Case study

Securities Commission Headquarters

Kuala Lumpur, Malaysia

Energy-efficient building is Malaysia's first fully ductless facility

The new Malaysia Securities Commission Headquarters facility was designed around the concept of achieving a distinctive modern form, interpreted from traditional design to reflect Malaysia's history, cultural roots and future aspirations. The roof, together with the layered facade, shelters the building from the tropical heat and glare. The facade is designed to be climatically responsive to the external environment.

The entire building facade has a hollow double skin, which forms a buffer between indoor and outdoor temperatures and climatic conditions. As a result, transparency to and from the building is optimized, daylight is maximized and energy consumption is greatly reduced. The building made history when it was built since it is Malaysia's first modern facility with fully ductless air conditioning. Cold air is supplied through the raised floor. The facility also offers the first truly flexible office work environment which allows easy reconfiguration of air supply grills, power, communications, data, central vacuum, central shredder and IT systems. Johnson Controls was given the task of designing an open, integrated building management and control system for the facility.

Challenges

The building management and controls system needed to provide efficient control of the facility's under-floor fan air terminals, and mechanical and electrical systems. The system also needed to act as an information broker to an enterprise layer of office automation and to a facilities management system. This required integration of the Johnson Controls Metasys® building management system with the lighting controls, elevator management system, fire detection system, window blind controls and chiller control panels.

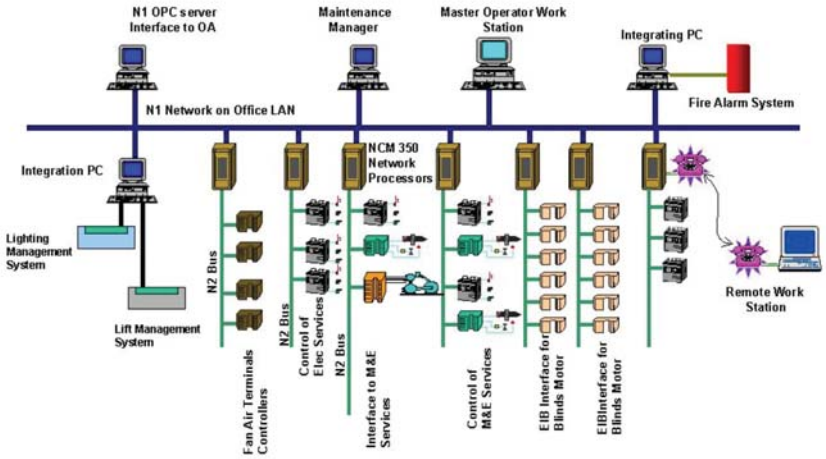
Johnson Controls

Solutions

- To meet the unique specifications of the customer, Johnson Controls branch engineers worked closely with the fan air terminal unit supplier to design a specialized control package. Controllers with customized control software are mounted on the fan air terminals along with accessories like sensors and fan speed/mode switches. The Metasys system handles the supervision and control of the complete mechanical, electrical and air conditioning systems in the building.
- A custom software interface integrates lighting controls, elevator management, and fire alarm and chiller systems. This integration allows all data from the subsystems to be monitored and controlled by the Metasys system.
- For improved building energy management and lighting control, hundreds of electronically actuated blinds are integrated with the Metasys system. Because of the system's open architecture and Johnson Controls integration capabilities, all the blinds were interfaced successfully. This application involves the use of a European Installation Bus (EIB) interface and is the first large-scale EIB interface in Asia.
- With all the subsystems successfully interfaced with the Metasys system, Johnson Controls provides a standard interface to the enterprise management system using the latest OLE for Process Control (OPC) interface.

Results

Johnson Controls successfully integrated all the building services and subsystems with Metasys. This allows the building manager to take advantage of the energy management modules of the Metasys system and more effectively control individual systems. With the OPC interface, building users can access all building control data from their desktop through the office automation and enterprise management system.



Securities Commission Headquarters: Metasys building management system architecture

Johnson Controls