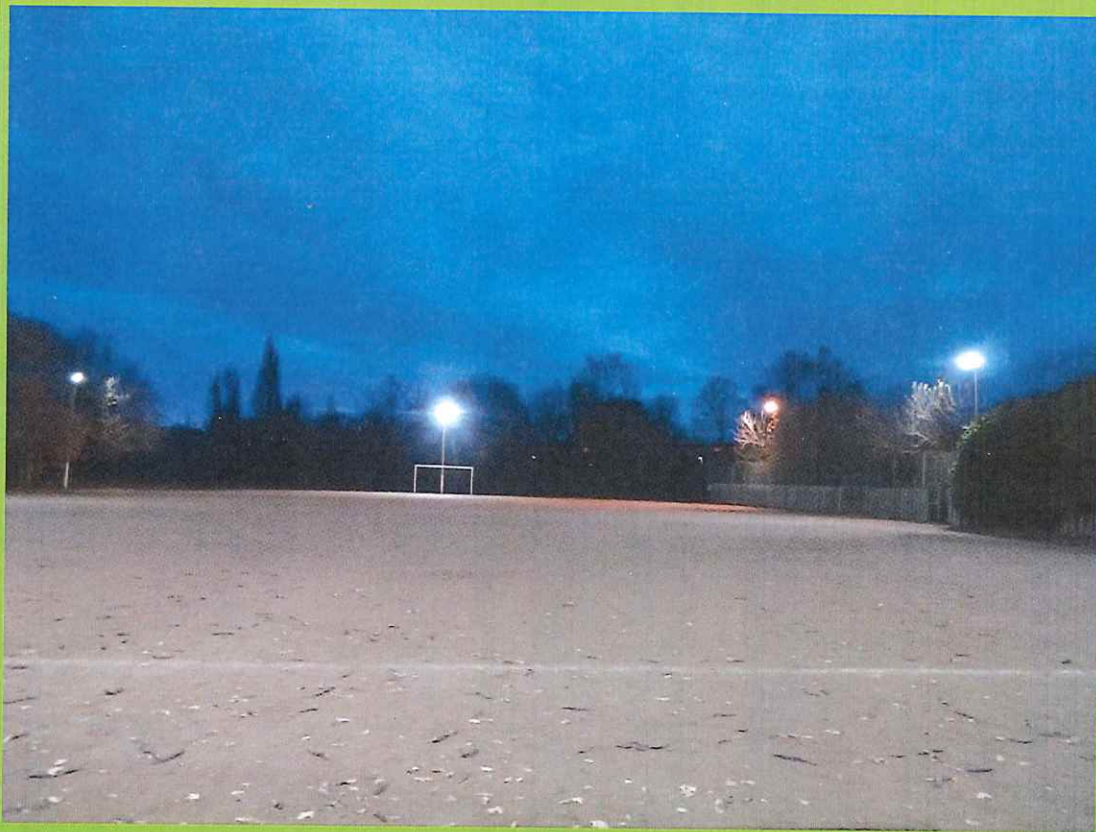


LIGHTING ASSESSMENT ECOLOGY REPORT,  
BALHAM BOXING CLUB,  
CAVENDISH ROAD,  
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## CONTROL SHEET

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Job Title. Lighting assessment report, Balham Boxing Club, SW12 0PP

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Purpose Planning application for floodlighting for external use

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## INTRODUCTION

### Background

- 1.1 Furesfen was asked to undertake an lighting assessment at Balham Boxing Club, Cavendish Road, Balham in respect of proposals for changes to floodlighting. A daytime bat habitat assessment had been undertaken at the site during March 2019 and both reports should be read together.
- 1.2 Bat surveys were not deemed necessary as planning permission was in existence and there was sufficient data regarding the local bat activity. The crux was determining that light spillage would not increase onto areas that bats might be using and light attenuation could be optimised.
- 1.3 A lighting assessment was undertaken in response to comments made at the planning stage with information that had not been available during March 2019. Changes to the light configuration had been made in response to the pre-planning consultation such as -the movement of a lighting column behind the northernmost goal position.

### Proposals

- 1.4 The existing Redgra pitch requires a new hardstanding, now determined as artificial grass. The current metal halide floodlights have a 60-degree tilt and contain an element of UV light, which should no longer be employed, according to Bat Conservation Trust Guidelines.
- 1.5 These will be replaced with LED lighting with no UV component. The Philips Optivision 4000 Kelvin with integral louvres, is a more directional light. Presently, there does not appear to be a suitable lamp for football games at 2700 Kelvin.
- 1.6 The Bat Conservation Trust recommendations for outdoor lighting 2018 do not address the detailed requirements for sports lighting, which must be designed on a case by case basis, depending on the speed of the game and the size of the pitch. This is a health and safety requirement and has a separate British Standard BS12193. Box luminaires (horizontal lighting) are suitable for games which have smaller teams such as tennis.
- 1.7 At a Bats and outdoor lighting symposium convened by BCT and ARUP (May 2019) a representative from Sports Facility Planning and Design Ltd. presented on the best solutions for sports lighting and the key criteria for ecologists, including a requirement for a unity contour plan at the height at which bats were flying (rather relying on ground level plots).
- 1.8 This is the same lighting consultancy that has been engaged by Balham Boxing Club (SFPD Ltd.). A meeting with SFPD Ltd. was convened at the site to view the existing metal halide lights fully



operational. Light contour plans at ground level were supplemented with plans at 4m and 8m at the height that bats are flying.

#### Site Description

- 1.9 The Redgra all weather football pitch to the east of the Childrens Centre at Tooting Bec common. There is a public right of way parallel to railside land at the rear of the pitch at the northern boundary (perceived as a wildlife corridor and the most sensitive area).

#### Aims of Assessment

- 1.10 This report outlines the findings of a walkover undertaken at the site during 5.12.19.
- 1.11 The purpose of this assessment was to: update the existing information; address the planning officers concerns; and record the existing light spillage. The survey was undertaken to ensure that the light spillage outside the pitches decreases, so that there will be reduced impact on nocturnal species and improvements can be optimised.

## METHODOLOGY

- 2.1 A walkover was undertaken at the site with the SFPD lighting consultant and a representative of the club who demonstrated the existing floodlights. The site visit was made between 16.00 – 17.00 hours.
- 2.2 The tilt of the lights and the light spillage, particularly onto the northern boundary were observed. Particular attention was paid at sunset + 45 minutes, which is the optimum period for making these observations.
- 2.3 In London, this is usually the darkest part of the evening (as there is no feedback from skyglow until just after this time depending on the amount of cloud cover).
- 2.4 A light meter was used but there was light spillage from the railway so the readings were discounted.
- 2.5 The surveys were undertaken by A. Fure Class 2 Bat Licence (Natural England licence number 2015-10381-CLS-CLS) a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 2.6 The survey methods were in accordance with The Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines – 3rd Edition* (Collins, 2016), and *The Bat Worker's Manual* (Mitchell-Jones and McLeish, 2004).

## RESULTS

### Desk Study

- 3.1 Survey data records five bat species and these are tabulated in the Bat Habitat Assessment March 2019.
- 3.2 When compared, the contour plans at 4m and 8m for the old metal halide lights and the new LED luminaires, indicated greatly reduced amounts of light spillage to the east and southern areas outside the pitch.

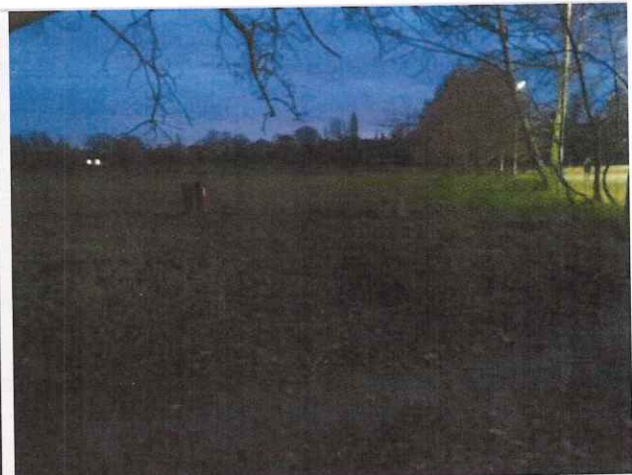
### Light Inspection

- 3.3 The metal halide lights were on a 60-degree tilt. There was one odd sodium light, included in the arrangement.
- 3.4 In order to observe the full lighting effects, the metal halides must be illuminated 30 minutes before observations are made as they take some time to warm up and cannot be illuminated for sometime after being switched off.
- 3.5 There was a marginal amount of light spillage onto the northern boundary (railway corridor). But the amenity grass to the east of the pitches was flooded with light unchecked by vegetation. There was light spill from the rail side land, which was a limitation to measuring light spillage.

Table 2. Photographs – to show light spillage during use of metal halide lights



Photograph 1. Striated path, indicating light spillage at the northern boundary



Photograph 2. Light spillage to the east of the children's centre looking towards Woodfield.

## ASSESSMENT

### Potential impacts

- 4.1 The new contour plan indicates that the proposed scheme will make a marginal improvement to the light spillage at ground level outside the northern boundary (due to the presence of a tree screen that acts as a light shield and spillage from the rail side) \*see note.
- 4.2 The new contour plan shows that there will be a substantial improvement to the light spillage to the east at ground level, which currently spills unchecked (as per photo 2).
- 4.3 The spillage will be reduced further in the new scheme at 4m and 8m in height - the height at which bats are flying - particularly to the east and south of the pitches, where there is an absence of vegetation that might act as a screen.
- 4.4 The LED lights will be more directional on account of their reduced angle and louvres (although they will still attract insects, but not as many as metal halide).
- 4.5 This will reduce glare across the pitch (note the presence of glare from the south-east of Woodfield demonstrated in the photo 2). \*Note: BCT Guidelines attest that the combined effect of offsite lighting should be considered and there are a number of sources including the railway line to the north and the aforementioned glare from offsite lighting.
- 4.6 New hard standing will not be reflective, which could mean reduction in light trespass/reflected light (suggested as 12%).
- 4.7 The LED's have an advantage of being responsive; for use when required. Metal halide luminaires have to warm up and cannot be switched on and off which may lead to periods of lighting an empty pitch, to ensure the longevity of the lamp. This satisfies the Institute of Lighting principle of 'lighting when required'.
- 4.8 The proposals optimise the following:
  - Slightly reduces the small amount of spillage onto the northern boundary;
  - Greatly reduces the unchecked spillage to the east and south;
  - Reduces glare across the pitch in every direction traveling through the wider environment;
  - Removes the need for the continuous illumination of an empty pitch;
  - Reduces reflectivity in the proposed surface;
  - Removing the UV component of the light reduces insect attraction.

## REFERENCES

ARUP 2019 Bats and lighting symposium with Bat Conservation Trust

Fox, H., 2018 Bat Conservation Trust and Institute of Lighting Professionals Lighting Guidance (replaces 2009 Guidance)

Furesfen, 2019 Bat Habitat Assessment Balham Boxing Club

Furesfen, 2018 Woodfield Pavilion survey.

Furesfen, 2016 Tooting Common bat surveys.

Mitchell –Jones A.J. & McLeish A. P. (Ed's). (2004) 'Bat workers Manual' JNCC

SPORTS FACILITY PLANNING AND DESIGN LIMITED December 2019 Design statement