



Aquatic Centre at Olympic Park, Munich: A sporting schedule with medal-worthy results

LED relighting of the listed sports venue with
spotlights from ERCO

Project data:

Project:
Aquatic Centre at Olympic Park, Munich

Client:
Stadtwerke München GmbH

Architecture:
Behnisch & Partner, Stuttgart (Architect)
Frei Otto (Roof construction)
Planplus GmbH Architects, Munich
(refurbishment, renovation, property)

Construction management:
ap architektur und projekte gmbh, Munich

Lighting design:
3lpi lichtplaner + beratende ingenieure
partnerschaftsgesellschaft mbh, Munich
Beatrice Seidt, Florian Zach

Electrical engineering:
Ingenieurbüro Riemhofer, Munich
Paul and Michael Riemhofer, Munich

Photography: David Schreyer

The conditions present in swimming pools – humidity, heat, chlorine vapour – are truly an endurance test. There are only a few luminaires that can permanently withstand these conditions, while remaining efficient and offering high visual comfort. For around two decades, ERCO Focalflood floodlights with HIT lamps reliably served the listed Aquatic Centre building. Now, a new lighting installation with [Kona](#) LED spotlights is stepping up to perform even better.

In 1972, Munich served as the venue for the 20th Summer Olympics. The design by Otl Aicher and the architecture by Frei Otto and Günther Behnisch emphasised lightness, sympathy and transparency. Since 1998, the sports facilities in the Olympic Park have been recognised as part of the canonised architectural heritage of modernism. Six years later, however, the Aquatic Centre at the Olympic Park under the iconic tent roof required an update. The original lighting system had reached the end of its life cycle. The expansive, suspended grid structure for the spotlights was reduced to a single, longitudinal lighting bar during refurbishment. In 2004, ERCO supplied state-of-the-art spotlights equipped with high-pressure metal halide

(HIT) lamps. A manufacturer inspired by Otl Aicher, the designer of the Munich Games, was a perfect fit.

"Installing luminaires on the asymmetrical lighting bridge above the pool was necessary but challenging for achieving uniform lighting".

Beatrice Seidt, 3lpi

Munich's only public 50-metre indoor pool is intensively used for recreational swimming, training and competitions in various water sports. The renovated lighting system served excellently for years, so its replacement during the 2016 remodelling was initially not planned. However, rapid advancements in LED

technology convinced lighting designers to include the swimming pool in the refurbishment plan. This forward-looking decision addressed increased maintenance needs and the challenge of sourcing replacement parts for the aging system.

Thanks to LED: Less maintenance, more efficiency

Relighting promised a number of advantages, above all low maintenance and higher energy efficiency. LED spotlights can be dimmed and integrated into digital building control systems, unlike the previous system. Finding LED spotlights that delivered sufficient lumen output while maintaining visual comfort and robustness was challenging. After a large number of trials and samples, the planners finally found what they were looking for at ERCO: After a routine lumen update to the [Kona](#) spotlight family, driven by advancements in LED technology, their most powerful models delivered sufficient luminous flux to meet the requirements of the Aquatic Centre at the Olympic Park.

Visual comfort is crucial

Visual comfort was crucial for the project, especially given the off-centre lighting platform 16 metres above the pool. [Kona](#) floodlights, with their glare protection, proved ideal for this set-up. "Asymmetrical illumination of the water surface was the main challenge", reported lighting designer Beatrice Seidt from Munich's 3lpi office. "Our solution, developed through numerous tests and calculations, works with multiple layers of light", Seidt explained. "We use wide-beam floodlights for the area directly beneath the bridge and narrow-beam floodlights for areas farther away." The arrangement perpendicular to the swimming lanes and the recessed position of the LED modules in the Kona floodlight housings protect swimmers from glare. "The new LED spotlights are dimmable via [DALI](#), allowing staff or trainers to adjust individual lighting groups if needed, should athletes feel dazzled", added her colleague and partner at 3lpi, Florian Zach. The new concept easily meets the client's requirement for a minimum of 200 lux with good uniformity and, as Zach put it, "delivers a simply beautiful light image – bright, crisp and brilliant."

"The design process took years, and the requirements changed several times, but the ERCO sales team remained committed throughout", noted Seidt.

Beatrice Seidt, 3lpi

Installing the system was by no means trivial. While the total connected load is now lower due to the highly efficient LED technology, it is distributed across 194 luminaires compared to just 100 floodlights previously. To stay on schedule during the on-going operations of the refurbishment project, the electrical designers and installers adopted unconventional methods. "ERCO equipped the luminaires with pre-assembled connectors, allowing us to pre-assemble the entire system on the ground, test it and label the components", explained Michael Riemhofer, the electrical designer and expert who had already designed the existing system. The individual components were then transported piece by piece onto the lighting bridge by industrial climbers during the Aquatic Centre's annual three-week maintenance period.

"ERCO maintained excellent glare control – just as they did 20 years ago."

Michael Riemhofer, electrical designer

A basic condition of the new lighting design was to ensure camera-compatible light

The Aquatic Centre at the Olympic Park has frequently hosted media events and TV shows. While TV producers often bring additional lighting for such events, the [Kona](#) spotlights inherently meet the lighting requirements for photos and videos during training and competitions. "The standard, flicker-free constant-current dimming gave ERCO products an edge over the competition", confirmed Florian Zach. The good condition of the previous housings also supported the decision to stick with ERCO. "There are few environments with harsher atmospheric conditions than swimming pools, except perhaps heavy industry", explained the lighting designer, who has extensive experience in pool lighting. Chlorine, moisture and fluctuating high temperatures take a toll on materials and technology. To counteract these effects, ERCO uses specialised powder coatings, stainless steel mounting parts and advanced seals to protect against corrosion and moisture. Designers and operators can therefore trust that the new lighting system in the Aquatic Centre at the Olympic Park will provide optimal visibility and a pleasant atmosphere under the iconic tent roof for years to come.

Luminaires used in the project



Kona spotlight

About ERCO

ERCO is an international specialist for high-quality and digital architectural lighting. The family-owned company, founded in 1934, operates globally in 55 countries with independent sales organisations and partners.

ERCO understands light as the fourth dimension of architecture – and thus as an integral part of sustainable building. Light is the contribution to making society and architecture better and, at the same time, preserving our environment. ERCO Greenology® – the corporate strategy for sustainable lighting – combines ecological responsibility with technological expertise.

At the light factory in Lüdenscheid, Germany, ERCO develops, designs and manufactures

luminaires with a focus on photometric optics, electronics and sustainable design. The lighting tools are developed in close collaboration with architects, lighting designers and electrical designers. They are used primarily in the following applications: Work and Culture, Community and Public/Outdoor, Contemplation, Living, Shop and Hospitality. ERCO lighting experts support designers worldwide in transforming their projects into reality with highly precise, efficient and sustainable lighting solutions.

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