Section 8 – Floodlighting System

8.0 – Floodlighting System	
Reference	**Minimum Work Requirements**
8.01	General The PlayZone is to be floodlit using LED luminaires, final scheme design (column locations, heights, foundation design and performance) is to be undertaken by the Contractor. The floodlighting should be designed as per any planning agreement for the scheme. For the purposes of this tender, assume planning has been agreed on whichever scheme can suit the requirements. Feeder Pillar Supply, install and commission a feeder pillar to provide electrical power to the new floodlighting. The feeder pillar installation should comply with the following: • Feeder pillar shall be constructed from 5mm (min) galvanized sheet steel • Feeder pillar doors with door seals rated to IP65 and equipped with tamper proof locks and a staple and hasp suitable for a Chubb type padlock • Feeder pillar doors, hinges and locks to be stainless steel • Feeder pillar backboard shall be of 20mm thick varnished marine ply with a minimum 25% spare space. • The armour of all incoming cables shall be bonded to the pillar eath stud using a minimum size of 16mm2 single core green/yellow cable. • The pillar is to be mounted on a concrete plinth located close to the gated access, but not close enough so as to provide a step for easy access for unauthorised access to the facility. The feeder pillar installation shall be sized accordingly and include: • DNO cut-out and metering point (supplied by the utility supply company) • Lockable TP and N fuse switch main isolator • 1Nr TP and N contactor used to switch the lighting distribution board • 1Nr contactor override switch • 1Nr TP and N switched lighting distribution board including BS88 fuses and fuse carriers (min 25% spare space for additional fuses) • 1Nr TP and N unswitched lighting distribution board including BS88 fuses and fuse carriers (min 25% spare space for additional fuses) • 230V, 12A single phase, neutral and earth, 30mA RCD protected, one gang, switched socket outlet • 230V, single phase, one gang, switch to operate feeder pillar internal lighting • 11W bulkhead light fitting. The light fitting shall be classified IP65 and have an impact resistant polycarbonate cover • 60W tubular heater including protective stainless-steel wire cage and -5°C to +5°C thermostat. • Local/maintenance authority number or letter stencilled in white letters • Equipment identification label (engraved traffolyte or similar labels) fitted on or adjacent to each item of electrical equipment within the feeder pillar • Durable 400 Volt warning labels • Laminated plastic international electricity symbol (lightning flash) • Laminated copy of the electrical schematic diagrams including a durable holder fitted to the feeder pillar door. Installation Generally Installation to include all civil engineering, trenching, cabling and electrical and connection works to a local onsite mains supply. In accordance with: • The Institute of Electrical Engineers Wiring Regulations BS7671.

- Appropriate British and European Standards.

Floodlighting System Protection
System protection shall include moulded case circuit breakers (MCCBs), rated for the prospective load of the proposed installation and selected to match the required fault level.

The arrangement of the power distribution at the distribution point shall provide short circuit and excess current protection for all sub-circuits. Adequate discrimination between MCCB and sub-circuit protective devices shall be included.

Floodlighting Earthing
All necessary earthing and cross bonding shall be provided in accordance with the current edition of the IEE Wiring Regulations.

Floodlighting System Management
Individual MCCB protection shall be provided for each control circuit.

2Nr (two) double 240V RCD protected sockets to be located within pitch-side electrical feeder pillar. This socket is to be separately wired from the floodlighting distribution board and key operated from within the feeder pillar.

Automated switching controls to be housed within pitch-side electrical feeder pillar via remote app (clubspark or similar TBC) including emergency override switch / remote app / on-off switch / timeclock (to control evening turn-off).

1Nr (one) three phase KWH meter to record the electrical consumption of the floodlights fitted within pitch-side electrical feeder pillar.

1Nr (one) hours run meter fitted within pitch-side electrical feeder pillar.

Electrical Cables
Cabling at the central distribution point and to columns shall be carried out in correctly sized XPLESWA cable.

All necessary control cables shall be provided for the connection of control within the column gear trays to the main switchgear position.

Cabling shall be buried into all ground within suitable 150mm Ø UPVC orange ducting to provide an underground containment system to allow the future re-cabling of the lighting system.

Draw cords are to be left in situ in all ducts before and after the drawing through of cables.

Ducting shall also be provided to facilitate the new electrical supply.

Ducting shall be installed underground to a minimum depth of 600mm below ground cover and covered with warning marker tape and 50mm thick sand marker layer.

Ducting shall be laid on a 50mm sand bed and buried in pea shingle before the topsoil is back filled.

Draw pits sized 450 x 450 x 450mm shall be installed at each floodlight column and all changes in direction. They shall be pre-formed and have lockable recessed covers.

Draw pits shall be installed prior to the installation of the ducting. Where stacked plastic sectional draw pits are used, duct entries shall be drilled to avoid weakening the structure.

System commissioning requirements

Upon completion of the works, test and commission the new system and issue compliance reports to prove the quality of installation including:

- NIC EIC Electrical Installation Certificate.
- Lighting test report to be carried out after dark, to establish that specified illumination levels have been achieved. These tests shall establish the initial level(s) of illuminance and uniformity and shall be related to design level performance.

Commissioning and testing shall be carried out by an "approved" contractor is one which is in possession of the NIC EIC (National Inspection Council for Electrical Installation Contracting) Approved Contractors Award or ISO 9000/BS 5750 (International Standards / British Standards) or is a member of the Electrical Contractors Association.

The Contractor must, when detailing the Lux values, give confirmation in writing of the date when the illumination test equipment was last calibrated.

Lighting performance

- As per below technical performance requirements
- Sport England Design Guidance Note: Artificial Sports Lighting – Updated guidance for 2012
- BS EN 12193:2007 Light and lighting. Sports lighting
- The Institution of Lighting Professionals (ILP): Guidance Notes for The Reduction of Obtrusive Light – Guidance Note 01/20.

Sport Design	Average Lux Level	Uniformity
Football Only	120 Lux	0.65
Football & Rugby	120 Lux	0.65
Football & Cricket	200 Lux	0.65
Football & Hockey	200 Lux	0.65
Football & Netball	120 Lux	0.65
Football & Basketball	120 Lux	0.65

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