

Oxford Playhouse

Highlighting the power of small changes

At a glance

Location
Oxford

Tags
BMS

Lagging
Education
Small changes
Air curtain

Overview

Oxford Playhouse offered to trail the first version of the Theatre Green Book Building Survey Tool to help them focus on key sustainable building improvements for the theatre. While not all measures have been possible to implement immediately, the theatre has been able to undertake a range of small improvements that have had a measurable and beneficial impact on energy usage. Oxford Playhouse was built in 1938 and is Grade II* listed.

What work was done

Building Fabric:

Using funding from a Theatre Trust grant, the team at Oxford Playhouse worked across the building on small improvements such as fixing lagging to pipes, adding some secondary glazing to all windows that required it (the frontage is listed so the windows there required a more sympathetic seal), and adding extra sealant to infrequently opened windows.

Recently they have also added air curtains at the entrance to the building to heat the large entrance space more efficiently.

Services:

It was known that the air-con chiller needed replacing and the boilers were old, so it felt like the perfect time to find an all-in-one solution. Unfortunately, the cost of an air-source heat pump was far more expensive than replacing both units individually and unaffordable at this time. However, the team at Oxford Playhouse were able to implement other changes that have had a significant impact.

The team worked to improve their BMS set up, ensuring it was turning off heating/aircon etc overnight. The air conditioner chiller was updated and connected to the BMS. Despite some teething problems (an initial fault with the electricity supply) it now uses less energy than previously.

Note: The installation of large services kit such as chiller units can be challenging to install – at the Playhouse replacing the chiller required an hour of road-closure to crane the new unit in.

By the Pantomime at Christmas 2023, 95% of the building's lights were LED, and all stage lighting was LED, which led to a he saving in energy use.

Education:

The team also pushed an educational approach, reminding staff to turn off computers overnight, close doors etc, and working out which offices were often forgetting to do these small behaviour changes so further reminders could be given.

Impact

Comparing the energy savings through the new BMS for the winter of 2019/20 with the same period of 22/23 show that the work to better insulate the glazing and changes to lighting have had a significant and beneficial impact. The Oxford Playhouse saw a saving of c20% on the heating and c16% on electricity.

Future Works

The team is currently trying to find funding to create a sedum roof on the front canopy, which wouldn't have an energy impact but would help create a pleasant, biodiverse space in the middle of the town. The team is also looking into possible sites for beehives.

It is anticipated that the current boilers will last another 5-10 years, and the hope is that by then the heat pump price will have fallen and therefore will become a viable option.

Advice for others

Consider working bottom up, what are the little things you can do? Especially in old buildings, even small improvements can add up to big savings, both in energy use and costs. A good maintenance programme is also key to this, keeping equipment maintained often saves energy, time and money in the long run.

Also to reach out to experts, even if you don't know how a particular thing works, there will be engineers and advisors who do.

Key Achievements and Outcomes

Energy Saving

Saving of about 20% on heating energy from 19/20 to 22/23

Electricity savings

Also, a 16% saving on electricity usage

Education approach

Success with staff education as well as building improvements

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