The Lowry

Large-scale changes across the multi-space theatre venue

At a glance

Location
Salford

Tags
LEDS
Dimmers
Energy Savings

The Lowry was built in 2000, as a landmark building within the redevelopment of Salford Quays. It is distinguishable by its highly sculptural form and stainless steel and glass cladding. The building contains three theatres (the Lyric, the Quays and the Aldridge Studio. It also has 2 galleries, conference facilities as well as a gift shop, bar and restaurant facilities. The Lowry has 3 theatre spaces: Lyric 1763 capacity; Quays 466; Studio150.

The Lowry is committed to using visual and performing arts to enrich people's lives. We present audiences with a diverse programme of theatre, opera, musicals, dance, music, comedy and visual art as well as events and activities to expand the horizons of audiences and artists alike.
At the heart of our work is a commitment to our local communities and young people. Tapping into the work on our stages and in our galleries, we offer thousands of free creative participation opportunities each year. We are passionate about nurturing talent, developing creative professionals of the future and raising aspirations.

Issues identified and ambition of works

In our mid-scale Quays Theatre, the auditorium and stage working lights are still incandescent light fittings. We identified a need to update these, enabling us to move to more energy efficient and sustainable lighting. We also wanted to update the infrastructure to allow us to replace the tungsten stage lighting with LED alternatives.

The first phase of this upgrade was to replace the Strand LD90 dimmers with new ETC Sensor 3 Dimmers fitted with the latest ThruPower Modules. This change allows us to use LED fixtures on every circuit which previously were limited to Tungsten only and to fulfil our desire to switch completely to LED. By using the ThruPower Module we are also fully prepared for instances where design requires the use of legacy Tungsten fixtures which we have the flexibility to deliver in any location by changing a simple setting in the dimmer.

The project delivers three improvements:

- A modernised lighting solution
- Improved environmental performance
- Reduced financial cost

We completed the first stage of the project in October 2023 and are now able to use LED fixtures, reducing our energy consumption and carbon footprint and to future proof the building. Our plan is to replace and update our stock over time as well as support incoming companies who still require incandescent light fittings.

The second stage of the project is to upgrade the house and working lights. The current house lights are still the original ones installed when the building was built and consist of a mixture of 50 watt downlights, 400 watt large downlights with complimentary fixtures highlighting architectural features.

The upgrade changes the fitting to LED and delivers a significant saving on the energy consumption. We appointed PTB (Push the Button) to undertake the full project. We have a long-standing relationship with them. They are very easy to work with, operate in a fair and transparent way, and have always delivered on their promises.

The upgrade replaces all of the downlights with new fixtures that deliver a boost in light output which we can either use to increase the light level for cleaners or reduce down to match what it was with tungsten to deliver the house lighting state for performances. After evaluating the potential driver solution we elected to use GDS DriveHub which will offer us seamless dimming to absolute zero and a 96% power efficiency. The installation will deliver all of the benefits of LED and savings associated with it without compromising the look and feel of the venue.

At the outset we commissioned a 'potential energy savings analysis', which highlighted that by changing the house lights alone we would make a saving of 31.15kwh. The current load is 34.65kwh. The new load will be 3.5kwh.

The analysis also showed potential reduction of CO2 emissions, from 91.63 tonnes per annum and the new emissions would be 9.25 tonnes per annum making a saving of 82.38 tonnes per annum.

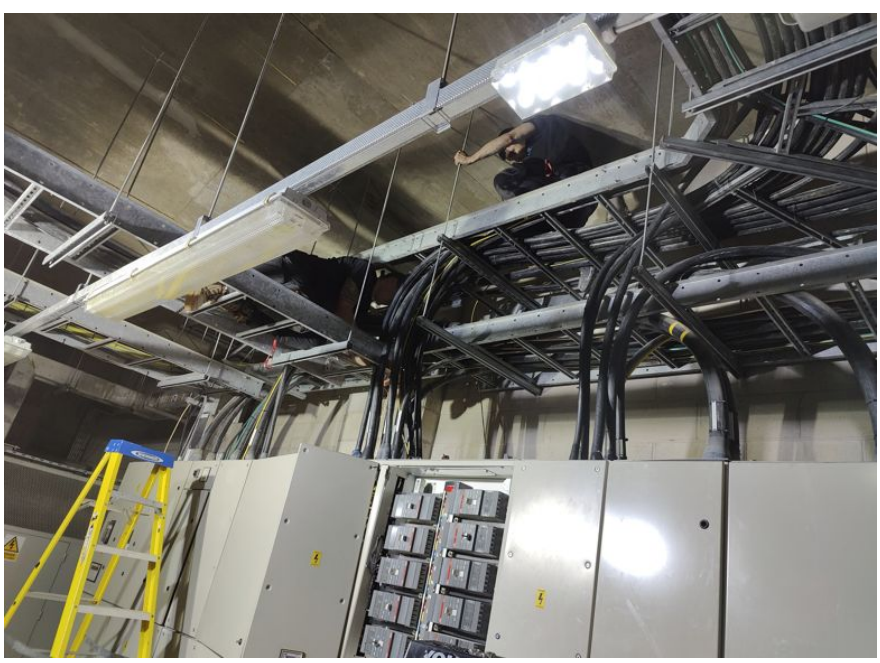
Please see Appendix 1 – Potential Energy Savings Analysis.

Alongside the works to the houselights, we also identified the need to replace the fluorescent working light battens with new LED alternatives. This work will be taking place at the same time as the houselights installation this summer and offers a further saving in both energy and maintenance with the consumption of each working light being approximately halved.

Actual works undertaken

05/09/23 – 13/10/23

Dimmers removed and replaced.
Cost includes ETC sensor Rack3, Labour, Removal cost
Total: £281,715.00



95% of original dimmers were recycled.

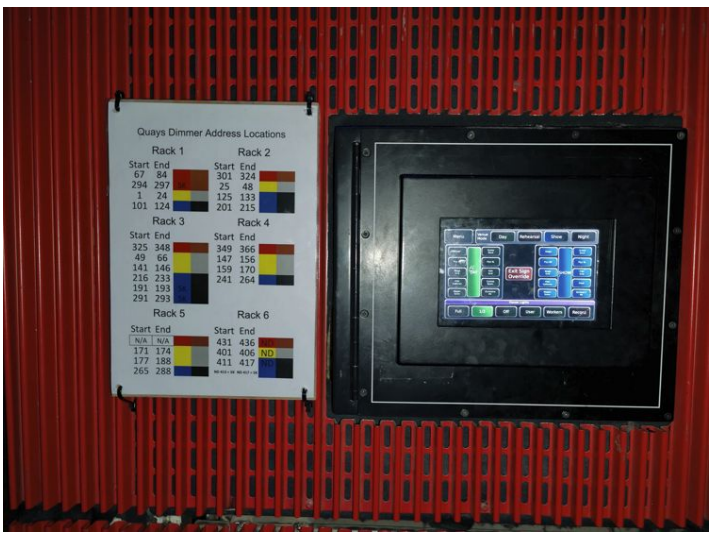
If you would like to see a breakdown of the dimmer costs, please get in touch with the Theatre Green Book.

02/04/24

There are a number of architectural designed fittings in the Quays house lights. So, we needed to remove one of them to see if we could retro fit it with LED's, and to get a full costing for all the architectural house lights.

01/08/24

House Lights to be removed and replaced. Installing LED's and retro fitting all architectural lighting:
Cost include House lights and work light fixtures, control equipment, cable and containment, drawings, installation and engineering
Total: £375,000



Dimmer costs: £281,715
House Lights cost: £375,000

Total Cost of project: £656,715

Outcome of works

Through the potential energy savings analysis, we are expecting the energy savings to be approximately 68% over a 15 year period. This should save us in the region of **£55,438.75** per year and pay for itself in five and half years, in energy saving alone.

We were able to put the learnings from the experience of similar work in the Lyric Theatre done several years ago into the planning of this project and from the knowledge acquired we are extremely confident in the estimated readings and are what we should expect as a return.

What advice would you give for similar projects?

Appoint contractor who you feel comfortable working with, and who you know will deliver the results.

Test financial assumptions, and keep testing, to ensure they are deliverable.

Ensuring sufficient planning time is built in. This will more than pay for itself during the delivery and install phase.

Content provided by

Tony Smith
Commercial Director, The Lowry

Image References

1: Dimmers removed
2: Sensor3 Dimmers Installed
3: Architectural Lights
4: Architectural Light fitting removal for retro fittings
5: House Light control system Paradigm

Appendix 1 - Potential Energy Savings Analysis

Potential Energy Saving Analysis
Lowry - Quays Theatre

Energy Saving Summary - Lowry - Quays Theatre

Current installation (re-lamp costs)	KW Load	Total Costs
Tungsten	34.65	£11,674.00

LED proposed installation (purchase costs)	KW Load	Total Costs
LED	3.50	£375,000.00

Usage	Hours Usage	Days Per Year
	14 Day 2 Night	363

Total Budget Project Costs	£375,000.00

Estimated Years from Installation - Payback	5.00
Based on Electricity Costs (per KWh) - Day	0.25
Based on Electricity Costs (per KWh) - Night	0.185

Total C02 Saving in Tonnes	82.39
Based On CO2 (per KWh Tonnes)	0.52037