

NOTES:

- ELECTRICAL CONTRACTOR TO VERIFY LIGHTING DESIGN PRIOR TO INSTALLATION.
- GROUND LEVEL LIGHTING TO PEDESTRIAN AREAS IS TO BE CONTROLLED VIA INTEGRAL PHOTO CELL (WHERE POSSIBLE) AND DALI DRIVERS AS PER EXISTING LIGHTING IN ADJACENT AREAS. THIS WILL ALLOW INTEGRATION OF THE NEW LIGHTING INTO THE EXISTING LIGHTING CONTROL SYSTEM FOR THE CONNECTING AREAS. THIS WILL ENSURE THAT THE LIGHTING WILL BE ENERGISED AT LOW AMBIENT LIGHT LEVELS AND REMAIN ON THROUGH THE NIGHT UNTIL SUNRISE. LIGHTING TO THE MULTISTOREY CAR PARK BUILDING WILL BE CONTROLLED BY A NEW WIRED DALI2 SYSTEM AND COMMISSIONED TO ENSURE LIGHTING IS ONLY ON WHEN AND WHERE NEEDED. LIGHTING TO THE SERVICE YARD WILL BE CONTROLLED BY THE NEW DALI2 CONTROL SYSTEM WITH USE OF DISABLEABLE MANUAL SWITCH AND PHOTOCELL. THE NEW DALI2 SYSTEM IS BASED ON THE HELVAR IMAGINE LIGHTING CONTROL PLATFORM. AN INDICATIVE CONTROLS LAYOUT FOR THE CAR PARK BUILDING HAS BEEN SHOWN AS PER DESIGN PACKAGE RECEIVED FROM HELVAR JULY 2020. THIS WILL BE DEVELOPED AT THE NEXT STAGE AS THE DESIGN PROGRESSES. FURTHER DETAILS ON THE CONTROL STRATEGIES FOR ALL LIGHTING CAN BE FOUND IN CPW EXTERNAL LIGHTING REPORT NO. 260161-CPW-XX-02-DR-E-221001.
- THE PROPOSED LIGHTING DESIGN TO COMPLY WITH THE CIBSE GUIDE 1006 THE OUTDOOR ENVIRONMENT, BS EN 12464-1 INDOOR WORK PLACES 2021, BS EN 12464-2 OUTDOOR WORKPLACES 2021 & P GUIDANCE NOTE 1 THE REDUCTION OF OBTRUSIVE LIGHT 2021 AND ALL LATEST ADDITIONS.
- IN LINE WITH REQUIREMENTS Laid OUT IN BS EN 12464-1, 150LX AVERAGE AND A UNIFORMITY OF 0.4 HAS BEEN TARGETED FOR THE PARKING Lanes 20LX AVERAGE AND A UNIFORMITY OF 0.4 HAS BEEN TARGETED. AS PER BS EN 12464-2, 20LX AVERAGE AND A UNIFORMITY OF 0.4 HAS BEEN TARGETED FOR STEPS AND PEDESTRIAN RAMPS. FOR THE SERVICE YARD 5 LX AVERAGE WITH A UNIFORMITY OF 0.25 HAS BEEN TARGETED. A HIGHER LEVEL OF 45LX AND 0.35 UNIFORMITY HAS BEEN TARGETED TO THE MAIN PEDESTRIAN ROUTES. AS PER CLIENT SPECIFICATION. FURTHER DETAILS ON THE LUX LEVELS CAN BE FOUND IN CPW EXTERNAL LIGHTING REPORT NO. 260161-CPW-XX-02-DR-E-221001.
- LUX LEVELS SHOWN ON THIS DRAWING ARE WITH ALL LUMINAIRES AT 100% OUTPUT. WITH EFFECTIVE USE OF THE PROPOSED NEW DALI2 LIGHTING CONTROL SYSTEM, LUMINAIRES CAN BE COMMISSIONED AND DIMMED DOWN TO MEET THE DESIGN LUX LEVELS AND REDUCE OBTRUSIVE LIGHT LEVELS FURTHER.
- LUMINAIRE REFERENCES EX3 AND EX5 CAN BE SUPPLIED WITH AN INTEGRAL 3 HOUR EMERGENCY BATTERY FOR USE AS AN EMERGENCY LUMINAIRES TO OPEN AREAS, ESCAPE ROUTES, POINTS OF EMPHASIS AND FINAL EXITS AS REQUIRED. THE PROPOSED DALI2 LIGHTING CONTROL SYSTEM WILL PERFORM ALL EMERGENCY TESTING AND MONITORING OF EMERGENCY LUMINAIRES TO THE CAR PARK BUILDING. EMERGENCY LIGHTING TO BE DESIGNED BY CONTRACTOR AT THE NEXT STAGE.
- NO SHRUBBERY OR FOLIAGE HAS BEEN ALLOWED WITHIN THE LIGHTING CALCULATION TO ALLOW FOR WORST CASE ON THE LIGHT SPILL OVER THE SITE BOUNDARY.
- AT THIS EARLY STAGE, THE EXACT SPECIFICATION OF THE CAR PARK CLADDING HAS NOT BEEN FULLY DETAILED. IN THIS CALCULATION, SOLID WALLS HAVE BEEN MODELLED TO SURROUND THE GROUND LEVEL AND SERVICE YARD. VERTICAL 'TINT' HAVE BEEN MODELLED TO THE FIRST FLOOR AND ABOVE, AS SHOWN IN ARCHITECT'S CURRENT FACADE INFORMATION. LIGHTING TO THE STAIRCORES, BIKE STORE, INTERNAL PLANT SPACES ETC. HAS BEEN SHOWN ON THESE DRAWINGS BUT IS NOT INCLUDED IN THE CALCULATION RESULTS. AS THIS IS AN EXTERNAL LIGHTING ASSESSMENT AND IT IS ASSUMED THESE WILL HAVE SOLID WALLS AND WILL NOT CONTRIBUTE TO LIGHT SPILL.
- OBTRUSIVE LIGHT CALCULATIONS HAVE BEEN UNDERTAKEN ON THE CLOSEST EXISTING RESIDENCES WITH ALL LIGHTING ON AT 100% OUTPUT AND MEET THE REQUIREMENTS FOR AN E4 ENVIRONMENTAL ZONE. AS SET OUT IN THE P GUIDANCE NOTE 1 THE REDUCTION OF OBTRUSIVE LIGHT 2021. ADDITIONAL OBTRUSIVE LIGHT CALCULATIONS HAVE BEEN PERFORMED ON THE NEIGHBOURING CROWN HOUSE, WHICH SHOW THAT MITIGATION MEASURES ARE REQUIRED TO REDUCE LIGHT INTRUSION TO MEET ACCEPTED POST-CUREW LEVELS. FURTHER DETAILS OF THESE CALCULATIONS CAN BE FOUND IN CPW EXTERNAL LIGHTING REPORT NO. 260161-CPW-XX-02-DR-E-221001.
- AS THE CAR PARK IS PROPOSED TO BE IN 24/7 OPERATION, THE CALCULATION RESULTS LISTED HERE DEMONSTRATE THE PRE-CUREW LEVELS WITH ALL LIGHTING ON AT 100% OUTPUT, INCLUDING THE SERVICE YARD.
- LIGHTING TO THE SERVICE YARD HAS BEEN DESIGNED AND CALCULATED TO PROVIDE A SAFE LEVEL FOR PEDESTRIAN MOVEMENT ONLY. IT IS ASSUMED THAT IF ANY OUT OF HOURS OR NIGHT TIME MAINTENANCE WORK TO EQUIPMENT IS REQUIRED, PERSONNEL WILL USE PORTABLE TASK LIGHTING.
- ONE ITERATION OF LUMINAIRE REF. EX4 IN THE SERVICE YARD IS COLUMN MOUNTED INSTEAD OF WALL BRACKET MOUNTED TO AVOID MOUNTING TO THE BOUNDARY WALL.

SECOND - NINTH FLOOR CALCULATION RESULTS:

02 - PARKING CENTRAL
ILLUMINANCE (LUX)
AVERAGE=208.39 MAXIMUM=302.3 MINIMUM=102.4 MINAVG=0.49

02 - PARKING LEFT
ILLUMINANCE (LUX)
AVERAGE=199.34 MAXIMUM=301.2 MINIMUM=84.9 MINAVG=0.43

02 - PARKING RIGHT
ILLUMINANCE (LUX)
AVERAGE=209.72 MAXIMUM=285.7 MINIMUM=100.8 MINAVG=0.48

02 - TRAFFIC LANES
ILLUMINANCE (LUX)
AVERAGE=142.72 MAXIMUM=288.2 MINIMUM=58.2 MINAVG=0.41

02 - INTERNAL LIFT LOBBY
ILLUMINANCE (LUX)
AVERAGE=165 MAXIMUM=213 MINIMUM=139 MINAVG=0.75

02 - INTERNAL STAIRCORE
ILLUMINANCE (LUX)
AVERAGE=158 MAXIMUM=179 MINIMUM=124 MINAVG=0.78

LIGHTING LEGEND:

- EX1**
MANUFACTURER: DW WINDSOR
PRODUCT: SEPHORA HALO
OUTPUT: 41.5W, 6330LM
OPTIC: A1, WIDE ROAD OPTIC
COLOUR TEMPERATURE: 3000K
MOUNTING TYPE: COLUMN
MOUNTING HEIGHT: 6M
- EX2**
MANUFACTURER: DW WINDSOR
PRODUCT: SEPHORA HALO
OUTPUT: 97.5W, 14630LM
OPTIC: C3, SYMMETRIC AREA OPTIC
COLOUR TEMPERATURE: 3000K
MOUNTING TYPE: COLUMN
MOUNTING HEIGHT: 6M
- EX3**
MANUFACTURER: THORN
PRODUCT: AQUA FORCE PRO, 1600MM
OUTPUT: 48W, 6373LM
OPTIC: SYMMETRIC
COLOUR TEMPERATURE: 3000K
MOUNTING TYPE: SURFACE CEILING
MOUNTING HEIGHT: LVL 00 = 4.0M, LVL 01-09 = 2.7M
TO BE SUPPLIED WITH INTEGRAL EMERGENCY BATTERY FOR USE AS AN EMERGENCY LUMINAIRE AS REQUIRED
- EX4**
MANUFACTURER: DW WINDSOR
PRODUCT: KIRIUM PRO S MINI
OUTPUT: 16W, 2754LM
OPTIC: C2, AREA OPTIC
COLOUR TEMPERATURE: 3000K
MOUNTING TYPE: WALL BRACKET
C INDICATES LUMINAIRE IS TO BE COLUMN MOUNTED (SEE NOTE 12)
MOUNTING HEIGHT: 4M
- EX5**
MANUFACTURER: THORN
PRODUCT: PIAZZA 3
OUTPUT: 13W, 1652LM
OPTIC: ASYMMETRIC
COLOUR TEMPERATURE: 3000K
MOUNTING TYPE: SURFACE WALL
MOUNTING HEIGHT: 2.5M
TO BE SUPPLIED WITH INTEGRAL EMERGENCY BATTERY FOR USE AS AN EMERGENCY LUMINAIRE AS REQUIRED

LIGHTING CONTROL LEGEND:

- HELVAR DALI2 ENABLED 1 WAY MANUAL SWITCH
- HELVAR DALI2 ENABLED 2 WAY MANUAL SWITCH (EXTERIOR)
- HELVAR SURFACE MOUNT DALI2 PIR SENSOR
- HELVAR SURFACE MOUNT WIDE RANGE DALI2 MULTISENSOR (DAYLIGHT & PIR)
- HELVAR IMAGINE DALI2 CONTROLLER (LOCATION AND QUANTITIES TO BE CONFIRMED)

PRJ	17072020	FOR PLANNING	MR	VS
PRJ	15072020	DRAFT ISSUE	MR	VS
REV	DATE	DESCRIPTION	BY	VE



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RIBA Stage

STAGE 3

Status

FOR PLANNING

Client

UNIVERSITY OF HUDDERSFIELD

Project

MULTI STOREY CAR PARK

Drawing Title

PROPOSED LIGHTING LAYOUT
SECOND - NINTH FLOOR

Scale (A1)

1:100

Date

JULY 2026

By

KR

Ve

VS

Proj ID	Originator	Function	Status	Form	Discipline	Number	Subsity	Revision
260161	CPW	XX	02	DR	E	221003	S3	P02

260161-CPW-XX-02-DR-E-221001

CPW Project No. 220161

Linked Files