0.25
Car Parking	20	0.25
Public Pick Up/ Drop Off	50	0.25
Ambulance Drop Off	100	0.25

Table 2.1: Proposed External Lighting Minimum Design levels.

2.3.2 Obtrusive Light

To safeguard and enhance the night-time environment, it is necessary to control obtrusive light (light pollution), which can present physiological and ecological problems to surroundings and people.

Light intensity and distribution need to be carefully considered to ensure that direct upward light is minimised, and light distribution cut-offs from luminaires do not result in severe lighting contrast on light receiving surfaces such as floors and walls.

Luminaires, lamps, optics and equipment shall be specified and located to minimise any direct upward light component in order to reduce light pollution. In addition, light trespass and spill light will be minimised through design.

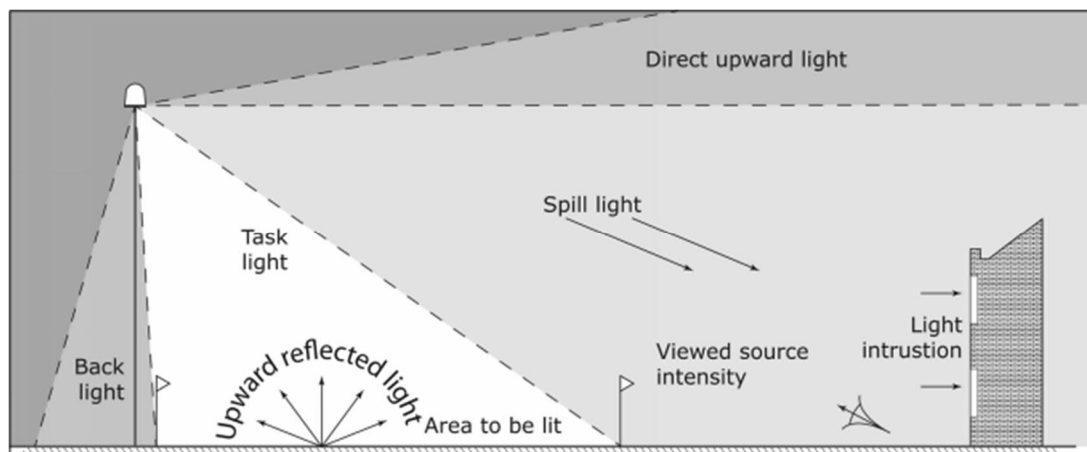


Figure 2.1: Types of Obtrusive Light (ILE Guide 2021)

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Table 2.2: Environmental Zones (ILE Guide 2021)

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Table 2.3: Maximum Values of Vertical Illuminance on premises

In accordance with ILE guidance, the A&E Department site can be categorised under Environmental Zone E3; medium district brightness areas. As such light trespass into windows should not exceed 2 Lux post-curfew.

3 Proposed Design

3.1 Overview

The luminaires have been selected to complete an external lighting plot for the New A&E Department. Refer to Mott MacDonald drawing HG0052-MMD-ED-GF-DR-E-630002 - External Lighting Illumination within Appendix A, which shows indicative luminaires descriptions and positions of luminaires and Lux levels.

The final design will be in accordance with all necessary British Standards and relevant design guidance. The actual installed fittings may vary to those shown.

4 Conclusion

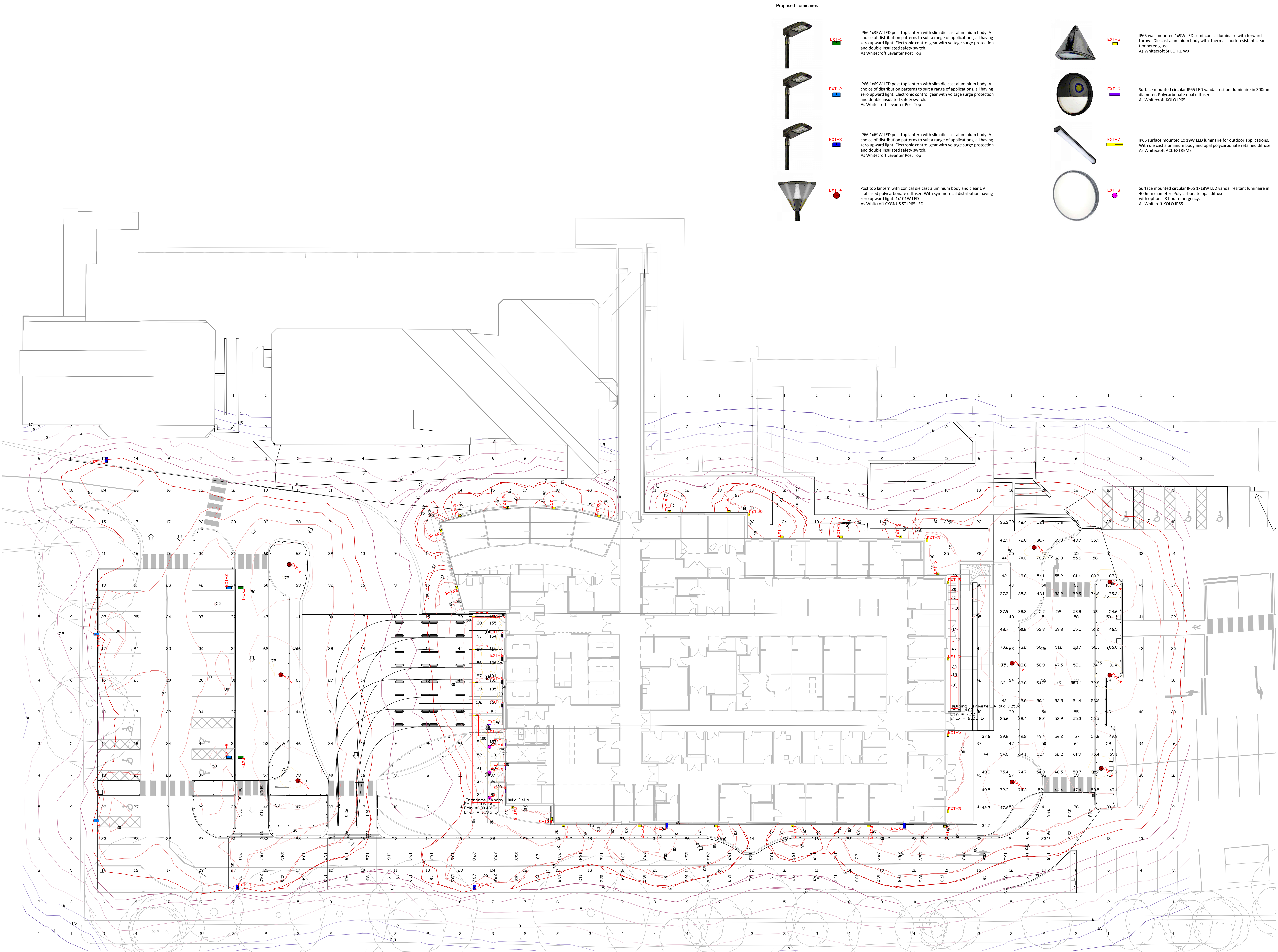
The proposed Huddersfield Royal Infirmary Accident and Emergency Department external lighting design supports local planning policy and design guidance documents.

Lighting proposals will meet relevant performance standards, in particular guidelines set out by the ILE for avoidance of obtrusive light and British Standards for external lighting.

The following key principles will be carried forward into the next design stages:

- Ensuring that access roads and public areas within the development are lit adequately to the correct technical guidelines, depending on the purpose, intended usage and to ensure safety;
- Aspire to meet relevant standards, where possible in a creative way to use light architecturally to emphasise the developments key spaces and views;
- Minimise crime and promote safety throughout the development;
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- Minimise obtrusive light to existing adjacent properties, in particular the houses to the south of the A&E Department.

A. Proposed Illumination Levels Drawing



Proposed Luminaires

- EXT-1** IP66 1x35W LED post top lantern with slim die cast aluminium body. A choice of distribution patterns to suit a range of applications, all having zero upward light. Electronic control gear with voltage surge protection and double insulated safety switch. As Whitcroft Levanter Post Top
- EXT-2** IP66 1x69W LED post top lantern with slim die cast aluminium body. A choice of distribution patterns to suit a range of applications, all having zero upward light. Electronic control gear with voltage surge protection and double insulated safety switch. As Whitcroft Levanter Post Top
- EXT-3** IP66 1x69W LED post top lantern with slim die cast aluminium body. A choice of distribution patterns to suit a range of applications, all having zero upward light. Electronic control gear with voltage surge protection and double insulated safety switch. As Whitcroft Levanter Post Top
- EXT-4** Post top lantern with conical die cast aluminium body and clear UV stabilised polycarbonate diffuser. With symmetrical distribution having zero upward light. 1x101W LED As Whitcroft CYGNUS ST IP65 LED

- EXT-5** IP65 wall mounted 1x9W LED semi-conical luminaire with forward throw. Die cast aluminium body with thermal shock resistant clear tempered glass. As Whitcroft SPECTRE WX
- EXT-6** Surface mounted circular IP65 LED vandal resistant luminaire in 300mm diameter. Polycarbonate opal diffuser As Whitcroft KOLO IP65
- EXT-7** IP65 surface mounted 1x 19W LED luminaire for outdoor applications. With die cast aluminium body and opal polycarbonate retained diffuser As Whitcroft ACL EXTREME
- EXT-8** Surface mounted circular IP65 1x18W LED vandal resistant luminaire in 400mm diameter. Polycarbonate opal diffuser with optional 3 hour emergency As Whitcroft KOLO IP65

- Notes
1. Do not scale from this drawing.
 2. This drawing has been produced using information available at the time and may be subject to change should information become available.
 3. All external areas lighting to be controlled via a time clock and photocell arrangement with local override at Main DB Location.
 4. This drawing is produced for Planning only and must not be used for Construction.

Rev	Date	Drawn	Description	Chk'd	App'd
P01	04/06/2021	AM	Issue for Planning	PD	KB

Status Stamp

M
MOTT
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Title

Huddersfield Royal Infirmary
Emergency Department
Proposed External Lighting
Illumination Levels
Sheet 01 of 01

Designed

A. Munro

AM

Eng check

P. Dodsworth

PD

Drawn

A. Munro

AM

Coordination

D. Crawford

DC

Dwg check

P. Dodsworth

PD

Approved

K. Bos

KB

MMD Project Number

102982

Scale at A0

1:150

Security

STD

Suitability Description

Suitable for Review & Comment

Suit. Code

S3

Drawing Number

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Revision

P01

