



Royal Concert Hall, Nottingham to save over £16,000 a year with LED lighting solution¹



The background

E.ON is working with the Royal Concert Hall in Nottingham and Nottingham City Council to design and install an LED lighting solution throughout the auditorium that will help the venue to save over £16,000 a year in energy bills and significantly reduce maintenance costs.

This is an important project for this and other entertainment venues in the UK because, until recently, it was widely believed that LED lighting could not be dimmed smoothly to blackout as required during performances, and venues were therefore missing out on the potential cost and carbon savings associated with LED lighting.

This project forms part of a wider RE:FIT programme with Nottingham City Council to install a range of energy conservation measures in this and seven other public buildings across the City.

The benefits

- £16,000 per year reduction in energy costs / 192,000 kWh reduction in energy consumption¹
- Significant reduction in maintenance costs due to longer lamp life of LEDs (50,000 hours)
- 104 tonnes of carbon reduced per year²
- Five year warranty as standard
- All lights are controllable to allow dimming to 0.25% of output
- Replaces obsolete Incandescent lamp technology

“We worked with E.ON to reach a solution to maintain warm, incandescent light that is crucial for stage productions where atmosphere is paramount. The infrastructure allows the existing lighting locations and control systems to be retained but now provides a control mechanism to dim down to 0.25%, which is more efficient and necessary for the diverse aesthetics required for the different staging productions we put on at the Royal Concert Hall.”

Dave Guy
Technical Director
Royal Concert Hall,
Nottingham

Case study



The project

E.ON designed a lighting solution to replace 60 x 300W PAR56 and 458 x 75W R75 incandescent light fittings in the auditorium with energy efficient, low wattage and long lasting LED luminaires that we demonstrated can be dimmed smoothly to blackout as required by theatres during performances.

E.ON went to great efforts, working with manufacturer, Projection Lighting, and installer, DES Electrical, to develop a lighting scheme that exactly matched the criteria of the theatre in terms of colour temperature and rendering; tone; quality and dimming. The result is a solution that Technical Director, Dave Guy, is more than happy with.

The reduction in maintenance costs alone is worthy of the change. The noise vibration from concerts in the auditorium had an adverse effect on the weaker incandescent lighting filaments requiring the replacement of over 700 lamps per year. Since the new LED light fittings have been installed, no lamps have yet been replaced.

With EU regulation set to phase out incandescent lighting in the near future, this solution has come at the right time for the entertainment industry and will help them to save energy costs and carbon through simply changing the lighting.

Other energy conservation measures being installed by E.ON at the Royal Concert Hall and seven other public buildings in Nottingham include upgrades to the Air Handling Equipment and Building Management Systems that will generate further energy and carbon savings and improve comfort conditions for the many people that occupy and visit these buildings each year.

The Technology

AlphaLED is a market leading brand of LED fixtures. Successfully launched in 2008, the corrective cold phosphor technology delivers an unrivalled performance and is the only LED product that not only guarantees a minimum of five years life but also the quantity and quality of the light during this period.



Benefits and key features³

- 85% energy saving compared to 75W Incandescent luminaires.
- No noticeable colour shift and a maximum of 5% lumen loss across the installation.
- Up to 120 lumens per watt luminaire efficiency.
- Beam Angle from 10° to 50°.
- Available in Colour Temperatures from 2700 to 4000K
- Contains no UV or IR component.

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¹ Based on an average electricity price of 8.43p/kWh

² Based on total energy reduction per year of 192,048 kWh and carbon emissions factor of 0.542kg/CO₂/kWh

³ Source: <http://www.alphaled.co.uk/downloads/catalogue.pdf>