



**Room Automation: BG Controls achieves the balance between lower energy costs and happy cinema goers**

Since its formation in 2003, Vue Entertainment has built a network of 63 modern multiplex cinemas throughout the UK. With 607 screens and 134,908 seats, Vue is the largest operator of stadia seated multiplex cinemas in the country, attracting 32 million customers to its cinemas every year. For the past five years BG Controls has been installing and monitoring the building controls at 42 Vue cinemas across the country.

Each cinema boasts modern stadium seating, state-of-the-art projection and audiovisual technologies to create the best cinematic experience for its customers. Heating, ventilation and air-conditioning also play a key role in delivering a comfortable and enjoyable environment for visitors.

A sophisticated, BACnet™ based, automated building controls system delivers optimum comfort levels. In addition, to ensure that maximum energy and cost savings are also achieved, every screen at each cinema is automatically controlled as defined by the changing film schedules.

These sites operate using an integrated system, which is based on open protocol, native BACnet™ technology. The most recent site installations operate on equipment provided by world leading developer and manufacturer, Delta Controls. An Ethernet ready building controller connects each on-site system to multiple sub controllers within the screens and public areas. Not only do Delta Controls' building controllers exceed the requirements laid down by the BACnet™ standard, but the routing and BBMD capabilities are ideally suited for complex BACnet/IP networking applications such as this.

By using BACnet™ protocols over a corporate Wide Area Network (WAN), on standard IT equipment, BG Controls can connect to and remotely monitor each Vue site from its central service bureau. This operates from 8am to 11pm, 364 days per year, allowing comprehensive room automation as well as remote diagnostics and service by trained BG Controls engineers to each of the 42 sites.

Temperatures are monitored and controlled to a setpoint within tolerance. The sites are also automatically contacted at least once a day to ensure the performance of boilers and chillers.

In addition, the remote monitoring facility enables engineers to identify problematic areas and inform area managers before any disruption is caused to cinema visitors. This proactive service is made possible by site alarms, which are immediately transmitted to the remote service bureau for verification and analysis.

Adjusting building controls in accordance with fluctuating occupancy levels at each cinema is key to limiting energy consumption. In order to facilitate this, BG Controls receives a weekly 'Occupancy Table' for each cinema, which lists the screen times for the coming week. This enables Bureau technicians to programme the building controls for every screen and public area within each cinema. As a result, valuable energy is only being used when necessary and not wasted on unoccupied space.

Energy is also conserved via optimum start / stop strategies along with 'midday pause' control, which uses the inertia of the building fabric to contain the warmth.

Factoring weekly screen times, so boilers and chillers are only used when required, has resulted in a significant reduction in energy consumption.

Close control of the local environment within each room ensures that cinema goers can enjoy the experience in comfort, regardless of whether the performance is a sell out or of interest to a select few. This is of vital importance to Vue Cinemas as refunds are sometimes demanded in cases where the screening room has either been too warm or too cool.

As Bureau Manager Marc Harrison says, "Our cinema clients typically receive a financial return of two to four times their annual investment with us, which is above and beyond a simple automated solution. This equates to a minimum of 10% in energy savings. Above all, we maintain visitor comfort levels. No complaints, no request for refunds from cinema goers and an enhanced brand image for our client."