



## **Greening Dunamaisé**

### ***Where we began***

Dunamaisé Arts Centre is a multidisciplinary venue set in the heart of Portlaoise. Refurbished between 1997 and 1999, the venue is set in the footprint of the old county gaol, with the older parts of the building dating back to the 1780s. The building has gone through many iterations, from County Gaol to Bridewell, County Library, Records Office, and now the centre for the arts it is today.

The venue opened in May 1999 and for 10 years we thought little about the operational impact on the environment and our carbon footprint but in 2009, with the assistance of EcoMerit, we started on the journey of “greening” the Dunamaisé. This didn’t come without its challenges; being in a heritage building in the centre of the town comes with its benefits and disadvantages. The stonework on the facade of the building is some of the most impressive in the state, but that same stonework and mortar make insulation a challenge. Our location in the town makes the centre a hub for the community, but it also limits the adaptations we can make to the building.

Looking towards the green future of Dunamaisé in 2009, we had a lot to learn and a lot to do.

### ***How we got started***

The challenge of making your operations more environmentally friendly may seem like an insurmountable one, and it is easy to give up and give in to climate despair. However, big changes can be made with small actions, as we have demonstrated in our process of greening Dunamaisé Arts Centre.

Initially, the process was very simple. We set about a programme of measurement and recording (M&R), logging electricity use, water use, waste (domestic and hazardous) and heating. Alongside this we recorded the weekly use of the building, noting opening hours, events and rehearsals. The measurements were taken weekly (and in some instances, daily) to begin with to give us a picture of our usage per event, in order to give us a metric to measure how and when spikes in our consumption happened.

Once we had built up this picture of our existing practices, the next step was to create an improvement plan. This is an annual exercise in which we look at where best to reduce our energy

usage, and to work out what changes we can afford to make. There are items that were on our first plan that have only just happened and some that have yet to happen, 15 years on. This is for various reasons, including the cost, availability of new technologies, or limitations of the building. However, in making realistic, tailored annual plans we have been able to make significant changes with the resources available to us.

### ***What we did***

Our first projects were simple and cost little or nothing, and we worked through these cost negative solutions before we turned our attention to projects that would require funding. Looking at our electricity use, my initial thoughts, and it is a common misconception, were that stage lighting would be the largest draw on our energy usage. However, our measurement exercise showed that, while the potential capacity was enormous, the actual usage only counted for 5-7% of our overall electricity use. Most of the electricity usage was on domestic fittings in the public areas of the building. We then assessed which areas were “over lit”, and reduced the amount of lamps used in fittings, taking twin fluorescents down to single tubes, which not only reduced our consumption but also reduced our hazardous waste (CFLs contain small amounts of mercury, where LEDs do not). We addressed our water use by reducing the capacity of the toilet cisterns by adding 1L bottles filled with water into them. We tackled local draughts around doors and windows and reduced the hours that the boilers in the building were on, changing from auto to manual settings.

Once we had made these changes, we moved on to those that would require funding to carry out. Over the years we have accessed funds through SEAI, the Department of Arts (in its various guises and series of initials) and Laois County Council. With this funding we were able to make key structural investments in the building that have improved our environmental impact. Firstly we tackled all the domestic lighting ridding ourselves of all CFL and Fluorescent tubes replacing them with LED lamps. We had the duct work on the Air Handling system insulated, as much of this was uninsulated at the time of installation, having been installed at a time when climate change was not front and centre in most people’s concerns. We replaced the main access doors to the building with wooden framed doors which gave a better weather seal than the original glass doors. At that time we also had glass installed in an architectural void between floors and installed a wall in the gallery to separate it from the bar. This allowed us more control of specific heating zones.

Our next large scale project was to change the heating source from diesel to natural gas. Whilst doing this we upgraded the building management system (BMS) and separated the domestic hot water from the main heating system to allow us to have hot water in the warmer months without the need for the main boiler to be on. We did investigate biomass and other forms of heating, but due to the landlocked location of Dunamais Arts Centre, and the storage and waste product involved in biomass at the time, we had to rule this solution out on practical grounds. Alongside this large scale project, we continued making smaller changes, such as having bespoke insulation jackets made for difficult to insulate items such as pumps and valves and fitting sensors to lights where appropriate.

Finally, after we had made as much progress as possible in reducing the overall consumption of the building, we tackled the stage lighting. This work is ongoing, and as technology changes we have taken specific fixtures out of the rig and replaced them with LED units on a phased basis. We began with what I refer to as “the big hitters”, Parcans and Flood lights. These lanterns are used mainly for music gigs and musicals, and commonly have 1kW or 1.2kW lamps in them. We could have been using 48 of these in most shows, with up to half of them lit at any one time. These were replaced with 15 LED units, providing more colour options with the same brightness and cover, but with a total potential energy draw of 2.4kW as opposed to the 52.8kW potential of the old fixtures. Continuing this process with other lanterns has so far reduced the potential of our stage lighting from 83kW to 5.2kW. While this saving is, on paper, enormous it has to be taken in the context of theatrical use accounting for only 5% of our total energy use, and general building use accounting for 95%, meaning that while it is a very positive move, we are only talking about a very small reduction of power consumption in the larger scheme of things.

### ***What effect it has had***

Overall, our power consumption has been slashed drastically since this project began, taking us from a BER of E2 to B1 with a reduction in electricity use from a peak figure in 2011 of 142,000kWh down to 51,190kWh in 2022, a reduction in heating consumption from 295,000kWh in 2010 to a current average of 170,000kWh and a reduction in water use of 75%. While we have invested heavily in energy efficiency, the savings notably outweigh the spend. Had we not reduced our electricity usage our current bills would be in excess of €50k per annum, while our actual spend on electricity in 2023 was under €15k.

Over the past 10 years, the cumulative effect of both small and large-scale changes in the way we run the venue has made Dunamais Arts Centre a leading example of the potential for environmentally sustainable practices in the arts. We have shared our learning with venues across

the country, and are keen to inspire others to make similar changes in their buildings. Though we have already made significant progress in our environmental journey, we continue to assess our climate impact and will continue to adapt our building and practices to be as sustainable as possible, safeguarding the future one small action at a time.

