

NATIONAL ICE CENTRE



The National Ice Centre (NIC) in Nottingham is the home of two Olympic-sized ice rinks (60m x 30m). They cater for a wide range of ice pad activities, from elite-level ice-hockey, GB short-track speed-skating, and public recreation.

The public rink's lighting had reached end of life, resulting in excessive maintenance requirements, and high running costs. **Kellwood Lighting** supported the NIC in upgrading the public rink's lighting to a modern, energy-efficient, low-maintenance solution.

OBJECTIVES AND CHALLENGES



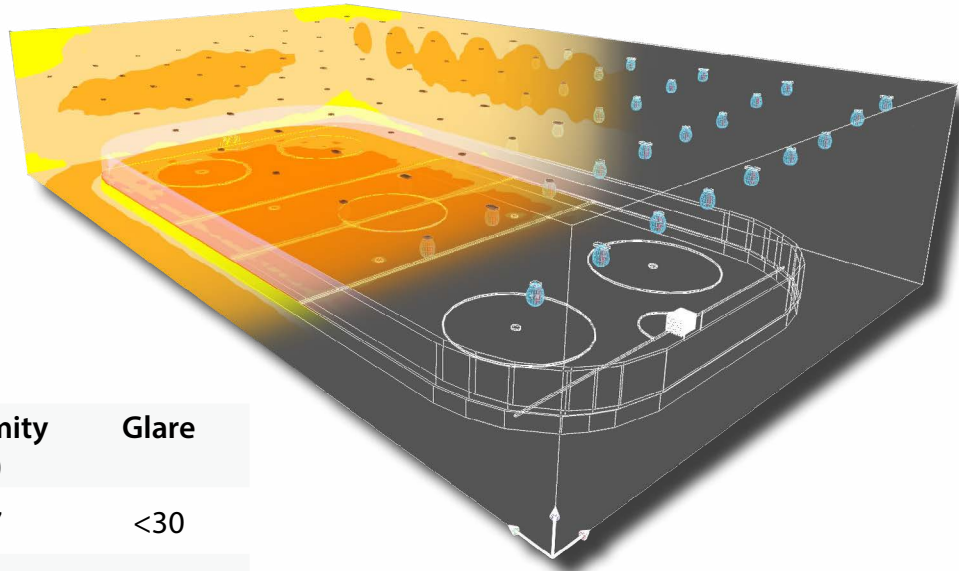
Relatively common and unusual requirements needed to be considered:

- **High Lux Levels** – design and supply a solution to cater for lighting elite-level ice-sport activities.
- **Existing Layout** – use the existing 10 x 9 layout of light fittings to mitigate any re-wiring requirements and minimise installation costs.
- **Unusual Mounting** – the overhead tubular steelwork would not necessarily accommodate standard mounting accessories.
- **Sloped Ceiling** – the sloped ceiling would result in a change in luminaire mounting heights, and therefore present challenges in achieving suitable light uniformity.
- **Impact Resistant** – consideration was required for potential ice hockey puck impact.

DESIGN PROCESS

Consultation with the NIC highlighted that they would prefer to mount lights following the slope of the roof, rather than lowering lights to a common height. Kellwood modelled the ice rink in CAD software.

Simulations concluded that a combination of 150W and 200W Lennox Series high bays would deliver on the lux, uniformity, and glare requirements, while accommodating the 3m height differential between the lower and upper levels (10m and 13m respectively):



	Average Lux Levels (Eav)	Uniformity (U0)	Glare
Target	>750 lux	>0.7	<30
Design Level	>818 lux	>0.716	≤27

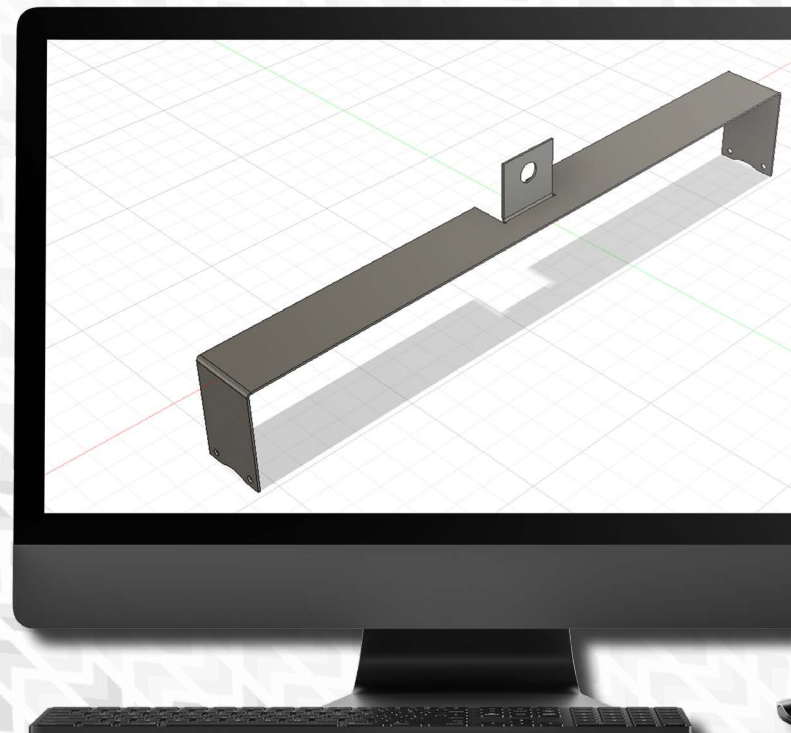
CUSTOMISED BRACKET

Various options were considered for mounting the lights. These including wire or chain suspension around the tubular overhead steelwork or using standard twin surface-mount brackets.

However, it was decided that a custom-made bracket with a single-point fixing to mount into compression clamps used on the original fittings would provide the NEC with best value.

Advantages included:

- Allow fittings to be levelled or tilted
- Ensure rapid installation
- Be non-invasive; no need to drill into existing structural steelwork
- Provide an aesthetic finish compared to wrapping chain or cable around steelwork

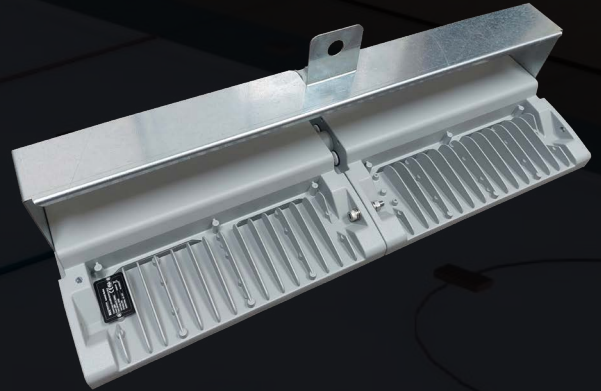


SOLUTION

60pcs 150W + 30pcs 200W Lennox Series High Bays

A 90° Beam Angle offered the optimum balance to meet glare and uniformity requirements.

Supplied IK10 as standard; it was decided that additional wire-guards would over-engineer impact-resistance requirements.



≥63%
Forecast Energy Savings

