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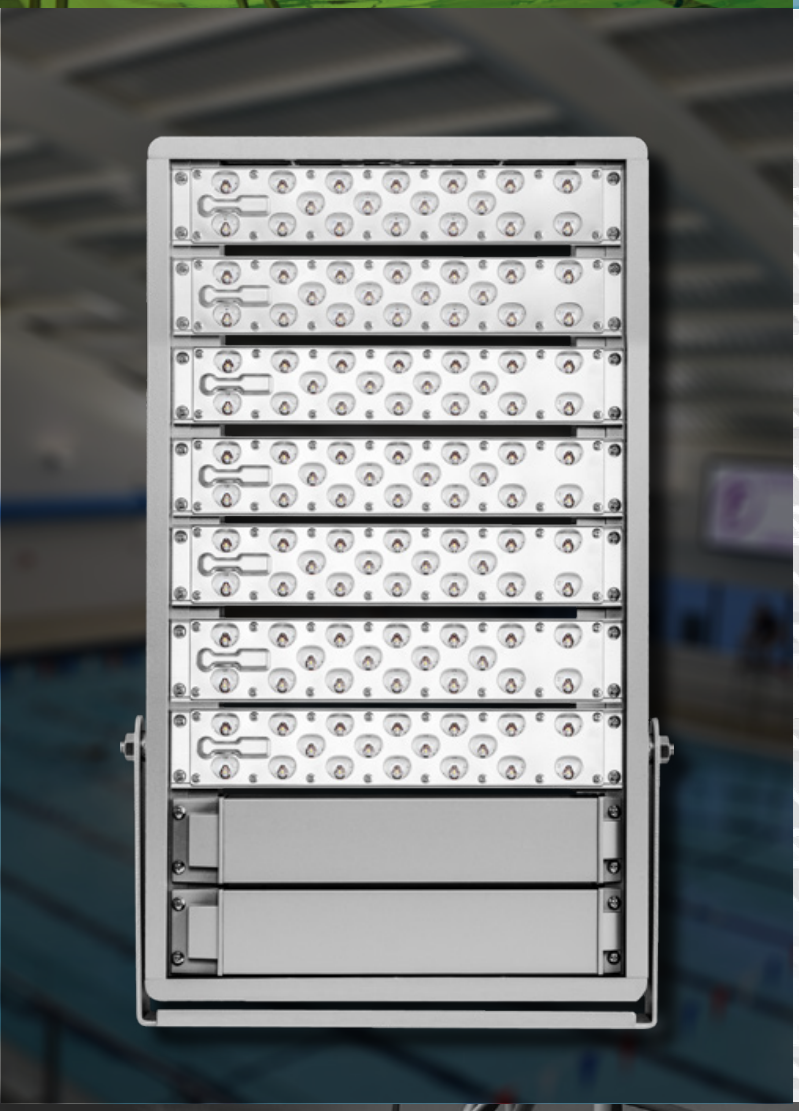
Matlock Swimming Pool
PLS



Matlock Case Study:

ARC Leisure Centre Matlock's premium sport and leisure facilities include a modern multi-pool swimming complex. For those wishing to swim for fun, fitness or at competition level (the pool regularly hosts national-level water polo), Matlock's eight lane adjustable depth pool can cater for all.

However, ARC Leisure wanted to upgrade to energy-efficent lighting. **Kellwood Lighting,** in collaboration with PLS Lighting, designed and installed the final solution. Multiple designs were modelled, reviewed and refined to ensure the optimum performance, without compromising on the existing standards.

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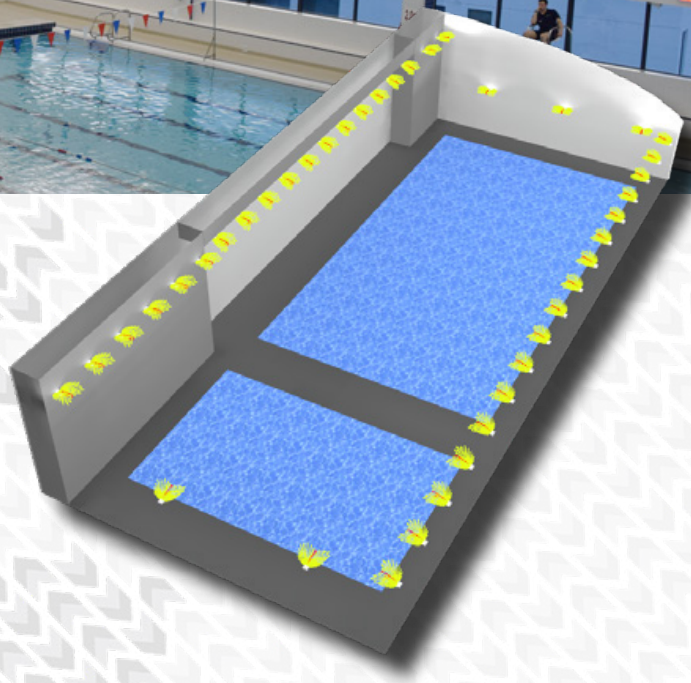

Lighting Design:

To ensure suitable lighting levels for both the national water polo league (500 Lux) and recreational swimming (300 Lux) - Kellwood designed an up-lighting scheme to provide illumination to the pool below. Using the 310W McFarlane 3B Series with a Type 4S optic, light was directed towards the centre of the ceiling to be reflected downwards to minimise glare experienced by pool users and lifeguards.

Design Features

- 500 lux for swimming competitions
- Dimmable lighting to 300 lux for general use and to reduce energy costs
- Uniformity of 0.7
- DALI Dimming LED Drivers
- Pool Grade (Corrosion Resistant) Products

Due to the layout of the building, some of the units were required to be mounted in a recessed viewing area. This meant that these units had to be tilted by 30° (opposed to the default 10°) so that the light would be reach the desired destination.

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Lighting Controls:

Significant potential for **additional energy savings** via lighting controls was available. Lights did not need to be running at 100% power because:

1. High lux levels were only required during competitions
2. During the day, natural light contribution was high, through a fully glazed wall

The Challenge:

ARC Leisure wanted to benefit from dimmable lights but needed a **non-invasive control solution**; the installation had to be carried out during the night during a brief 2 week window, and controls were not to be positioned pool-side. Installation of new low-voltage control lines was not an option.

The Solution:

Kellwood Lighting provided a cost-effective wireless control package. A bluetooth mesh network ensured that all lights could be individually controlled *or* grouped. A wireless six-button scene switch was located outside the pool area, programmed to achieve different desired lux levels. Finally, photocells could assess ambient lux levels, and regulate the light output accordingly. This was simple to install commission, and maintain, ensuring the client's brief was met.

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Final Controls Solution

- 43No. Bluetooth wireless nodes, controlling individual lights
- Programmeded scenes from 500lux to OFF (in 100lux steps) via a 6-button wireless switch
- Daylight Harvesting - lights automatically dimming when ambient light contribution through the partially glazed walls is high (via photocells c/w wireless bluetooth nodes)
- Remote application via tablet and 4G data connection
- A non-invasive solution - installed in one week, without any alterations to wiring

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