

Plymouth Theatre Royal

Using a venue space upgrade as an opportunity to improve sustainability

At a glance

Location

Plymouth, Devon

Tags

Inserting sustainability into building upgrades

Seating

LEDs

BMS

Paper

On-site maintenance

Overview

Theatre Royal Plymouth (TRP) has a history dating back to 1758, but the current building was designed in 1977 and opened in 1982. It's the largest regional producing theatre in the UK, with three performance spaces: The Lyric (1300 seats), The Drum (200 seats), and The Lab (50 seats). The building was designed by Peter Moro and is Grade II listed. Recently the team at the Theatre Royal has undertaken a series of sustainable interventions ranging from seating refurbishment to replacement of lighting, and changes to its heating systems. It has also looked at how its buildings team is structured and ways that it can help positively influence staff behaviour to benefit energy savings.

Seating

The original theatre seating in the Lyric had come from Spain. To source replacement seating from the original manufacturer was seen as costly and required long shipment times. Importing from abroad also did not fit with the theatre's sustainability goals. TRP instead sourced local suppliers who could individually make the chair parts (upholstery and metal brackets etc), so that seating can be refurbished or made locally at a cost estimate of approximately £50 each.



Solar panels on the roof



Estates team nominated for sustainable cleaning award

Lighting

TRP has been systematically replacing all the old tungsten lighting across its estate with LED. By installing LED lights throughout the building, the energy bill spent on this has reduced by half. TRP aims to continue to reduce the amount of energy used through lighting by adding light sensors to the corridors at the Lyric.

Building Management Systems (BMS)

TRP worked to create a Schneider-installed Buildings Management System which uses a pictorial interface, rather than technical terminology. The change to a more visual interface has enabled the wider building management team to easily engage with and use the system. This means that simple changes can be made before needing to engage an engineer with specific technical knowledge.

Data Collection

Monitoring the data of energy/water usage is key to the team at TRP. It allows them to identify areas of power wastage and where energy savings can be made. It also allows them to make regular reports to the Chief Operating Officer and the Board, who can see the impact of the work instigated by the team, and who can in turn report to organisations and funders who may require data such as Julie's Bicycle and Arts Council England. To make it easier to understand usage the team tried to find ways to clearly describe the data, for example giving the water usage in equivalent terms of number of bathtubs filled, or energy use in the number of houses powered. This has proven to be an effective and powerful way to portray the data.

Key Achievements and Outcomes

District Heat Exchange

Resulting in reduced gas usage

Lighting

Lighting energy bill halved through changes to LEDs

In-house team

Maintenance issues are quickly identified and fixed

The data collection also means that energy spikes can be spotted and challenged. The team conducts 'dark night walkarounds' where they can identify what equipment, lighting etc. has been left on and understand what changes can be made to give an accurate potential overnight minimum energy usage. Information collected on the dark night exercise is also fed-back to the staff team to help remind everyone how simple actions such as turning off computers can help reduce energy usage.

Heating

TRP is fortunate to be able to benefit through Plymouth County Council's District Heat Exchange which has enabled the theatre to reduce its gas usage. A total change-over from the current gas boilers is being sensitively phased. TRP is currently taking precautions to protect the performances at the theatre by having a backup gas system for energy use should the heat exchanger installed fail. Over time it will have a sense of how reliable the new system is and, once reassured, plans to remove the old gas system.

Other Sustainable Changes

TRP has a team of in-house engineers and maintenance support (electricians, carpenters etc), which is good for local employment. The theatre benefits as it means overheads are reduced and things get fixed as soon as an issue is flagged by a staff member or the BMS system. The team also work hard on regular maintenance work, for example, to repair pipes, fix leaks and clear drains which in turn has led to a noticeable reduction in water usage.

Contracts have gone completely digital saving 500 sheets of paper per year, and the box office have moved to e-tickets saving 600 reams of paper per year.

TRP was also [shortlisted](#) for the National Cleaning Excellence Awards for their commitment to sustainability.

Theatre Modifications and Resilience

The Drum is a flexible studio space; however, it wasn't optimal for how TRP wanted to use it. When the time came for a refurbishment of the studio the team decided to take the opportunity to look at ways to improve its operational viability, including increasing seating numbers, repositioning the sound desk and providing better flexibility of the space. This they achieved through the careful insertion of an infill piece which has allowed the inclusion of a raised platform (to be used as a royal box or sound desk).

At the lower level, some internal, non-loadbearing walls were redesigned so they can be removed to provide greater adaptability of the space. Bleacher seating has been installed allowing seats to be folded away providing a flat floor area. This has allowed for much more flexible use of the theatre, with different seating configurations, including cabaret style, and has created a simple method for storing the chairs when not in use.

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Theatre Green Book