Integrating a Security and Building Management System Enables Energy Efficiencies for SmartCity Malta

SmartCity Malta is a self-sustained industry township for knowledge-based companies located in the Ricasoli Estate in Malta.

Being developed by SmartCity, a conglomerate promoted by Dubai Holding member TECOM Investments, in partnership with the Government of Malta, SmartCity Malta will be home to a vibrant knowledge-economy community anchored by leading global, regional and local companies.

Honeywell
The Solution

A Honeywell Pro-Watch® Corporate Edition security system was installed to control the access of SCM01’s 30 doors and ESI Malta Ltd also provided detailed expertise integrating the Pro-Watch system with the Tridium BMS by producing a specific adapter using the Honeywell Software Development Kit (HSDK). This adapter enables Pro-Watch and the BMS to efficiently share each other’s input and output signals. Also as part of the security system, intruder detection and video surveillance products were installed.

OmniAssure™ MIFARE card readers from Honeywell are also installed to monitor when an access control card is presented at door entry and exit points. Using Honeywell PW6000 intelligent controllers, Pro-Watch sends signals to the BMS whenever an access control card is presented to one of the readers. The access control cards can be programmed with cardholder’s credentials including their personalised preferences for temperature and lighting settings. Due to the integration with the BMS, these settings are then applied based upon the person’s location within the building.

The BMS also receives inputs from other security and safety related systems which are now displayed and recorded via Pro-Watch too. Such systems include; fire alarm (where the individual ‘fire zone’ is identified), emergency lighting, Uninterruptible Power Supply (UPS), back-up power generator, water leakage alarm, IT infrastructure and voice alarm system. For example, when an emergency event such as a fire alarm is triggered, the system automatically records and displays video images of the specific zone. Equally, in the event of a failure with the UPS, an alarm is shown via the Pro-Watch interface.

Video surveillance of the public areas is carried out with Honeywell IP PTZ mini dome and box cameras. The high definition images are captured and managed by the Honeywell MAXPRO® VMS video management system which also integrates with Pro-Watch. MAXPRO VMS gives the security team at SmartCity Malta complete control over all video sources. This includes control of live video from the cameras and enabling them to view video captured before, during and after every alarm/event received from Pro-Watch.

Intruder detection is also integrated via the Pro-Watch system. Sturdy and reliable DUAL TEC® motion sensors and door contacts from Honeywell are installed throughout the building. Alarm outputs triggered from these are managed by MAXPRO VMS and live video instantly shows the area in question on the video wall. At the same time, the BMS sounds a siren and increases the brightness of the lights in the area where the intruder is located.

The Situation

Situated at the heart of SmartCity Malta, ‘SCM01’ is a commercial building covering 12,000m² of office space spread over seven storeys, providing a series of flexible office suites together with shared facilities and ample parking for knowledge workers and visitors.

SmartCity Malta is continuously striving towards excellence and committing to green policies. Consequently, SmartCity Malta’s development is planned in studied phases with technologically advanced green buildings that enable its tenants to operate in a secure, comfortable and safe environment.

In line with its commitment, SCM01 is the first LEED certified green building in Malta. Leadership in Energy and Environmental Design (LEED) is an internationally recognised green building certification system, providing third-party verification that a building has been designed and built in a way intended to improve performance in metrics such as energy savings, water efficiency, CO₂ emission reduction and improved indoor environmental quality. To underline this efficiency commitment, it was important that the technology within building SCM01 would contribute towards it achieving LEED certification.

A key element in optimising SCM01’s efficiency was enabling the Honeywell Pro-Watch® security management system to share signals with the Tridium Building Management System (BMS). As a result, SmartCity Malta required a mechanism that would aid in seamlessly integrating the two systems.

SmartCity Malta invited Building Services consultants from ‘Scicluna & Associates’ to determine the most appropriate solution, who in turn selected systems integrator ‘Engineering for Science and Industry (ESI) Malta Ltd’ to manage the design and installation.
The Benefits

An Efficient Building

In line with SmartCity Malta's green commitment, SCM01 is one of the first buildings in Malta that has achieved such a high standard for a technologically-advanced green building, enabling its tenants to operate in an efficient, comfortable and productive environment.

The system can continuously check the occupation status of each room / zone by monitoring the presence of access control cardholders and adjusting the lighting and flow of fresh air accordingly. Lights are turned on automatically when rooms become occupied and turned off when they become vacant. In addition, CO² sensors installed within the premises send signals to the BMS which combine with inputs from Pro-Watch to regulate the amount of fresh air delivered to each room depending on occupancy. Similarly, air flow and lighting is adjusted within meeting rooms when a visitor's access card is presented.

Since the BMS is integrated to other infrastructure systems and equipment within the building which are not directly related to security, critical alarm statuses and conditions from these systems are sent and recorded as events in Pro-Watch. This innovative feature gives the operators visibility of the status of other building infrastructure services which in turn enhances the safety and business continuity of the building occupants and owners.

The data from the BMS, which includes inputs from Pro-Watch, also provides new energy-analytic reporting tools and Key Performance Indicators (KPIs). The SmartCity Malta management team use these statistics to monitor and measure the performance of the building as part of a continual process of measurement and verification of installed building systems. These readings ensure that the building operates as intended and maintains operational efficiencies.

Competitive Edge

Providing a state-of-the-art Information and Communications Technology (ICT) infrastructure with a converged BMS and security system within a technologically-advanced green building not only underpins SmartCity Malta’s corporate responsibility towards the environment, but it allows it to differentiate itself from other commercial buildings and developments to help attract worldwide ICT brands as tenants.

Optimum Security and Convenience

Via Pro-Watch, the BMS assesses the occupation levels of the building 24/7. At night time, to optimise security, additional footpath and car park lighting can be turned on when any cardholders working late leave the building.

One Easy-to-Use System

The security team manages and controls the system via a dynamic, graphical user interface - the ‘Alarm and Event Monitor’, which displays clearly all alarm statuses and conditions from the BMS and Pro-Watch. For added convenience the interface is integrated with computer tablets and smart phones for access away from the control room.

The MAXPRO VMS system enables the IP video cameras to be controlled with ease and any images to be displayed clearly on the bank of monitors. Operators are quickly and clearly alerted to alarm events and incidents, and video pursuit is possible via motion detection using a set of surrounding cameras.
Partner of Choice
Engineering for Science and Industry (Malta) Ltd.
Engineering for Science and Industry (Malta) Ltd. is an ISO9001-2000 certified registered company who are specialists in the design, installation and commissioning of automation and specialist solutions within the following generic fields:
- Building Energy Management Systems
- Industrial and Process Automation and controls
- Security and Safety Systems
- Home Automation

With many years of experience and specialised knowledge, ESI is able to provide a wide range of services encompassing all aspects of the Automated Controls, security and Safety Engineering Industry.

Products:
- Honeywell Software Development Kit (HSDK)
- Pro-Watch® Corporate Edition
- PW-6000 Intelligent Controllers
- MAXPRO® VMS Video Management System
- OT31HONAS OmniAssure™ MIFARE Readers
- HD3MDIPX, HD4MDIPX and HCDS54IPX HD IP Cameras
- HDXGPWDCW ACUIX™ IP PTZ Camera
- DT7235T DUAL TEC® PIR Motion Detectors

For additional information, please visit www.honeywellintegrated.eu

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