

# Arts & Leisure Case Study

## Horsham Arts Centre

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Two Sussex arts centres are among the first to experience the benefits of Trend's new IQ3xcite controller. By using it as the basis for the building management system at Horsham's newly refurbished arts and entertainment complex, controls specialists Powell System Engineering (PSE) Ltd found that installation was simplified and control panel size appreciably reduced. Fifteen miles away, at the Chequer Mead centre in East Grinstead, the IQ3xcite's Ethernet connectivity and built-in web server are allowing building conditions to be monitored and adjusted from the office IT network, without using special software.

Horsham Arts Centre – now re-named 'The Capitol' – has undergone a £5.5million refurbishment and expansion. Existing facilities have been much improved and new ones created, including a second cinema and a large glass-walled foyer that greatly extends the main entrance. The HVAC services are almost all new, with most areas now being fully air-conditioned. Virtually all of the plant, including boilers, chillers, humidifiers, air handling units and trench heating, is controlled and monitored by the Trend BMS. In the centre's cinemas and 423-seat theatre, it matches the fresh air supply with ventilation demand on the basis of CO2 levels, thereby preventing unnecessary use of energy.



The system's control and monitoring duties are carried out by five IQ3xcites, all of which have had their points count extended through the addition of input/output modules. In one case, ten modules of various types have been attached (via a simple bus), taking the controller's points total to 96. The use of add-on i/o has allowed each of the controllers to be exactly tailored to its particular combination of tasks.

Because the IQ3xcite and i/o modules are designed to be DIN-rail mounted and are configured with their inputs generally at the top and outputs at the bottom, installation and cable management proved very straightforward. Moreover, the controller's small size, coupled with its modular i/o and simple wiring requirements, have resulted in control panels that PSE estimates are 20% smaller than they would otherwise have been.

A Trend 963 client/server supervisor package is the main user interface. This provides system access for the centre's technical manager, as well as allowing remote management and interrogation, via modem router, from Horsham Council's technical services department and also from the home of its building services manager (enabling him to investigate any plant problems that occur outside normal hours).

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At East Grinstead's Chequer Mead Arts Centre and Theatre there is no proprietary supervisor software. The centre's management is able to monitor temperature levels, adjust control settings and switch on plant from the office PCs, using Internet Explorer. This has been made possible by the fact that both the IQ3xcite network and the office IT system use the medium of Ethernet/TCP/IP, which has allowed them to be connected together and access to be given to the web server in each controller.

Chequer Mead's heating and ventilation plant is controlled by three IQ3xcites. These have replaced the original controls that were installed when the centre was opened in 1996. One effect of the change has been a noticeable improvement in comfort conditions. This is because the Trend IQs implement a more sophisticated control strategy. For instance, the 340-seat theatre used to be treated as a single space for heating/cooling control purposes. Now, the diffusers that supply air to the circle and stalls are regulated separately.

The theatre air handling unit's supply and extract fans have been fitted with Trend NX variable speed drives, which are controlled by one of the IQs. Consequently, fan speed can be reduced – and with it fan noise – a facility that is used during performances that require it to be particularly quiet. Previously, the fans had to be switched off completely, which naturally led to less comfortable conditions. The extract fan also operates at a lower speed when a show involves the use of theatrical smoke.

The theatre's IQ3xcite has three i/o modules, giving it a total of 40 points. On the IQ controlling the gallery and restaurant AHU, two modules have been used.

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The logo for Trend Control Systems Ltd, featuring the word "TREND" in a bold, orange, sans-serif font.