

Based on:	Rev
Architects Dwg No.	Rev
Survey Dwg No.	Rev
Other Dwg No.	Rev
Other Dwg No.	Rev

THIS DRAWING MAY INDICATE ELEMENTS RELATED TO FIRE SYSTEMS. THESE ARE INDICATIVE ONLY AND FINAL NUMBER, POSITIONING AND PERFORMANCE MUST BE ESTABLISHED AS PART OF THE CDP WORKS TO MAINTAIN THE INTENT OF THE DESIGN FIRE STRATEGY.

- NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, STRUCTURAL AND ENGINEERING SERVICES DRAWINGS, SPECIFICATIONS, SCHEDULES AND PROJECT SPECIFIC DOCUMENTS.
 - ALL PLANT AND EQUIPMENT IS TO BE INSTALLED TO MANUFACTURERS RECOMMENDATIONS, ALLOWING FULL ACCESS FOR COMMISSIONING, MAINTENANCE AND REMOVAL/REPLACEMENT.
 - ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED.
 - SET OUT ALL LUMINAIRES AS PER THE ARCHITECT'S AND LANDSCAPE ARCHITECT'S DETAILED DRAWINGS.
 - DO NOT SCALE FROM THIS DRAWING.

- SYSTEM DESCRIPTION**
- CHECK THE LIGHTING INSTALLATION CO-ORDINATION AND POSITIONS WITH THE ARCHITECT'S DESIGN DETAILS. CHECK THE CO-ORDINATION OF ANY MEP SERVICES, SUCH AS FIRE ALARM, SECURITY DEVICES ETC. CHECK THE CO-ORDINATION WITH ANY CIVILS/ENGINEERING SERVICES SUCH AS DUCTING ETC.
 - REFER TO MANUFACTURERS INSTALLATION GUIDES TO ENSURE CORRECT INSTALLATION METHOD FOR EACH TYPE OF LUMINAIRE.
 - ALL LUMINAIRES ARE TO BE LED.
 - INCLUDE ALL ANCILLARY EQUIPMENT SUCH AS DRIVERS, FLOOR BOXES, MOUNTING BRACKETS, OUTER CASINGS, CONNECTORS, INSTALLATION CLIPS ETC.
 - ALL LUMINAIRES ARE TO BE LEFT IN A CLEAN CONDITION ON COMPLETION AND CARE SHALL BE TAKEN TO ENSURE ALL GLASS COVERS, FILTERS ETC ARE DUST FREE.

- LIGHTING CONTROL**
- ALL LUMINAIRES ARE TO BE CONTROLLED VIA PHOTOCELL SENSORS WITH ON/OFF.
 - ALLOW FOR SET CURFEW TIME TO BE AGREED WITH THE COUNCIL.
 - THE CONTRACTOR SHALL CHECK PRIOR TO ORDERING THAT ALL LIGHTING CONTROL EQUIPMENT AND ALL LUMINAIRES ARE COMPATIBLE AND WILL DELIVER A COMPLETE SYSTEM.

LUX LEVEL ISOLINE PLOT

INTRODUCTION

THE LIGHTING CALCULATION HAS BEEN BASED ON THE FOLLOWING DRAWINGS ISSUED BY ADP ARCHITECTURE: 001506-ADP-00-00-DR-0900-MASTERPLAN - S2 P3

LIGHTING DESIGN NOTES

- THE EXTERNAL LIGHTING DESIGN HAS BEEN ASSESSED AGAINST ENVIRONMENTAL ZONE E3 WHICH IS DESCRIBED AS MEDIUM DISTRICT BRIGHTNESS AREAS I.E. SMALL TOWN CENTRES OR URBAN LOCATIONS. THIS INFORMATION IS INDICATED IN TABLE 2 DESIGN GUIDANCE IN THE ILP GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT GN01:2021

THE LIGHTING INSTALLATION SHALL BE CAREFULLY CONSIDERED TO ENSURE PROVISION OF APPROPRIATE PHYSICAL AND SPECTRAL PROPERTIES AS FOLLOWS:

- WARM COLOUR TEMPERATURE <3000K
- MINIMIZE THE SPREAD OF LIGHT ABOVE THE HORIZONTAL.
- USE NARROW SPECTRUM LIGHT SOURCES
- LUMINAIRES ON THE SITE TO FACE INWARDS TO THE SITE TO REDUCE SPILL ONTO THE SURROUNDING AREA.
- BOLLARD HEIGHTS TO BE KEPT BELOW 0.8M.
- UTILISE LED LIGHTING ONLY TO CONTROL THE LIGHT AND MINIMISE UNWANTED LIGHT SPILL.
- PIR SENSORS ON LIGHTING OTHER THAN STREET LIGHTING SHOULD REDUCE/TURN OFF AFTER A CURFEW TO BE AGREED. THEREFORE ONLY PROVIDING LIGHT WHEN REQUIRED. ULTIMATELY REDUCING LIGHT POLLUTION AND VISUAL IMPACT.

LIGHTING CONTROLS

ALL EXTERNAL STREET LIGHTING WILL BE CONTROLLED VIA PHOTOCELL/TIMECLOCK. NOTE: THE ILP THE INSTITUTION OF LIGHTING ENGINEERS GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT GN01:2021 SUGGESTED CURFEW TIME IS 2300hrs FOR EXTERNAL LIGHTING.

LIGHTING STANDARDS

THE EXTERNAL LIGHTING DESIGN HAS BEEN DESIGNED IN LINE WITH THE FOLLOWING DESIGN STANDARDS:

- ILP THE INSTITUTION OF LIGHTING ENGINEERS GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT GN01:2021
- BS EN 12464-2 LIGHTING OF WORKPLACES - OUTDOOR WORKPLACES PART 2
- ILP GUIDANCE NOTE GN08:2018: BATS AND ARTIFICIAL LIGHTING IN THE UK
- INSTITUTE OF LIGHTING PROFESSIONALS (ILP) FORMALLY THE IES), LIGHTING AGAINST CRIME, A GUIDE FOR CRIME REDUCTION PROFESSIONALS (JANUARY 2011)

DESIGN PARAMETERS

- THE SITE HAS BEEN LIT WITH BS EN 12464-2 IN MIND.

LEGEND

- A - FLOOD LIGHTS WITH COWL ACCESSORY. 25,000LMS. MOUNTED ONTO 7M POLE
- B - LIGHTING COLUMNS - VCYP-FW70-4.3-15D. 1926 LM MOUNTED ONTO 5M POLE
- C - LIGHTING COLUMNS - VCYP-AY70-4.3-15D. 1983 LM MOUNTED ONTO 4M POLE
- D - BOLLARDS - 160LM. 0.8M HIGH, 180 DEGREE LIGHT GUIDANCE RING
- G - HERITAGE STYLE COLUMN - DW WINDSOR. WINDSOR AVENUE. 4118LM SYMMETRICAL BEAM. MOUNTED ON 4M POLE
- H - WALL LIGHTS - 2.5W DOWN ONLY - BEGA 22280K3 - 176LM - MOUNTED AT 2M HIGH ON BUILDING FACADES

ISOLINES

PLEASE NOTE: THE ISOLINES SHOWN ARE FROM 0.0 LUX - 20 LUX. THE 0.0 LUX 'TEXT' IS NOT SHOWN ON THE DRAWING AS EVERYTHING OUTSIDE THE 0.1 LUX CONTOUR LINE IS THE VALUE OF 0.0 LUX.

- 0.0lx
- 0.1lx
- 0.2lx
- 0.5lx
- 1lx
- 2lx
- 5lx
- 10lx
- 20lx

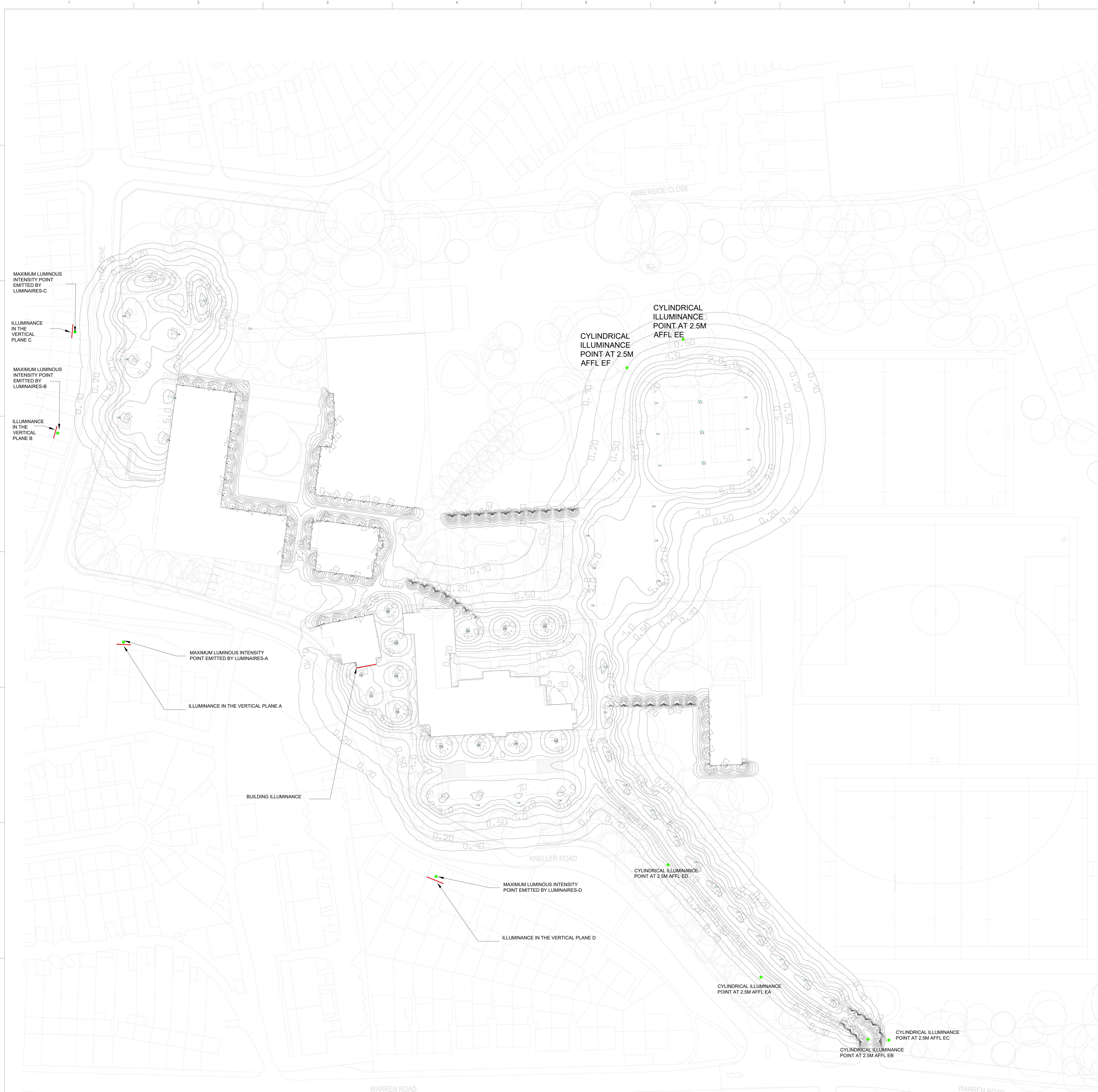
ILP GUIDANCE NOTES ON THE REDUCTION OF OBTRUSIVE LIGHT

	UPWARDS LIGHT RATIO - ULR [MAX %]	ILLUMINANCE IN THE VERTICAL PLANE (LUX) (E _v)		MAXIMUM LUMINOUS INTENSITY EMITTED BY LUMINAIRES [CD] (I in cd)*		BUILDING LUMINANCE PRE CURFEW	PASS OR FAIL
		PRE CURFEW	POST CURFEW	PRE CURFEW	POST CURFEW		
BASED ON MAINTENANCE FACTOR OF 1							
ENVIRONMENTAL ZONE E3	5.00	10	2	10,000	1,000	10	TARGET
ULR	1.32						PASS
PLANE A		0.01	0.01				PASS
PLANE B		0.09	0.09				PASS
PLANE C		0.19	0.19				PASS
PLANE D		0.29	0.29				PASS
VIEW POINT A				29.64	29.64		PASS
VIEW POINT B				111.09	111.09		PASS
VIEW POINT C				64.98	64.98		PASS
VIEW POINT D				278.69	278.69		PASS
BUILDING LUMINANCE						3.23	PASS

CALCULATION POINT	CYLINDRICAL ILLUMINANCE (LUX)
EA	0.28
EB	0.38
EC	0.15
ED	0.47
EE	0.66
EF	0.79

CYLINDRICAL ILLUMINANCE CALCULATION POINTS

CALCULATION POINTS HAVE BEEN PLACED AT KEY POSITIONS WITHIN THE WOODLAND CLOSE TO THE PROPOSED LIGHTING. THESE CALCULATION POINTS HAVE BEEN PLACED AT 2.5M ABOVE FLOOR LEVEL. THE RESULTS DEMONSTRATE THAT LIGHTING LEVELS IN THE VERTICAL PLANES ARE LESS THAN 1LUX



Issue	Date	Description	By	Chkd	Verd
P04	07/09/22	FOR PLANNING	KR	LS	
P03	01/09/22	FOR PLANNING	LS	KR	SM
P02	13/08/22	FOR PLANNING	KR	MT	LS
P01	31/05/22	DRAFT FOR PLANNING	KR	MT	LS

Project: KNELLER HALL LIGHT POLLUTION ASSESSMENT

Client: RADNOR HOUSE SCHOOL

Title: LIGHT POLLUTION ASSESSMENT

Drawing Status: S4 - ISSUED FOR STAGE APPROVAL

Project No: 1033713 Scale: 1:500

CUNDALL
 Fourways House
 57 Hilton Street
 Manchester, M1 2EJ
 Tel: +44 (0)161 244 5660
 Website: www.cundall.com

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