

1/1 EXTERNAL LIGHTING

This section of the works shall consist of the contractor design, supply, installation and commissioning of all external lighting and emergency lighting. The installation shall be as detailed within this performance specification and shall be complete in all respects.

The contractor shall allow for the design, supply, Installation and commissioning of all works associated with the new external lighting installation.

The external lighting shall be designed to:-

- Enable visitors and staff to enter the building safely and securely.
- Enable pedestrians on footpaths to orientate themselves, to detect the presence of other pedestrians and other hazards.
- To discourage crime against people and property.
- Highlight entrances to the building.
- Aid security and the CCTV system.
- Enable customers to view cars when dark

All in accordance with BS5489: 2003 parts 1 & 2 and CIBSE lighting guide LG6 as applicable.

The external lighting design and installation shall also comply with any relevant regulations and codes of practice issued by the NHS.

Area	Average Maintained Illumination (lux)
Roads	5
Car Park	5-20 (0.25UF)
Pathways	10-20
Steps	50
Outdoor working/storage	100
Cycle Racks	10
Building entrance	50
Delivery and Refuse Areas	20

All external light fittings shall be anti-vandal and have limited light pollution.

Light sources shall be LED and shall have the appropriate colour temperature and colour rendering. Generally, 4000k & Ra50 min. Luminous efficacy shall generally be limited to 60 lumens/circuit watt.

The new lighting installation shall be energy efficient and shall comply with Building Regulations Part L.

All lighting designs shall be approved by the Engineer and/or client prior to installation.

External lights shall generally be mounted on galvanised steel root mounted columns where possible. Columns being located in soft dig areas to limit trenching works and damage to car park surfaces. Allow for painting the columns a colour to be confirmed by the Client.

External wall mounted lighting fittings shall generally be wired direct via 'back entry' cable holes where building mounted. Where this is not possible and to limit internal builder's work cabling may be surface fixed to the building exterior with prior agreement of the client.

External lights shall incorporate emergency conversions as necessary to comply with BS5266.

Allow for provision of detailed drawings and specification of the proposed external lighting and emergency lighting system. The drawings and specification shall be issue to the client at a time to be agreed with the client, for the purposes of the client approving them. No supply or installation shall commence until the client has approved the system design and installation methods.

The contractor shall allow for the complete removal of the existing redundant external lighting and emergency lighting system.

The contractor shall allow for all necessary project management and liaison with the client.

Allow for all necessary out of hours working.

EXTERNALS		
Location	Type	Light fitting Image
Car parking and roadway areas	Holophane Lighting Ltd, D-Series or equal	
Building mounted to illuminate walkways and entrances (emergency conversions where necessary)	Holophane Lighting Ltd, Amenity Wall or equal	
External emergency lighting	Luceco Lighting high output bulkhead or equal	

The contractor may obtain a quotation from the following suppliers or equal and approved:

Holophane Lighting Ltd,
Bond Ave,
Bletchley,
Milton Keynes,
Buckinghamshire,
MK1 1JG.

Mr Roger Huxley
(07764) 336806
email- rhuxley@holophane.co.uk

1/1.1 LIMITING OBTRUSIVE LIGHT

The external lighting design and selection shall be in compliance with Table 1 of the ILE guidance notes for the reduction of obtrusive light. Light trespass onto neighbouring properties shall be avoided.

Limits on sky glow shall be in accordance with CIE 126-1997 – Guideline For Minimising Sky Glow and local planning regulations. Column mounted lights shall have 0% ULOR.

1/1.2 SUSTAINABILITY

Consideration should be given to the sustainability of the lighting installation. The choice of a specific design solution should achieve a reasonable balance between the various environmental aspects (Environmental Life-Cycle thinking: aimed to reduce the environmental impacts of products across the whole of their life cycle, including transport, installation, maintenance, possibilities for re-use, recycling and recovery of materials) and between environmental aspects and other relevant considerations, such as safety and health, technical requirements for functionality, quality, and performance, and economic aspects.

1/1.3 EXTERNAL EMERGENCY LIGHTING

This section of the works shall consist of the contractor design, supply, installation and commissioning of all emergency lighting. The installation shall be as detailed within this performance specification and shall be complete in all respects.

The contractor shall allow for the design, supply, Installation and commissioning of a new emergency lighting system to the external areas. The emergency lighting shall be designed in accordance with escape lighting to BS 5266, BS EN 1838, ICEL 1006 and CIBSE Lighting Guide 12: Emergency Lighting Design Guide. The emergency lighting shall allow the safe egress from the building of patients and staff to a muster point in the car park.

All fittings shall be ICEL approved and shall be integrated into the mains luminaires utilising non-maintained lamps. Each fitting shall be self-contained incorporating inverter and battery pack suitable for 3hr duration.

The emergency lighting systems shall incorporate maintained operation self-contained fittings at strategic positions and external fittings with battery conversions to ensure that persons escape to a safe location away from the building to the muster point.

The lighting circuit shall provide an un-switched phase and neutral to each emergency light as the manufacturer's recommendation.

Each group of emergency lights is to be associated with a local key switch for test purposes. All test key switches are to be engraved "Emerg Ltg Test".

1/1.4 ELECTRICAL INSTALLATION

The contractor shall be responsible for the design, selection and erection of the electrical services required. The electrical installation shall be in accordance with BS7671: 2018.

All product and materials shall have product conformity certification (eg BSI Kitemark, BSI Safety Mark or CARES scheme) or product approval (eg British Board of Agreement Certificate). All products must have the recognised CE mark attached.

All wiring shall be concealed and installed on a continuous containment system. Jointing of cables shall not be permitted.

Cabling and containment systems within escape routes shall comply with Regulation 422 of BS7671.

All cabling shall be produced in the UK by a reputable manufacturer, certified & accredited for quality by an independent third party body such as BASEC (British Approvals Service for Cables), or LPCB (Loss Prevention Certification Board). All cabling shall be marked on the insulation/sheath, repeated along the entire length with the manufacturers' name, type description, size and the relevant BS numbers. No cable manufactured more than one-year prior to delivery on site shall be utilised.

The contractor shall assess the characteristics and verify the suitability of the existing distribution boards and circuits where existing shall be re-used.

External lighting circuits shall be protected against overvoltage in accordance with Regulation 534 of BS7671 – Devices for Protection Against Overvoltage.

Allow for all necessary out of hours working.

1/1.4.1 EXTERNAL LIGHTING CONTROLS

The external lighting shall be controlled by photocell and time clock with an over-ride switch at a location to be co-ordinated with the client. External lights shall be switched on via the photocell and switched off by the time clock.

Liaise with Client to determine final on/off timings, at tender stage allow for the lighting to be automatically switched off between 2300hr and 0700hr.

The contractor shall allow for fully testing and commissioning all the lighting control systems to the satisfaction of the Client.

1/1.4.2 LABELLING

The contractor shall allow for all labelling and identification in accordance with the latest 18th edition of the IEE Regulations (BS 7671:2018 and amendments)

Accessories for specific purposes are to have their front plates engraved to indicate their usage.

All electrical wiring accessories shall be provided with a circuit reference label.

1/1.4.3 TESTING AND COMMISSIONING

The Contractor shall satisfy the Contract Administrator that on completion of the installation, all circuits are operating in accordance with the design intention.

The Contract Administrator will witness the final tests to be carried out by the Contractor on each section or phase of the installation. The tests shall be carried out in accordance with Part 6 of the IEE Regulations for Electrical Installation 18th Edition (*BS 7671*), and the result shall comply with the Regulations, before any section or phase is commissioned. After satisfactory tests have been completed, the Contractor shall commission the section or phase of the installation.

On completion of the works the Contractor shall supply the Contract Administrator with a certificates stating that the installation has been inspected, tested and is complete.

1/1.4.4 AS FITTED AND MAINTENANCE INFORMATION

2 No copies of the O&M manuals shall be supplied to the client at handover. 2 weeks prior to handover the contractor shall issue a draft O&M manual for approval. Fully completed O&M manuals shall be supplied at handover to the client.

1/1.4.5 CDM REGULATIONS

Comply with The Construction (*Design and Management*) Regulations 2015 in respect of the duties and power of the Principal Contractor under the Regulations.

Allow for allocating adequate resources to ensure compliance with and implementation of the Regulations under the supervision of a competent person experienced in the requirements of all matters related to Health and Safety at Work.

Allow for developing and implementing the Health and Safety Plan in relation to the works on site ensuring it always reflects the current situation and on Practical Completion of the Contract the completed document, including any relevant supporting documentation is handed to the Planning Supervisor.

Allow for ensuring all Sub-Contractors whether domestic or nominated and all site operatives and other persons authorised to be on site are aware of and comply with the requirements of the Health and Safety Plan.

Allow for ensuring all information that should be included in the Health and Safety File is provided to the Planning Supervisor. Such information shall include all relevant data obtainable from Sub-Contractors whether domestic or nominated and all suppliers.

Please refer to the Health & Safety Plan for more details relating to the known hazards identified in this project.

The Contractor shall allow for the installation to be carried out in line with the programme of works for the project.

Where materials, suppliers etc are not directly specified then the contractor shall select as appropriate using best purchasing arrangements to provide a competitive tender offer.

The contractor shall provide a full list of proposed manufacturers / suppliers prior to commencement on site so that the Engineer and Client can check for compliance and comment accordingly.

1/1.4.6 SITE SURVEY

It is incumbent on the contractor to visit site and undertake a detailed site survey prior to compiling and submitting their tender return.

No tender shall be considered valid if the contractor has not visited the site.

No claims for extras through lack of knowledge shall be entertained and the tender submission shall be deemed to have been completed with the benefit of information obtained from the site visit.

1/1.4.7 CONTROL OF NOISE AND DUST

The Contractor is to note that the site is likely to be occupied during part or all of the execution of the works and must take all reasonable precautions to keep to a minimum inconvenience caused to the occupants, particularly with regard to noise and the spread of dust.

Adequate dust sheets shall be provided by the Contractor and all noisy mechanical plant shall be fitted with mufflers and silencers. Unavoidable noise/dust likely to cause disturbance within the buildings should be kept to a minimum.

The Client maintains the right to ban radios from the site should a disturbance result.

The Contractor will allow for, and ensure that, all measures to control the noise levels produced by the operations on site, required by, or by virtue of, any enactment or regulation or by the working rules of any industry, are strictly complied with.

1/1.5 PROGRAMME

The Contractor shall allow for liaising with Client to determine and agree a suitable works programme. Allowance shall be made for all necessary out of hours working, staged preparation works and temporary supply arrangements.

1/1.6 BUILDER'S WORK

The Contractor shall be responsible for all building work required in connection with the installation of the new lighting and emergency lighting.

The contractor shall allow for all necessary external trenching, backfilling and making good of any finishes. Trenching shall be located in soft dig grass verges where possible. LV electrical services shall be buried to a minimum depth of 600mm in a carriage way and 450mm in footway/grass verge. Provide marker tape above any cabling within the trench. Allow for producing a programme of works and liaising with the client so as to cause the minimum disruption to hospital operations.

Consult the asbestos register prior to carrying out any builders-work or installation works.

The contractor shall provide all necessary protection during the course of the installation works to enable safe operation of the site during the construction process.

The contractor shall allow for the complete removal of the existing external lighting and emergency lighting system and allow for all necessary builder's remedial works and making good of the building fabric and finishes.

Allow for all necessary fire stopping.