

SYSTIMAX®

SOLUTIONS

Structured Cabling Helps Intelligent HQ Building Meet Life Assurance Giant's Present and Future Expectations

Scottish Widows marry networks for building management, computers and telephones

With every move to new premises, businesses are making bigger demands on their facilities. This was certainly the case when Scottish Widows decided to build a new, landmark HQ in the heart of Edinburgh's business district.

In becoming a leader in the fast growing life assurance, pensions and investment sectors, Scottish Widows had given high priority to its office facilities and systems. When the organization acquired a prestige site, opposite Edinburgh's international Exchange Conference Center, it was determined to enhance its reputation for creating advanced, award-winning buildings.

Exceptionally high targets were set for the new £60 million headquarters, built on the six acre Port Hamilton site. Improved service to customers had to be matched by high productivity and support for business growth. Equally important, there had to be excellent working conditions for employees, since demand for high quality staff is extremely competitive in the area. All this had to be achieved at lower energy consumption per square meter than any of Scottish Widows' existing buildings.

A range of leading edge electronic systems, as well as high quality architecture and design, were essential to meet the objectives. Invariably, such systems depend on fast, efficient network communication, so cabling was going to be a key factor in the project.

A high standard had already been set in this area at Scottish Widows' existing HQ in Edinburgh's Dalkeith Road. Structured cabling and flood wiring, serving voice and data communication, had been installed on this site during a £10 million refit in 1993. The challenge of achieving further improvement, in this area and many others, fell to Facilities Manager, Bob Bambery.

"We not only had to create an efficient, pleasant working space," he said. "We also wanted systems that enabled us to respond quickly to customers' needs and the environmental preferences of staff."

Customers of Scottish Widows require more than just fast response to their inquiries. As a mutual organization, the business, which manages funds of £28 billion, is also owned by its two million customers. Since they are part owners, customers expect property investments to be cost effective and give improved business performance. As a result, budgets for the new HQ were tightly controlled and every expenditure decision had to be fully justified.

"It was essential to have an intelligent building giving real cost and performance benefits," said Bob Bambery. "Since the necessary systems invariably need a communication network, there were potential savings from integrating cabling for building control equipment with that for voice and data."

Traditionally, building control systems use proprietary cables with a variety of plugs and connectors. Structured cabling for telephones and data is now an accepted standard, and uses high quality modular connectors and outlets.

Performance figures for factors such as crosstalk and attenuation are also fully specified by structured cabling suppliers. This ensured the cabling used to serve the site's desktop systems, 24-hour call centers, securities dealing rooms and video conferencing was more than adequate for its building controls.

A common cabling infrastructure was among new ideas on the agenda once architects and consulting engineers had been selected and design of the new HQ began to take shape. The chosen architects, Building Design Partnership (BDP), proposed a group of building elements harmonizing with the traditional stone terraces and crescents of the nearby Georgian New Town.

A glass roof over the central atrium is used to unify the separate buildings. The buildings to the street are five stories; those at the heart of the scheme rise to eight stories and impact on the skyline, illustrating Port Hamilton's status as Edinburgh's financial center.

Together with large window areas, the atrium provides good natural light and ventilation. Employees have been given the control they want over this light and ventilation via adjustable blinds and opening windows.

Having provided the facility to manually regulate natural light and ventilation, the sophisticated control of heating and air conditioning became a higher priority for BDP and consulting engineers, Cundall Johnston and Partners. Key decisions in this area were made by a team represented at the workshop by Bob Bambery, Marnie Macdonald, Architect Associate, at BDP and Cullen Warnock, Senior Electrical Engineer at Cundall Johnston and Partners.

Serck Controls was selected to supply controls for all environmental systems, including the gas fired boiler, air handling plant and trench heating. They also handled chillers, ice storage, windows and heat reclaim controls. Legrand Switchplan was chosen to supply lighting controls while Honeywell was responsible for sophisticated access and security systems.

With one structured cabling installation serving all these systems, decisions and planning concerning this had to be completed at an early stage. The team's choice was made easier by experience

gained with the SYSTIMAX® Structured Cabling System (SCS) at Dalkeith Road. SYSTIMAX SCS was also the preferred option at the new HQ to support 16 Mb/s switched Token Ring data networks and the Avaya Definity telephone system.

"SYSTIMAX SCS is specifically designed to handle building control systems as well as voice and data," said Cullen Warnock. "This gave the capability we wanted to use a single cabling installation to serve virtually all communication requirements within the site."

Installing a single common network gave savings in time, cost and testing of around 25% for overall cabling installation. It also removed the risk, when several separate cabling systems are used, that installation of one will physically interfere with that of another. As an added bonus, the complete system has a 15-year warranty on all cable components and applications, once completed and registered with SYSTIMAX® Solutions.

"A single installation offers major advantages, especially in large projects with tight schedules," said Cullen Warnock. "It makes procurement, project management and site management simpler, and reduces risks of delay."

The Port Hamilton cabling allows all the systems to be plugged into standard RJ45 outlets installed throughout work and service areas. Devices ranging from PCs and telephones to sensors and actuators are all linked to the networking using a standard plug and outlet. Installation of the cabling is being completed by Honeywell Network Communications Systems Group, an authorized SYSTIMAX BusinessPartner.

In effect, the structured cabling system has become the Fourth Utility on the site. Sensors, actuators and controllers, together with CCTV cameras, identity card readers, telephones and IT equipment, can be plugged into the network just as they are to the electricity supply.

“Cooperation between suppliers has been excellent. As a result, sophisticated systems such as thermal mass cooling using ice generated overnight, and multimode ventilation are now served by a network of equal sophistication.”

Cullen Warnock, Senior Electrical Engineer at Cundall Johnston and Partners.

A network that is hardware independent gives a “plug and play” capability that offers great flexibility in where and when equipment is commissioned. Contractors can install and test components of a system immediately, without waiting for network connections to be completed. Equally important, structured cabling and flood wiring give flexibility to change systems quickly and with minimum disruption, when the building is operational.

“We were determined that our new HQ would have no features that restricted future options to use new technologies and organizational structures,” said Bob Bambery. “SYSTIMAX SCS lets us reconfigure workspaces, add new systems, and upgrade old ones, without significant changes to infrastructure.”

To cater for all commonly used building controls, the cabling at Port Hamilton is all unshielded 4-pair Category 5. This allows for fault tolerant operation, which is essential in many applications. A wide variety of network configurations can be supported including star and ring, daisy chaining and T-Lap layouts.

During the Port Hamilton project, SYSTIMAX Solutions has, where necessary, worked closely with control system suppliers in specifying RJ45

connector options for their equipment. The company has also produced a set of installers’ guides for connecting equipment from major control system suppliers via SYSTIMAX IBS cabling.

Use of structured cabling was welcomed by the system suppliers since it ensured consistent reliable connections between their hardware. The connectors are robust and gas tight, and cable runs meet all current requirements on resistance to electromagnetic interference.

At the heart of the Port Hamilton network, two communications rooms on level 1 are linked via fiber optic risers and backbones to equipment rooms on other floors. Twenty six of these rooms serve the work areas via an under floor matrix of cables on six meter centers.

The complete arrangement promises reduced maintenance cost and faster fault location, compared with a multiplicity of separate networks. More than 6000 outlets across the site give further cost reductions by mitigating the effect of churn, which is a feature of any fast growing organization. It is possible to move staff throughout the work areas without incurring any overheads in reconnecting them to the services they need.

Commenting on this flexibility, Marnie Macdonald of BDP said: “As architects, we aimed to create working spaces that gave Scottish Widows the option to change layouts at minimum cost. The cabling infrastructure allows essential equipment to be moved with an ease that helps to realise the building’s full potential.”

“For a project on this scale completion has been quick, with relative few problems.” said Bob Bambery. “Integrated cabling has contributed significantly to this success, but its greatest cost and convenience benefits will be seen over many years of operational activity to come.”

SYSTIMAX[®]

SOLUTIONS

© 2004 CommScope, Inc.
All rights reserved.

Visit our Web site at www.systimax.com or contact your local SYSTIMAX Solutions representative or SYSTIMAX BusinessPartner for more information. SYSTIMAX Solutions is a trademark of CommScope. All trademarks identified by © or ™ are registered trademarks or trademarks, respectively, of CommScope.

This document is for planning purposes only and is not intended to modify or supplement any specifications or warranties relating to SYSTIMAX Solutions products or services.