ITALO 1

QUARTO LED

DETAIL 1 - SWITCHING DETAIL
SWITCHLINE 1 - EXISTING EXTERNAL LIGHTING CIRCUIT, WITH NEW BUILDING MOUNTED LUMINAIRES ADDED. TO BE LINKED TO TIMER.
SWITCHLINE 2 - NEW PHOTOCELL LINKED TIMER. LUMINAIRES TO TURN ON AT SET TIME/LIGHTING LEVEL AS SET BY THE CLIENT, BUT TIMED TO TURN OFF BETWEEN THE HOURS OF 00:00 AND 05:00

DETAIL 2 - EXTRACT FROM 'BS EN 12464-2 - SECTION 4.5 - OBTRUSIVE LIGHT - TABLE 2'.

4.5 Obtrusive light

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

The limits of obtrusive light for exterior lighting installations, to minimize problems for people, flora and fauna, are given in Table 2 and for road users in Table 3.

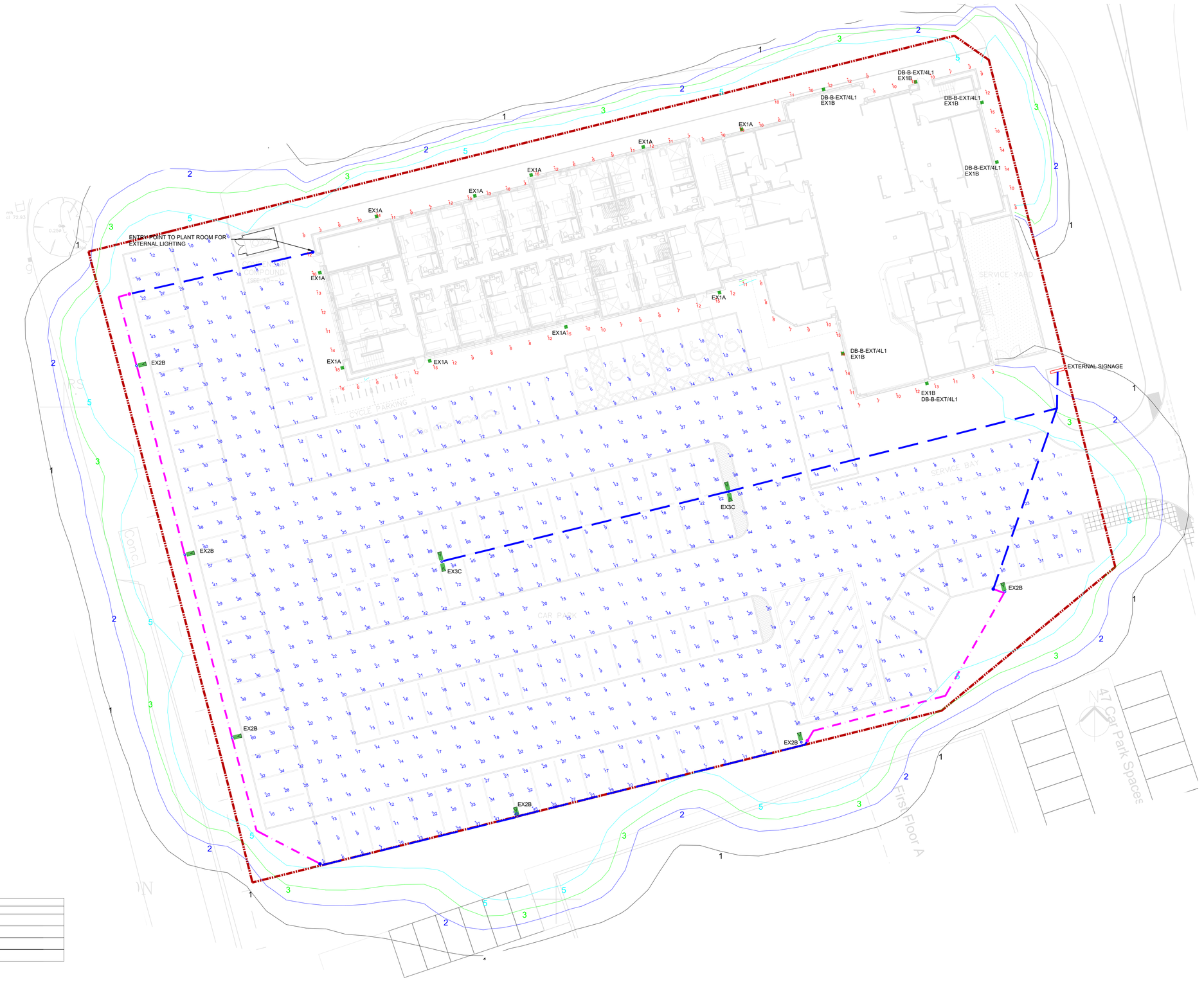
Table 2 — Maximum obtrusive light permitted for exterior lighting installations

Environmental zone	Light on properties		Luminaire intensity		Upward light ratio	Luminance	
	E_v lx		I cd		R_{UL} %	L_b cd·m^{-2}	L_s cd·m^{-2}
	Pre-curfew[a]	Post-curfew	Pre-curfew	Post-curfew		Building facade	Signs
E1	2	0	2 500	0	0	0	50
E2	5	1	7 500	500	5	5	400
E3	10	2	10 000	1 000	15	10	800
E4	25	5	25 000	2 500	25	25	1 000

where

E1 represents intrinsically dark areas, such as national parks or protected sites;
E2 represents low district brightness areas, such as industrial or residential rural areas;
E3 represents medium district brightness areas, such as industrial or residential suburbs;
E4 represents high district brightness areas, such as town centres and commercial areas;
E_v is the maximum value of vertical illuminance on properties in lx;
I is the light intensity of each source in the potentially obtrusive direction in cd;
R_{UL} is the proportion of the flux of the luminaire(s) that is emitted above the horizontal, when the luminaire(s) is (are) mounted in its (their) installed position and attitude, and given in %;
L_b is the maximum average luminance of the facade of a building in cd·m^{-2};
L_s is the maximum average luminance of signs in cd·m^{-2}.

[a] In case no curfew regulations are available, the higher values shall not be exceeded and the lower values should be taken as preferable limits.



Lighting Calculation Zone summary				
Calculation zone	Required Illuminance	Required uniformity (Uo)	Achieved Illuminance	Achieved uniformity (Uo)
1) Building Perimeter	5 lux	0.25	10 lux	0.300
2) Car Park	15 lux	0.25	21 lux	0.270

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	10	EX1A	SINGLE	10w LED Quarto bulkhead with Street optic building mounted at 4 metres.
	6	EX1B	SINGLE	10w LED Quarto bulkhead with Street optic building mounted at 4 metres.
	6	EX2B	SINGLE	93w (4 module) 850mA Italo 1 with S05 Optic column mounted at 6 metres.
	2	EX3C	DOUBLE	93w (4 module) 850mA Italo 1 with S05 Optic column mounted at 6 metres.

NOTES

1. DO NOT SCALE FROM THIS DRAWING
2. THIS DRAWING HAS BEEN PREPARED TO PROVIDE PLANNING INFOMATION REGARDING THE SELECTION AND SITING OF NEW EXTERNAL LIGHTING FOR THE NEW DEVELOPMENT.
3. NEW CAR PARK LIGHTING TO BE LINKED TO TIMER, WHICH IS REQUIRED TO BE TURNED OFF BETWEEN THE HOURS OF 00:00-05:00 (REFER TO DETAIL 1).
4. PLANNING DETAILS DEMONSTRATE UPWARD LIGHT RATIO, SHOWING 0% WHEN ALL LIGHTS TURNED ON. (MAX PERMISSABLE IS 25% - REFER TO DETAIL 2 - ENVIRONMENTAL ZONE E4).

PROPOSED EXISTING
ELECTRIC SUPPLY
GAS MAIN
WATER MAIN
DATA CABLE
DUCT LV (HARD DIG)
DUCT LV (SOFT DIG)
SITE BOUNDARY

REV	DATE	DRWN BY	CHKD BY	AMENDMENTS
P1	22/01/19	JAA	BMS	CLIENT TITLE CHANGE

PLANNING

CLIENT TITLE: OXFORD TECHNOLOGY PARK

DESIGNED BY: RWM
DRWN BY: JAA
CHECKED BY: BMS
SCALE: 1:200@A1

DRAWING TITLE: Mechanical & Electrical
Site Layout
External Lighting

PROJECT TITLE: Oxford Technology Park Limited

JENKS ASSOCIATES LIMITED
Building Services Consulting Engineers
www.jenksassociates.co.uk
Tel : 01733 395595

DRAWING TITLE: 395-01-EX-101
REV: P1