External Lighting Assessment

Webster Primary School

Client:	ISG
Project:	Webster Primary School
Date:	04th October 2017
Revision:	Rev 0
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Project Revision Sheet

Webster Primary School

External Lighting Assessment

Date of Issue: 04/10/17

Prepared by: JB

Revision	Date	Details	Author	Check 1	Check 2	Approved
0	04/10/17	External Lighting Assessment	JB			

1.0 Introduction

This report describes the requirements and BCM's proposals for the installation of external lighting at Webster Primary School. The site is being partially re-developed to include additional car park spaces and a new teaching block with classrooms and a hall.

As part of the re-development, external lighting will be provided for safety and security in accordance with the CIBSE Lighting Guides and British Standards. Lighting will be provided to the new building perimeter as outlined in the following sections.

2.0 Lighting Strategy

Primarily, adequate lighting is required for the safe passage of people and vehicles around the new building and car park.

The External Lighting installation shall be designed to: -

- Allow the roadways and pedestrian areas to be lit in periods of darkness (via photocell/timeclock controls) to provide safe passage of persons and vehicles
- Enhance security of the site by deterring unauthorised persons
- Provide illumination for the site CCTV installation
- Enhance the new external areas
- Limit local light pollution

To achieve this, lighting shall be provided to the new areas as below:-

Car Park Lighting

Lighting in the Car Park area shall be provided by column mounted fittings at a height of 6m (refer to the proposed layout attached at Appendix 1).

The luminaires shall be controlled by a timeclock and photocell arrangement to ensure that the lighting solution does not become a nuisance to the surrounding properties or wildlife.

New Building Perimeter Lighting

To comply with the ACPO Secured by Design requirements a separate system of building mounted perimeter lighting shall be included to provide security lighting for the new building.

The perimeter lighting shall be connected to the timeclock and photocell control. It shall also include a PIR override to allow the luminaires to activate on the detection of any intruders, therefore acting as a deterrent against theft or vandalism.

a) Fixing of luminaires: -

The proposed solution around the site shall comprise of building mounted lighting and column mounted lighting.

b) Light pollution: -

In line with the requirement to limit light pollution, luminaires shall be selected and positioned to minimise lighting into adjoining properties or other habitats, and from projecting excessive upward illumination.

c) Design Standards: -

The following design illumination levels will be provided as appropriate: -

- Building perimeter – 5lux Minimum (0.25 Uniformity)
- Pedestrian access/egress – 5lux Minimum (0.25 Uniformity)
- Car park – 10lux average (0.25 Uniformity)

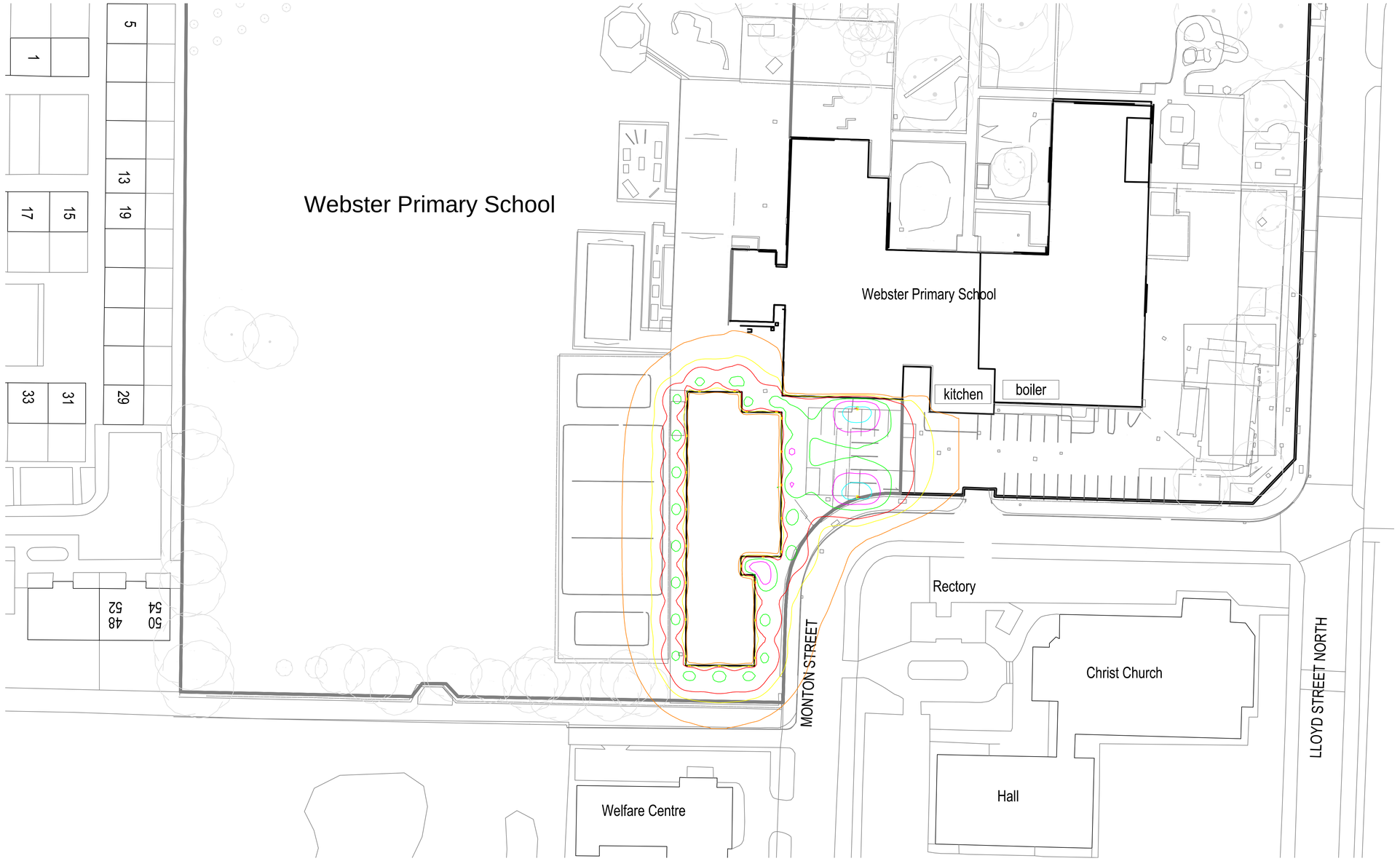
The design standards and regulations to be adopted are: -

- CIBSE Lighting Guide LG6: The Exterior Environment 2016
- SLL Guide to Limiting Obtrusive Light (2012)
- ILP Guidance Notes for the Reduction of Obtrusive Light 2011
- British Standards European Norm (12464-2:2014)
- ACPO Secured by Design (2016)

3.0 Summary

The lighting scheme proposed has been tested against the design standards and regulations referenced in this report. The design achieves the required illumination and care should be taken to ensure that the minimum uniformity factor of 0.25 is maintained throughout the scheme.

APPENDIX 1



NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY CO-ORDINATING ANY SERVICES INSTALLED WITH THE BUILDING FABRIC AND SERVICES INSTALLED BY OTHERS.
2. ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.
3. THIS TENDER DRAWING HAS BEEN PRODUCED TO RIBA STAGE 3 STANDARD AS DEFINED BY BSRIA GUIDE BG06 4th EDITION AND THEREFORE HAS A PRECISION IN DESIGN STANDARD OF +/- 15%. THE CONTRACTOR SHALL MAKE DUE ALLOWANCE IN THEIR TENDER SUBMISSION.
4. THE CONTRCTOR SHALL REFER TO THE DESIGNER RISK ASSESSMENT DOCUMENTS FOR SPECIFIC RISKS THAT SHOULD BE CONSIDERED IN REGARDS TO THE WORKS.
5. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL DRAWINGS, CONTRACT DOCUMENTATION AND SPECIFICATION FOR THE WORKS.
6. THIS DRAWING FORMS PART OF THE SPECIFICATION.
7. TO BE READ IN CONJUCTION WITH RELEVANT BIM MODEL.

LEGEND

Isolines	Lux
	1.0
	3.0
	5.0
	10.0
	15.0
	20.0

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	2	1	SINGLE	3600	0.800	Ontria I AB17L/3600-740 G1 ET
	25	2	SINGLE	949	0.800	SDEL LED 2140 05 ET

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
Staff & visitor parking	Illuminance	Lux	13	24	6.12	0.487	0.255
New building	Illuminance	Lux	10	24	1.67	0.16	0.07



TRILUX Ontria I AB17L/3600-740 G1 ET
Article No.: Ontria I AB17L/3600-740 G1
Luminous flux (Luminaire): 3598 lm
Luminous flux (Lamps): 3600 lm
Luminaire Wattage: 35.0 W
Luminaire classification according to CIE: 100
CIE flux code: 44 80 98 100 100
Fitting: 1 x 1 x LED ET (Correction Factor 1.000).



TRILUX SDEL LED 2140 05 ET
Article No.: SDEL LED 2140 05
Luminous flux (Luminaire): 951 lm
Luminous flux (Lamps): 949 lm
Luminaire Wattage: 25.0 W
Luminaire classification according to CIE: 100
CIE flux code: 44 74 92 100 100
Fitting: 1 x 1 x LED ET (Correction Factor 1.000).

Rev.	Date	Description	Eng	CAD	Check
T0	08.09.17	TENDER ISSUE	SS	JB	MS

Other	
FF&E	
Structural	
Architect	
Originator	.

Coordinated Model Information

Client: ISG CONSTRUCTION

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Job title: WEBSTER PRIMARY SCHOOL

Drawing title: EXTERNAL LIGHTING LAYOUT

Job No.	Date.	Scale.	Size.
10815	SEP 17	1:400	A1

Project Manager.	BIM Coordinator.
M.Shehzad	S.Surmazalan

Drawing No. WEB-BCM-01-00-DR-E-0003 Rev. T0