

Brief for New Sports Lighting for the 3 Sports Facilities at Twickenham Sorting Office Development (Version 3, 24/7)

The key issue in this sensitive location is to design a lighting scheme for all three facilities that meets the minimum necessary standards in LG4 (not strictly applicable to skate-board parks) while avoiding light nuisance into nearby residential windows in the new development (vertical illuminance) as well as affording no direct view up into lanterns (i.e. direct glare) from those properties. How well the scheme(s) achieve this will be the major criterion by which they will be judged, rather than cheapness.

The designs should take into account the fact that there will be an opaque 4m high acoustic fence bordering the pitches approximately located at the red boundary line of the new development on the south, east and west sides of the pitches, which will considerably mitigate light spill to lower residential windows.

- Assume 800-1000 hours use per annum.
- All floodlights to be Flat Glass with beam emergence angles of between 50 deg and 60 deg.
- The lowest necessary column mounting heights to be specified in all cases.

i. Five-a-side Football Pitch

Given the fact that properties bound this pitch on two sides and the pitch is likely to be the most used of all three facilities, it is likely to create the greatest potential problems. The existing lighting comprises 4 x 1kW lanterns mounted on 8m mid-hinged columns which are too high and would create considerable light spill problems. We would recommend that the new design should use 6 x much lower wattage lanterns mounted at a maximum height of 6m, preferably lower if possible. Average illuminance 75 lux with a uniformity of 0.5.

ii. Basketball Court

Again an average illuminance of 75 lux and uniformity of 0.5 would be sufficient – probably provided by 4 column-mounted lanterns in the corners, given the orientation of the court vis-à-vis the residential properties.

iii. Skate-Park

NB: The developer's site plan is misleading in that the skateboard park extends beyond the yellow square and takes in most of the white area to the boundary fences and the edge of the basketball court.

The situation here is slightly different, in that there are no strict lighting criteria for such facilities – and the configuration of the skate-board ramps will be modified as part of the refurbishment. While 75 lux average and 0.5 Uniformity are again recommended, so as not to appear out of balance with the other two schemes, other lighting solutions might be considered, rather than a strict perimeter-mounted scheme. One idea that could be considered would be to have two 4-6m columns mounted towards the centre of the space, with say, 4 x lower-wattage floodlights on each column, at 90-degree rotations. This would considerably reduce the potential for back-spill from the lanterns.

Added Mitigation

Extra shielding to the front of floodlights facing the new residential properties + column-mounted baffles to the rear of floodlights nearest to the properties should be considered – and their extra windage taken into account in the column specification.

Additional Requirements

The design proposal should include isolux plots of both the horizontal light levels on the pitches and surrounds and the vertical illuminance levels on the surrounding facades. Bear in mind that the Mixed Use Block to the East rises to four storeys (ie about 10-12m) and the five blocks of Town Houses to the south and west, are three storeys (ie about 8-9m). Calculations of vertical illuminance should be given up to these façade heights, where necessary.

If possible, designs and costings to include an approximate figure for installation. Please provide the name and contact details of a suitable, trusted installer/ contractor so we can obtain a precise installation quotation.

Carl Gardner
CSG Lighting Consultancy Ltd.
24/7/2013

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