

Floral Pavilion Theatre is a new and exciting multi functional development in New Brighton, Wallasey. The new 5000+ m² theatre incorporates an 800 person auditorium and conferencing facilities for the surrounding community. With a great heritage, Floral Pavilion has been built to modern standards but in keeping with original theatre which opened in 1913.

When we were approached to provide the mechanical and electrical services design, it was not only clear that a sustainable solution were required, but attention to detail and future proofing the building were just as critical. With such a scheme we knew that the building would consume large amounts of energy and passing the building regulations would be no mean feat. To assess the energy loads for the building and to evaluate how we should service the building, we created a thermal model representing various design conditions in order to select one which would pass Part L2A. The scheme we selected included biomass. This would be our primary heating source, powering 20% of the buildings heating and hot water load.

Once the design basis had been thought through and decided we also had analyse other specific areas, in particular areas with high cooling loads. The auditorium and upper foyer were our next challenge. Rather than sizing a chiller to account for both areas heat gains, a simpler method was used. We knew cooling both areas simultaneously would be pointless as the occupants would be either in the foyer or auditorium so we sized the chiller to cope with the demands of the auditorium knowing it had the highest heat gain. With some simple controls we could distribute the cooling from one area to another when a performance was about to begin or end. This cut the cooling energy demand by 30%.

Throughout the scheme high efficiency compact fluorescent light fittings were installed aswell as lighting controls package, this reduced the incoming electrical energy load required to power the building.

For us however the real success of the building is the finish and feel, particularly the auditorium and panoramic lounge. When designing the scheme we worked closely with Ken Martin from K.E Martin Architects, making sure each part of the design was as he envisaged. When we first looked at the project we knew the auditorium was going to be a real challenge, we had to distribute 8000litres of air a second into the room and remove it without impeding not only on the sound level requirements, but keeping the perfectly formed dome shaped ceiling. If we were to disrupt this area too much we would have ruined the acoustics and aesthetics of the main theatre. We had many ideas on what would be the most effective and maintenance free solution to ventilate such a space. It was decided to build a total of 19 jet nozzles into a bulkhead behind the lighting gantry across the top of the dome, still maintaining its sphere shape but allowing us to throw air across the auditorium.

The combination of simple service design and the inclusion of high efficiency equipment has meant Floral Pavilion will set a new standard in theatres across the country. The services only played one part in a building which can only be described as a 'work of art.'

Written by Richard Gordon Jan09