

# B1 Online

Extract from the B1 online magazine / [www.siemens.com/b1](http://www.siemens.com/b1)

**SIEMENS**

## World Heritage Site Preserved

There is probably no other place where tradition and modernity, culture and technology are so tightly interwoven as in Vatican City. Total Building Solutions make a decisive contribution to protecting and preserving this World Heritage site.

Over time, public buildings have become subject to stricter and more numerous requirements. These include the energy-efficient operation of various systems such as air-conditioning, entry and visitor management, and theft protection and intrusion detection. Wherever the situation calls for technologically advanced solutions to meet all requirements and optimize costs, Total Building Solutions (TBS) are the ideal

answer. This is true in the Vatican as well. It is precisely here that works of art need special protection against fire, vandalism, and – not least – the ravages of time.

### Comprehensive solutions

Everyone knows the Swiss Guards, with their colorful Renaissance uniforms, stand watch around the clock outside the entrances to the papal palace, the Palazzo Pontificale. The papal residence could not function completely without technology, especially, in the areas of fire safety, building security, and creating a comfortable room climate. Siemens systems take care of all these things, not only in the Palazzo Pontificale but also in practically every other building in Vatican City, including St. Peter's Basilica, the Sistine Chapel, the Domus Sanctae Marthae guest house, the Vatican Museums and Libraries, the Vatican Bank, the train station, and the heliport. Vatican City State, the smallest state in the world, is an enclave within the city of Rome. It has an area of 0.44 square kilometers and a population of just under 1,000 inhabitants. It is built on a hill to the west of the Tiber River and is separated from Rome by a wall. It is also home to unique cultural artifacts and works of



Presidential Palace of the Governatorate of Vatican City

### Siemens technology in the Vatican

- Fire safety system and intrusion detection
- Fiber-optic-based network including more than 120 fire control units and thousands of fire detectors connected to the MM8000 monitoring system
- Thermostats and air-conditioning
- Lighting solutions from Osram
- Designo Insight management station that controls and monitors various buildings from several command centers via the Web
- Power supply and distribution systems
- Telephone systems

Presidenza del Governatorato (Stato della Città del Vaticano)

---

art, and in 1984 was recognized as a World Heritage site by the United Nations Educational, Scientific and Cultural Organization (UNESCO). It is the only nation in the world whose entire territory is protected by UNESCO. However, the cultural artifacts and works of art accessible to the public in the Vatican Museums and in the Sistine Chapel must be protected, primarily from theft, vandalism, fire, and harmful environmental influences. Siemens offers the comprehensive solution with Total Building Solutions.

### **Collaboration with a long tradition**

For almost 70 years, Siemens has maintained a close customer relationship with Vatican City. This collaboration began in 1941, when the first electric systems and telephone installations were delivered. Since then, the relationship has developed steadily. In 1986, the first fire safety systems were installed to protect valuable works of art. Ten years later, the Domus Sanctae Marthae, the cardinals' guest house, was extended, renovated, and equipped with the very latest in building technology. This building accommodates cardinals and bishops during various ceremonial events, conclaves, and consistories.

The guest house and the headquarters of the Osservatore Romano, the papal newspaper, were renovated in 1999. Fire detectors and thermostats were installed at the same time. By 2001, more than 90 central control units and 2,000 fire detectors systems specially equipped for protecting works of art and cultural artifacts had been installed. At this time, the Vatican railway station was converted to a megastore, where foreigners with links to the Vatican are also able to buy goods upon presentation of the appropriate documentation. In 2003, further innovative technologies were converted into additional safety and security systems in collaboration with the technicians of the Governorate. These systems enable early detection of possible fire risk factors, thus providing even greater protection for the valuable cultural artifacts, facilities, and works of art.

Today, the Siemens solutions in the Vatican range from security, fire protection, and air-conditioning systems to electrical power supply and distribution. With the cooperation of the Vatican technicians, Siemens has consolidated all the fire protection systems in the state into a single network. This fiber-optic-based network includes more than 120 control units and thousands of fire detectors connected to the MM8000 monitoring system. In addition, the technical building systems are being continuously

### **Total Building Solutions**

Total Building Solutions (TBS) can perform all these tasks in both renovated buildings and new constructions. The expertise Siemens has gained over more than a century is evident in the maximum integration of systems, the maximum openness and scalability, and the use of the most modern components. TBS also guarantees that customers will benefit from working with a single senior contact person for the entire project, as well as from cost-cutting offers relating to implementation, operation, and maintenance.

Technicians can also contribute to defining objectives when they work closely with the building's owners and managers. Total Building Solutions make buildings smarter and offers energy-saving potential, easy operation, flexibility, service integration, and sustainability. Total Building Solutions can be implemented in office buildings as well as shopping centers, museums, hotels, hospitals, and theaters – in fact, anywhere where advanced technological solutions and cost optimization are important.

modernized and connected to the Desigo building automation and control system. These systems include the most modern lighting solutions from Osram for various halls.

### **Transparency and partnership**

The fire safety system and intrusion detection system in the Vatican Bank have only recently been upgraded with a solution that guarantees maximum autonomy in controlling and monitoring. This is made possible by the Desigo Insight management station, with which various buildings can be controlled and monitored via the Web from a number of command centers. Desigo allows at least five clients to be controlled via the Internet. These clients enable password-protected access to the base platform from anywhere in the world.

Both the Vatican City State's own networks and the general Internet are used. The fire protection systems themselves are connected to the MM8000 monitoring system for the Vatican fire brigade, so that this organization can respond to emergencies promptly and systematically. Responses can be controlled using graphical plans with an indication of the severity of the danger.



Interior with a corridor to the Vatican Museums

Trevisi, who successfully managed Building Technologies Italy until the end of 2009 and now provides consulting services directly to the Vatican and for large projects in the Siemens Industry sector. The recipe for success is integrated solutions from a single source, based on customer relationships characterized by partnership on both technical and human levels.

Contact: [b1.i-bt@siemens.com](mailto:b1.i-bt@siemens.com)

---

Presidenza del Governatorato (Stato della Città del Vaticano)

Another joint project involves the Biblioteca Apostolica Vaticana. In this library, Siemens technology controls and monitors all the technical systems. Here too the Desigo monitoring platform is used – in this case an open, scalable version that will be used in the future to control the systems in the Sanctae Marthae guest house.

Despite the fact that the installed technologies must be invisible and discreet, the various projects entailed a thorough study of the importance of the various works of art. An investigation is currently under way to determine whether it would be possible to have one system monitor all the systems in the Vatican Museums. Applications for electrical power supply and distribution have also been implemented at many sites – from the residence of the Holy Father (lighting and power distribution boards), the residence of the Secretary General (call management), the Cappella Paolina, and the Synod and Audience Hall to the heliport, railway station, and police station.

“Our successful collaboration with the Vatican is based on the fact that we do not present ourselves as salespersons, but rather as partners and consultants,” emphasizes Armando