

**PHILIPS**

Arena & Sports

Public lighting



Allianz  Arena

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Case study

FC Bayern Munich  
kicked off the season with  
**play of light**



▶ Watch the video

FC Bayern Munich kicked off the last season in spectacular style: Philips, the global leader in lighting, and the German soccer champions presented a new LED facade lighting at the Allianz. The entire innovative Philips system can be controlled digitally and is capable of reproducing 16 million colors. This makes Allianz Arena, the ‘Star of the South’, Europe’s largest and Germany’s first stadium to feature dynamic lighting across its entire facade.

## Background

It is more than just a soccer stadium, a lot more. The Allianz Arena is the home of champions FC Bayern Munich, it is one of the most famous venues in the world, and they welcome enthusiastically every year millions of visitors and fans around the globe. This is not least due to its fascinating architecture. The building is surrounded by the largest membrane shell in the world and hardly any of the diamond-shaped membrane pads has the same shape.

## The challenge

To illuminate this facade in a uniform and visually attractive way, is a challenge. Also for the operating budget and the sustainability objectives of the Allianz Arena. Was there already a lighting system on the market that could digitally produce and control dynamic lighting effects under these conditions? With low power consumption and low maintenance?



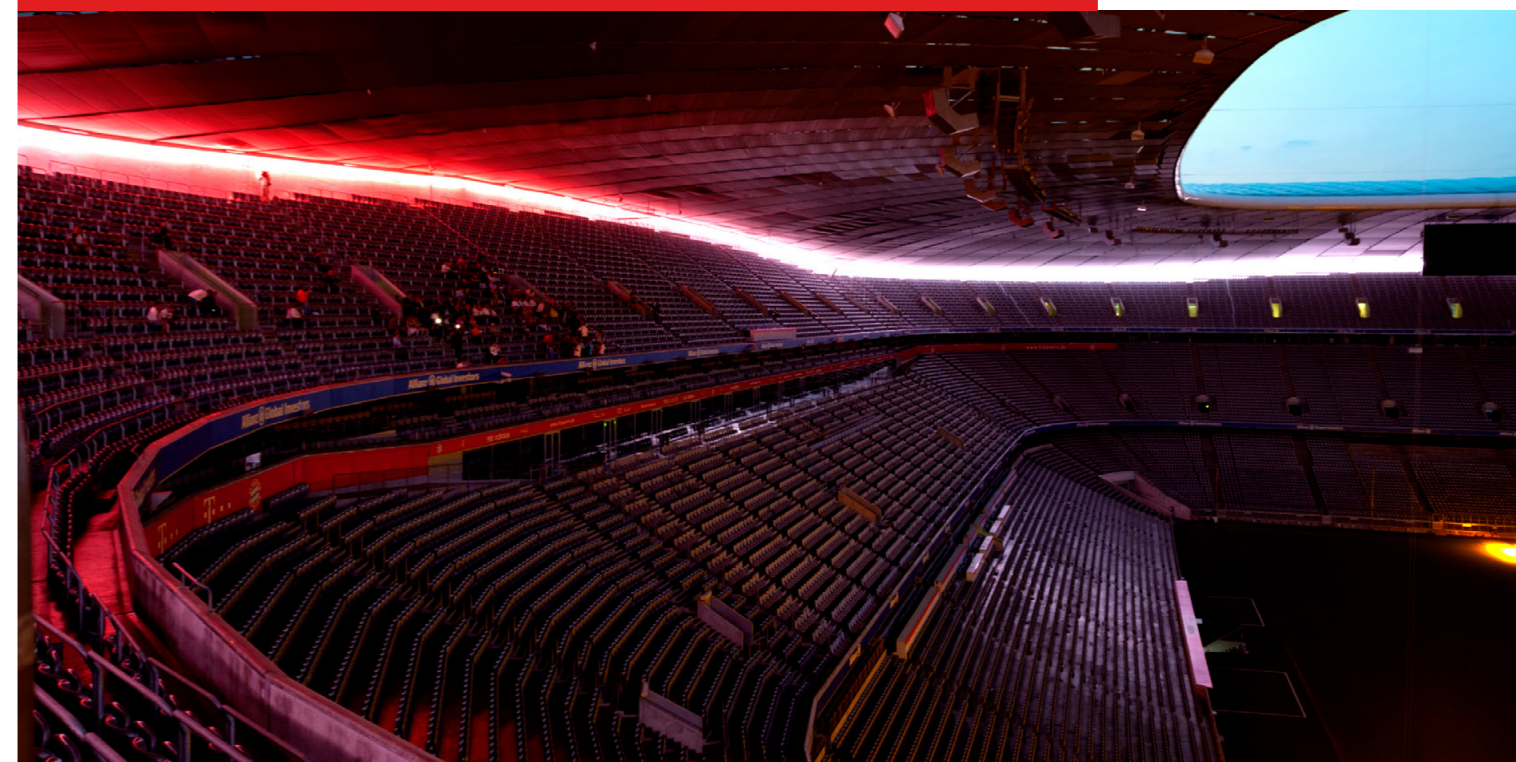
“

The new lighting from Philips conveys already at first sight outside the Allianz Arena- **full of emotion and dynamics of the game.**”

Karl-Heinz Rummenigge  
CEO of FC Bayern Munich



Sports



## The project

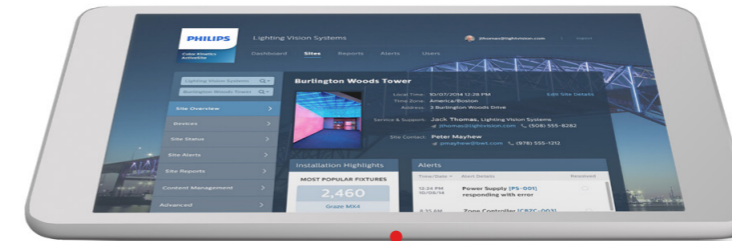
The previous lighting was based on analog technology with conventional fluorescent lamps. Philips replaced this solution with a complete digital system comprising digital LED lighting connected to Philips ActiveSite connected lighting system with cloud-hosted software and services.

More than 300,000 LED lights – over an impressive surface area of 26,000 square meters – make the stadium facade’s inflatable outer membrane shine brilliantly. Compared to the previous system, the new technology saves more than 60 percent on electricity and approximately 362 tons of CO<sub>2</sub> per year.

“In addition to the facade, in conjunction with Philips we are also highlighting the bowl inside the Allianz

Arena,” explains Karl-Heinz Rummenigge, CEO of FC Bayern Munich. “The bowl lighting effects in the roof inside the stadium above the stands is a new feature and a taste of what’s happening. This lighting will accompany the action on the pitch in a dynamic way, for example by creating a Mexican wave or goal celebration effects in red and white.”

“The new lighting will serve to intensify the emotional experience in the Allianz Arena before, during and after the match. Fans and television viewers will experience unique lighting effects,” says Philips Lighting Managing Director Roger Karner. “The system is fully digital, featuring intelligent controls, and it has been tailored specifically to the unique architecture of the Allianz Arena. We have drawn on Philips’ knowhow from three continents to develop this unique system.”



ActiveSite  
connected  
lighting  
system

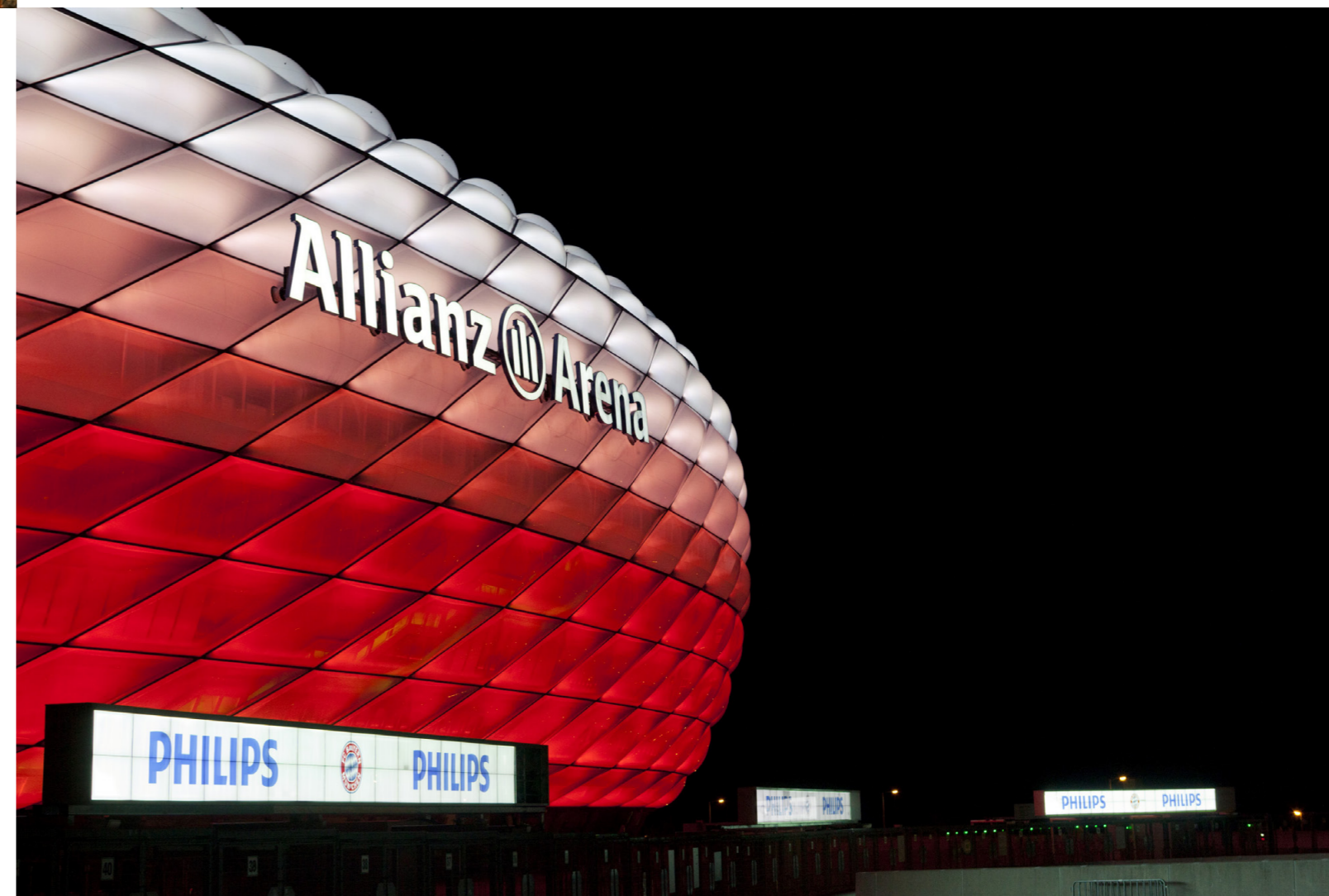


ColorGraz  
MX4  
Powercore

## Subtle color dynamics

On evenings when there are no matches taking place the plan is to create elegant and subtle color-changing effects in the form of waves and clouds as well as horizontal and vertical sequences, always in the FC Bayern Munich colors. The lighting concepts have been developed by world-renowned architects Herzog & de Meuron. They emphasize the unique nature of this luminous installation that will enhance the urban landscape. The movement and color changes are extremely delicate and subtle, and are only really noticeable if you stop and look a little longer.

It is also possible to create lighting effects for special events, for example featuring iconic brands, different colors, nuances and dynamics. And from now on all it takes to start them is the touch of a fingertip. Complex supplementary installations are now a thing of the past. The spectrum of possible lighting effects ranges from illumination of the Arena in green to mark St. Patrick's Day to multicolored visualizations, such as for the Audi Cup, to special concepts for international league tournaments. On days when there are home and away matches, the facade will shine with renewed brilliance in red or white.



## Allianz Arena

Munich  
Germany

“

The new Philips lighting enables us to **make a clear statement about the place that the German soccer champions call home**, both for the local fans and for international competitions between stadiums and clubs.”

Jurgen Muth  
CEO Allianz Arena FC

## Philips Lifecycle and Professional Services

“We have signed a Lifecycle Services Premium+ contract with Philips. With the Premium+ package we guarantee optimal performance of the lighting installation with our business needs, ensuring day-to-day efficiency and uptime. With the Premium+ service package we are assured of expedited response time, data analytics and consultancy, system optimization and a fully customized solution. Thanks to the Lifecycle Services we can optimize the performances and meet our business objectives.

Philips, with partner Alexander Weckmer, also provided Professional Services such as project management, auditing, system design and commissioned the complete lighting system. Also our Allianz staff was trained.”

## The benefits:

In terms of sustainability and efficiency, the new Philips system represents a technological revolution. The LEDs used save more than 60% on electricity and some 362 tons of CO<sub>2</sub>, compared with the previous technology based on fluorescent lamps. The maintenance and operating costs are also lower: the LEDs have an average lifetime of 80,000 operating hours, which reduces the need for maintenance and is equivalent to the duration of about 53,000 league matches. The system is extremely robust, even under extreme weather conditions with temperatures as low as -50°C. In addition, the cloud-based Philips ActiveSite platform enables optimum operation. ActiveSite delivers detailed reports in real time, facilitates maintenance and simplifies content management. In this respect too, the Allianz Arena is at the forefront of technology.



Energy savings of 60% and carbon footprint reduction of 362 tons a year



Maintenance costs reduction equal to 53,000 matches



Enabling light shows and branding



ActiveSite instant remote control of color-scenes and diagnostics



Professional services for peace of mind and Lifecycle services to protect your investment over lifetime

“The new Philips lighting enables us to make a clear statement about the place that the German soccer champions call home, both for the local fans and for international competitions between stadiums and clubs,” says Jürgen Muth, CEO Allianz Arena Munich Stadium GmbH.

## Tailor-made lighting system

In October 2014 the go-ahead was given for work to commence on site. Mountaineers climbed the façade to install over 6,500 compact ColorGraze fixtures – sometimes at vertiginous

heights of up to 25 meters. In total more than 45 tons of material were used, including more than 7.5 kilometers of the linear high-tech fixtures, several hundred data enablers and over 5,000 meters of cable for the digital control. The entire installation involved not only electrical contractors and engineers, but also lighting designers as well as hardware and software designers from Philips in the USA. The team developed special installation brackets and optics to enable the fixtures to be aligned individually so that the light from the LEDs would shine uniformly on the inflatable domed outer membrane, which varies slightly in shape.





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