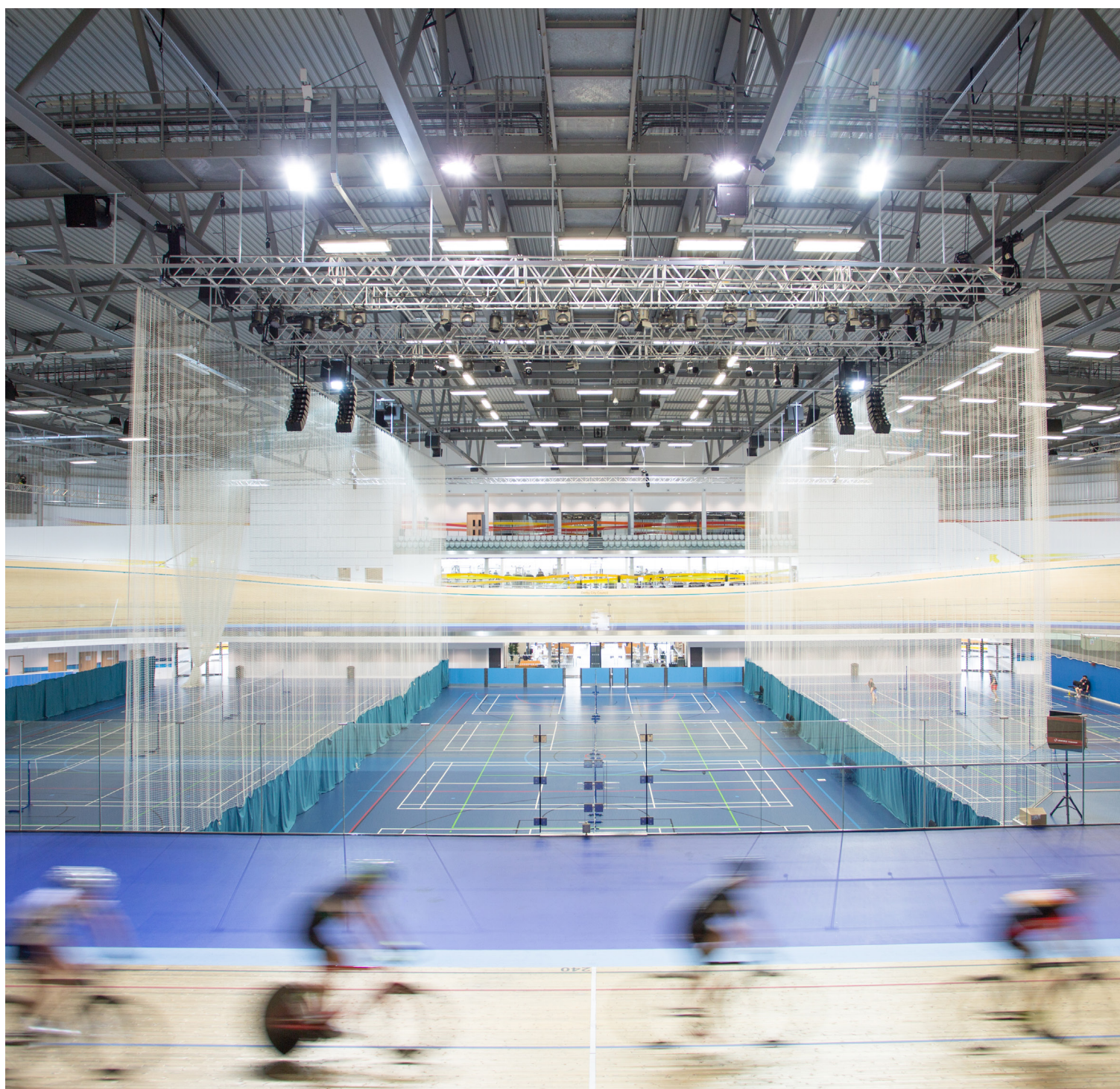


THORN

LIGHTING PEOPLE

Case Study

Derby Arena and Velodrome, UK



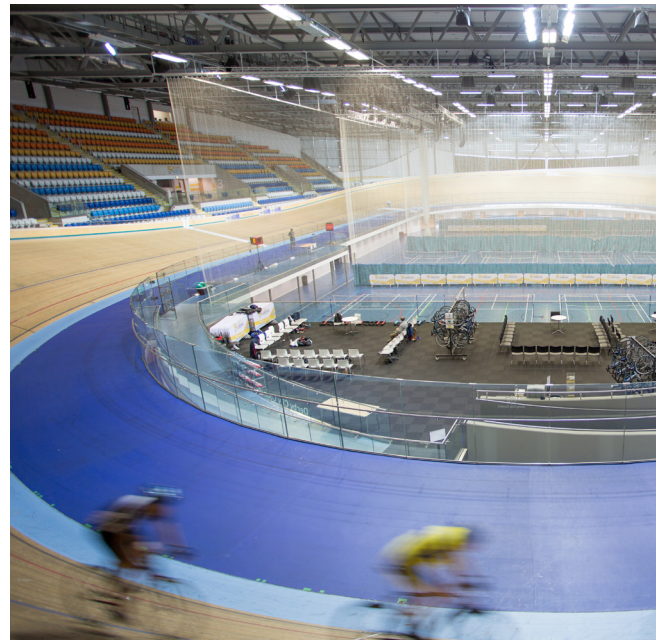
Thorn illuminates new Derby Arena velodrome track and sports area

Background

Opened in 2015, Derby Arena is a state-of-the-art multi-use arena and velodrome. The arena hosts events ranging from family pantomimes to classic car shows while the 250m velodrome track is the Midlands' brand new hub for track cycling.

Derby Arena also benefits from a high specification infield indoor sports area the size of 13 badminton courts, a café, fitness gym, group exercise studios, a spinning studio and meeting and conferencing rooms.

Having successfully worked with Thorn for many years, Derry Building Services once again commissioned Thorn to provide the lighting for the sports areas as well as some internal areas.



Lighting objectives

Derby Arena is inspired by Britain's success at the London 2012 Olympics and has been created to provide a unique Arena to benefit the people of Derby. Compliance with illuminance levels and uniformity over the track and infield areas according to the specification were key objectives. Separate switching levels for the track and multi-use sports areas within the Arena were also important requirements.

Lighting solution

Thorn's Mundial (1KW) and Troika (400W) floodlights illuminate the velodrome track. Mundial is a high power floodlight for sport and large area illumination applications while Troika is an asymmetric 'flat glass' floodlight with four different light distributions for each lamp option and a broad selection of attachments.

Titus Sport, a robust dedicated sports hall luminaire with T16 (T5) fluorescent lamps, illuminates the infield sports area. Thorn luminaires including Impactforce, Pizza and Duoproof illuminate other indoor areas.

Results and benefits

The velodrome track benefits from three switching levels of 600 lux, 300 lux and 100 lux to efficiently meet the lighting requirements for uses ranging from competition to training. The track benefits from the required colour temperature of 5600K, a colour rendering index of 90 and uniformity level of 0.76. All track floodlights are tilted no higher than 65° for good glare control.

With an illuminance level of 500 lux and uniformity ranges from 0.8 to 0.95, the infield area also has separate switching to accommodate the volleyball, basketball and badminton courts. Not only does this save energy by only using the required lighting but it also provides more focus for players and spectators.

The switching arrangement is specifically positioned to accommodate the demands of each field of play and sporting activity, ensuring lighting is appropriate and comfortable for players. This is particularly important for overhead sports such as badminton as overhead lighting would cause glare and discomfort.

Chris Pilkington of Derry Building Services commented 'The scheme was developed in close liaison with Thorn and the whole experience from outset to final commissioning, set up and completion was carried out in a very professional and considered manner. The lighting is extremely well suited to the particular challenges of lighting a modern world class velodrome and sporting facility.'

Key facts

- Thorn floodlights and luminaires used for sports areas as well as general area illumination
- Velodrome track benefits from three light switching levels to accommodate varying uses
- Infield sports area features separate light switching arrangement to meet the specific demands of sports including volleyball, basketball and badminton

Products used



Mundial



Troika



Titus Sport



ImpactForce



Duoproof



Piazza





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