



Kellwood Lighting were tasked with upgrading Bisham Abbey's Indoor Tennis Courts. Bisham Abbey is a national sports centre with world class facilities catering for the country's leading athletes.



Supply and install lighting to meet ATP and Sport England standards.



HAWK-EYE

A system compatible with the facility's Hawk-Eye ball tracking camera system.



A robust solution to minimise maintenance costs and site down time.



Emergency lighting to comply with BS 5266 Part 1.

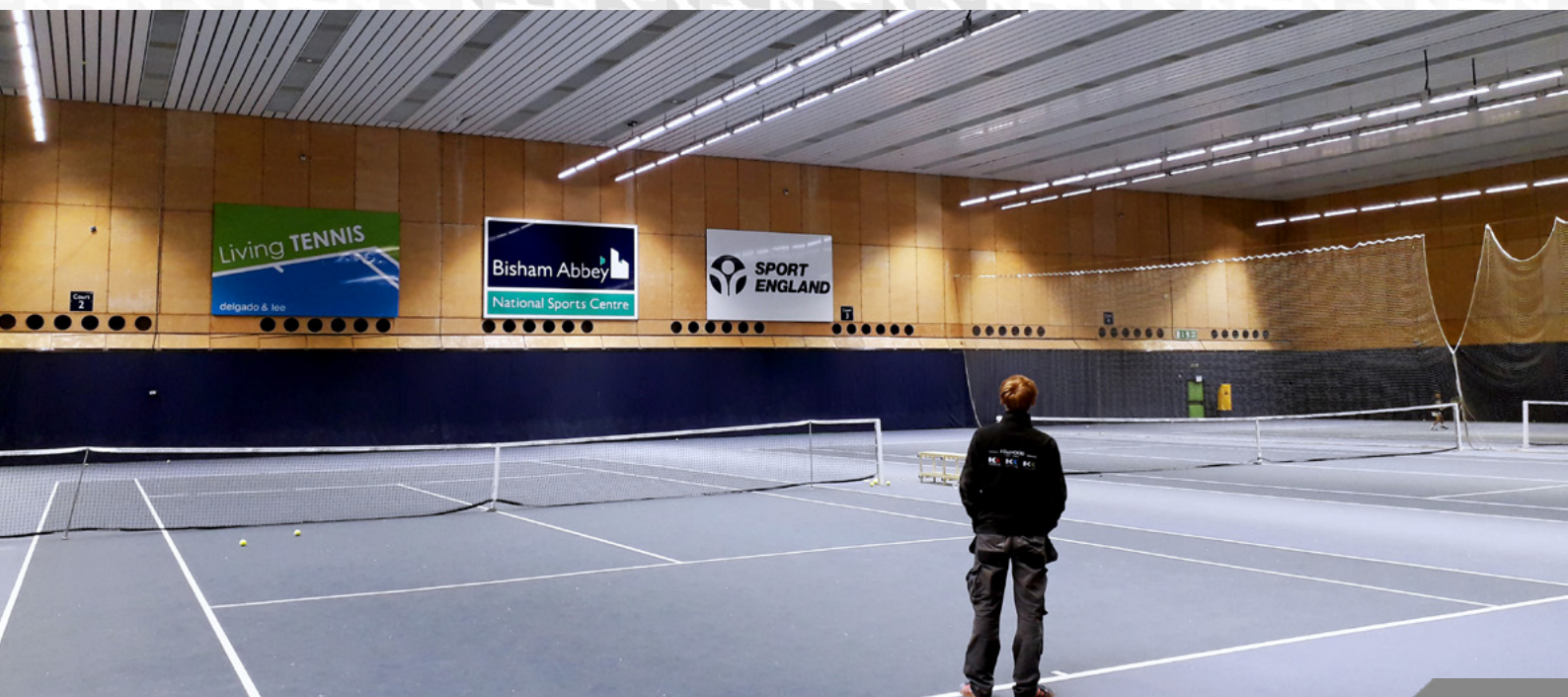
Project Specifications

In this project Kellwood were tasked to meet Class 1 international standards for an indoor sports tennis centre;

- **Horizontal Illuminance of >750 lux**
- **Uniformity of Illuminance >0.7**
- **Glare <50**
- **CRI of >80**
- **CCT of >4000K**

In order to meet the requirements outlined by CIBSE and the LTA, light had to be directed to the appropriate playing areas. Through the use of 60° optics, the light output was directed away from absorbent surfaces (screening and architectural walls) and towards the centre of each court.

Rotating lights in their stainless steel brackets by 15° increased the uniformity on the playing area. CAD simulations demonstrated that this also permitted a glare-free observation area for coaches between courts.



LIGHTING DESIGN AND PRODUCT SPECIFICATION

Kellwood Lighting's designs demonstrated the 140W Drummond 3 Series was the right product for the job:

Lumen Output

Using carefully designed optics and Nichia chips the Drummond 3 series provides up to 138lm/W. This resulted in average lux levels of >1000lux for each court.

Impact Protection

A solid aluminium enclosure and modular design gives the Drummond Series resistance to tennis ball strikes.

Environmental Temperatures, Operating Hours and Lumen Maintenance (TM21 Calculated L90B10>160,000hrs) were assessed to ensure designs included an application-specific Maintenance Factor



Uniformity of Illuminance

To meet Class 1 specifications for indoor courts >0.7 uniformity is required. Uniformity >0.7 throughout the tennis hall was achieved.

Glare

One of the stipulations for this project was to have <50 glare across all courts. This was achieved through using 60° and 90° optics.

Marine Resistant surface-finishes and stainless steel fixings (salt-spray tested in accordance with ISO9227:2012), and an IP67 rating, protects the product *and* the investment



Hawkeye

Our Drummond 3 Series proved to be the best solution. Its integral Philips Xitanium driver provides a stable constant current to the LED array, mitigates flicker, and ensured compatibility with the camera system.

**GAME SET MATCH!
KELLWOOD**