



## City Cruise Terminal, Southampton, Hampshire

**Customer issue** - Cruise Terminal buildings are similar to airport departure lounges except they are only active while a cruise liner is present, the rest of the time it remains dormant. This means that the building only needs to be heated and lit at certain times when a Cruise Liner is docked. Manual control of the heating and lighting results in high energy use because it was not always switched off after use. The terminal building is long to match the size of the ship and has different lighting and heating circuits distributed throughout the building.

**Requirements** - To facilitate control and management ABP wanted a low cost solution that gave them automatic control of the heating and lighting together with a centralised control point, that could also monitor essential services within the port. This would remove the problem staff forgetting to switch off lights and heating thus providing an energy saving.

**Solution** - A traditional BMS controller would require a high level point to point or parallel wiring cost, therefore a bus based system was chosen.

The Dupline two wire fieldbus system offers free topology and runs on practically any 2 core cable. Long distances of up to 10km are possible without the need for repeaters. In addition to this many of the I/O modules are bus powered thus removing the need for local power.

It was decided to fit a ring of cable around the building and tee off to local distribution boards, as well as other locations where I/O was needed. Future expansion is possible by simply adding another I/O device and adding the address.

**Achieved benefits:**

- Simple 2 wire system that reduced installation cost
- Higher level of comfort for customers using the terminal building
- Full control from one central location
- Reduced energy consumption by using time scheduling
- Future expansion possible due to bus concept





## Grange Hotels

**Customer issue** - The five-star properties in the Grange Hotels Group wanted an automation system in every room that would not only ensure convenience and comfort for guests, but would also contribute toward cost savings and a reduction in carbon footprint.

**Solution** – develop a fully integrated control system – a BH8-CTRLX-230 smart-house controller is at the core of M-Solutions system which sits on a dedicated network in each room or suite, in order to control and monitor the lighting, heating and air conditioning, together with full integration of the entertainment and security system.

The smart-house Dupline controller in each room is programmed to send hourly updated to the Web service ensuring comprehensive dashboard reporting and efficient Management.

The distributed architecture means that the lighting control is not dependent on external servers. Any problems are easily contained in the room's autonomous network which ensures multiple rooms are not affected.

Public areas of the hotel such as lobbies and dining areas are also easily managed with dedicated tablets running a bespoke applications.

**Achieved benefits** -

- Installation and wiring costs are dramatically reduced
- Unintrusive maintenance
- A reduction in energy usage and carbon footprint
- Superb luxury guest experience
- Seamless integration with hotel's management system



## NYSE Euronext, London

**Customer issue** - NYSE Euronext needed to install an automated lighting control system in their new 14,500m<sup>2</sup> Data Centre. The challenge was to find an easy to maintain lighting control system that could allow automatic operation together with manual override where required.

Many areas needed to be controlled including the data centre zone, stores area and corridors. The system needed to balance artificial with natural light, and switch off lights in areas when nobody was there.

**The Solution** - The Carlo Gavazzi Dupline Fieldbus system of I/O modules meant that lighting panels could be constructed and fitted in key locations distributed throughout the building, with all light switch keypads, LUX and motion sensors sitting on a simple 2 wire bus. The same cable is used to power the devices and communicate with a central controller, a simple program in the control-

ler binds the points together to achieve the level of control required to provide the energy efficiency and convenience level required.

### Achieved benefits:

- Simple solution that's easy to install, program and maintain
- Miniature Dupline input modules allow the use of low cost robust grid switches
- Free topology of bus cable – no special cable required
- Completely scalable to fit the application and upgrade in the future
- Reduced energy consumption by using predefined functions within the system





## Old Bank Hotel, Oxford

**Customer issue** - The independently owned Old Bank Hotel wanted a lighting control system in its restaurant which provided a relaxed atmosphere and pleasant ambience for its diners, whilst providing multiple lighting scenes which could easily be changed, was simple to use and be energy efficient; all whilst contributing towards cost savings and a reduction in carbon footprint.

**Solution** - Installation of a Carlo Gavazzi smart building system which not only provides the brasserie with the ability to pre-define set scenes which can be changed throughout the day but it does so in an energy efficient manner through the integration of lux sensors and dimmers.

The smart building Controller forms the central hub of the new system, specially designed for building automation applications. It is based on the robust Linux platform and contains the core programme to provide the necessary control of the lighting throughout the brasserie. Programming is

achieved using the pre-defined functions contained within the configurator software and thanks to the 2-wire bus concept there is always the potential to expand the system in the future by adding further components to the existing bus cable.

The exceptional results in the Quod Brasserie have led to it being rolled out across the hotel to provide lighting control in all of the bedrooms.

**Achieved benefits** -

- Installation and wiring costs are dramatically reduced
- Unintrusive maintenance
- A reduction in energy usage and carbon footprint
- Superb dining experience



## University of Westminster, Sutton Council & Library

**Customer issue** - To monitor the status of dampers in buildings with a BMS controller normally requires a considerable amount of parallel wiring, because each individual damper is connected to the BMS controller with a dedicated cable. This method of installation is very labour intensive due to the distances the cable has to be pulled; not to mention the cost of the cable itself. In addition, a BMS controller with a significant amount of inputs is also required.

**Solution** - Replace the parallel wiring with Carlo Gavazzi's Dupline® 2 wire fieldbus solution. Miniature digital input modules are located in junction boxes close to each damper to pick up the input from the dampers end switch. The I/O modules are powered by the 2 wire bus, removing the need for a local power supply. Each I/O module has a unique address so it can be identified on the network. The cable type used in a Dupline network is not critical and

does not have to be screened or twisted. Topology is completely free, providing maximum flexibility for the installation of the cable.

A Dupline® to Modbus interface module was implemented to make the connection between the Dupline® system and the BMS controller.

### Achieved benefits:

- Installation and wiring costs are dramatically reduced
- The BMS controller requires fewer inputs
- Easy to maintain