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18-038/4/PS

7th September 2018

Ref- MIPA Paints, Fulflood Road, Leigh Park – Proposed External Lighting

Dear Michael

Please see attached exert from our Tender Specification which details the proposals for the external lighting at the above. This is to be read in conjunction with our Drg No 18-038 E004T1 and can be issued to Havant Borough Council to discharge Planning Condition 14.

Yours Sincerely

Peter Sheppard
Director

MIPA PAINTS - External Lighting

Design Requirements

Design, provide and install an artificial lighting installation to provide a lit environment that fully complies with the Society of Light and Lighting (SLL) Code for Lighting; plus all relevant CIBSE Lighting Codes LG6, BS EN 12193, BS 54891 (2003), A2:2008 and Building Regulation Part L2A, 2014.

All external lighting is to be designed to avoid light pollution and spillage in accordance with the ILE Guidance Notes for the Reduction of Obtrusive Light and to avoid light pollution and spillage to the adjacent properties.

All exits from the building shall be provided with external emergency lighting that enables safe exit to comply with BS 5266-1:2016.

The lighting design criteria for the project are detailed below.

Area	Average Illuminance	Working Plane	Uniformity	Lm/W	Colour Rendering Ra	Glare Rating	Sky Glow ULR (Max %)	IP Rating
Building perimeter inc footpaths (pedestrian only)	5 lux	Ground	0.25	44	82	50	5.0	IP65
Access road	10 lux	Ground	0.4	56	82	50	5.0	IP65
Car Park	10 lux	Ground	0.25	56	82	50	5.0	IP65
Bicycle racks & storage compound	10 lux	Ground	0.4	58	82	50	5.0	IP65
Recycling / waste handling area	20 lux	Ground	0.25	58	82	55	5.0	IP65
Outside Visitor and Staff Entrances and Loading Bays	50 lux	Ground	0.4	44	82	50	5.0	IP65
Outside Warehouse Entrances & Loading Bay roller shutters	50 lux	Ground	0.4	58	82	50	5.0	IP65
External plant compounds inc roof	50 lux	Ground / roof deck	0.4	82	82	50	5.0	IP65

Carry out lighting design using 0.8 maintenance factor

Design all ducting and trenching and cable draw-in pit locations. Ducting shall be required under all hard-standings, entry / exit into the building and through the concrete column bases.

Develop the scheme and provide all necessary details to the Local Authority to ensure compliance with any planning conditions relating to the external lighting.

Provide all necessary BREEAM evidence as detailed in Appendix 5 in order to gain the targeted credits under BREEAM:

- *Hea 1 - Visual Environment*
- *Hea 6 - Safety and Security.*
- *Ene 3 – External Lighting*
- *Pol 4 – Reduction of Night Time Light Pollution*

System Description

The external lighting installation shall be as per detailed on ION Consulting Drg No 18-038 E004 T1.

The external lighting shall be electrically fed from dedicated separately metered external lighting MCB distribution board, and shall provide illumination to the following areas:

- Car park, access road, main entrance and service yards
- Flood lighting of loading bays
- Perimeter pedestrian lighting and security lighting to assist CCTV
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Building Mounted Security Lighting

Bulkheads with integral emergency backup units to provide maintained operation and to comply with BS5266:2016 shall be fitted outside each exit door, and outside each plant room door. Additional lights shall be fitted to provide security lighting to the building perimeter.

Positions of all lights shall be agreed with the Architect and set out in relation to doors, windows, drainage pipes, rainwater pipes, lightning protection down-conductors etc.

Luminaires shall be mounted directly to the building fabric and shall be fed using wiring inside the building, entering directly in the rear of each fitting.

These fittings shall be controlled by contactors, the coil of which shall be fed by a combination of time switch and photocell.

Building Mounted Floodlights and Columns

Provide and install new floodlighting to illuminate the car parking areas, service yards and access roads to the site. Illumination shall primarily be achieved from high output bulkheads mounted on the buildings, supplemented by column mounted floodlights to achieve a compliant lighting scheme across the site.

Building mounted bulkheads shall be mounted directly to the building fabric and shall be fed using wiring inside the building, entering directly in the rear of each fitting.

External columns shall be wired using XLPE/SWA/LSF cable installed in ducts from the electrical switchroom to the column positions. The Electrical Contractor shall advise the main contractor of all ducting requirements including intermediate cable draw-in pits as required.

The bulkheads and columns shall be controlled by contactors, the coil of which shall be fed by a combination of time switch and photocell.

Other Areas

Additional floodlights shall be mounted at high level above loading bays, roller shutter doors and goods yard

The luminaires shall be manually controlled by a local switch with photocell to prevent operation during daylight. Manual switches for lighting to loading bays shall be located internally inside and adjacent to the roller shutter door. Manual switches for the roof plant access area shall be Masterseal type located at roof level at the top of the access stairs.

Diligence shall be applied regarding the lighting of the yard and car parking areas adjacent to the loading bays and around the building. Light spillage and obtrusion shall be limited to acceptable levels as recommended by the ILE Guidance Notes for the Reduction of Obtrusive Light GN01.

Controls

External lighting shall be automatically controlled by timeswitches and photocells in accordance with section 'Lighting Controls'.

Method of Installation

Wiring and containment shall be installed in accordance with sections 'Wiring Systems'.

The automatic lighting controls shall be installed in accordance with section 'Lighting Controls'.

Building mounted luminaires shall be mounted directly on to the building structure. The electrical contractor shall ensure that luminaires mounted onto cladding systems are installed in accordance with the cladding manufacturer's requirements.

Building mounted luminaires are to be wired from the inside of the building. Holes through external walls and cladding shall be neatly drilled to minimise damage to the structure, enter the correct position directly into the rear of the fitting, such that the installed luminaires are installed at uniform height around the building. Holes through the external walls shall be sleeved with 20mm PVC conduit to protect the cable, and fire sealed after cable installation.

Columns shall be root mount or flange base to suit the structural engineer and/or main contractor's requirements. Provide the main contractor details of builders work requirements including cable trenching, ducting and draw pits as well as concrete base details for columns. Details to include cable entry ducting through bases as necessary. Concrete bases will need to take account of windage - provide windage details to the structural engineer for all columns and lanterns. Provide J-bolts and installation instructions for flange base columns.

The Electrical Contractor shall not install cables until trenches are to the correct depth and the sand base has been laid and/or duct integrity has been proven. After cable installation and prior to the top sand layer and back-filling of the trench, the Electrical Contractor shall test the cable and lay in yellow electrical cable warning tape ('Heptape') above the cable and/or duct.

The Electrical Contractor shall co-ordinate with the Main Contractor cable and duct entries into the building and ensure that holes are sealed to prevent water and fauna ingress.

Provide and install all timeswitches, sensors, contactors, epoxy resin joints, weather proof junction boxes, fuse-cut outs etc to enable connection of the installation.

Equipment Specifications and Suppliers

Luminaire	Description	Location
	Exterior IP66 column-mounted LED lantern with die-cast aluminium housing, injection moulded polycarbonate cover, LED lamp, integral driver and rear spill shields fitted on 6m galvanised steel circular column. Zero ULR As per Gemma Lighting 'Conquest' Range	Car Park Compound (See Type 'A' on Ext Lighting Drawing)
	Exterior IP65 LED bulkhead luminaire with black powder-coated die-cast aluminium body, opal polycarbonate diffuser, LED lamp and integral driver. Zero ULR As per Gemma Lighting 'Porchester Hood' Range	Building mounted perimeter security lighting including outside external doors and to external escape stairs including roof access (See Type 'B' on Ext Lighting Drawing)
	LED floodlight with powder-coated die-cast aluminium body, toughened glass cover, LED lamp, integral driver and wall bracket. Zero ULR As per Gemma Lighting 'Blazer Range'	Building mounted perimeter security lighting including outside illumination of car parking areas, storage and recycling compounds, plus loading bays (outside roller shutter doors) (See Type 'C' on Ext Lighting Drawing)
	IP65 rated surface 'vapour-proof' LED luminaire with GRP body, polycarbonate diffuser, metal diffuser clips, LED lamps and integral driver As per Gemma Lighting 'Victory' range	Plant areas (See Type 'D' on Ext Lighting Drawing)

Equipment:	External Luminaires
Manufacturer:	Gemma Lighting
	Contact: Lucien McQueen
	Tel: 07710 172016
	Email: lucienmcqueen@gemmalighting.com

Equipment:	External switches and override switches
Manufacturer:	See sections 'Wiring Systems' and 'Lighting Controls'

Equipment	Time switches
Manufacturer	Sangamo or equal and approved
Type:	7-day quartz electro-mechanical timeswitch with power reserve and day omit, c/w plug-in base, conduit mounting box and clear plastic cover.

Equipment	External Photocells
Manufacturer	Royce Thompson or equal and approved
Type	V16 wall mounted adjustable photocell
Setting	70 lux

Equipment:	Contactors
Manufacturer:	Schneider (Merlin Gerin)
Type:	AC3 with AC/DC coil
Mounting	DIN rail

Testing and Commissioning

The complete installation is to be tested and commissioned in accordance with BS7671:2018, the 18th Edition of the IET Wiring Regulations, and BS5266 where appropriate.

On completion, the Electrical Contractor shall test the lighting levels achieved by the installation and prepare a report to the Engineer.

Allow to set time switches and photocells in accordance with the Client's requirements.

A separate visit shall be included within the tender price for training of the Client's staff on a date agreed with the Client. Obtain signature from each member of staff to whom the system has been demonstrated.

Full Test and Completion Certificates shall be provided as detailed in Part 1 of this specification.