



## ETH Zürich

### New Building Management and Alarm System



The Federal Polytechnic School of Zurich, founded in 1854 by the Swiss Confederation, has acquired a worldwide reputation for its quality in science, engineering and mathematics.

It is made up of 16 departments (agronomy and food science, architecture, environmental engineering and civil engineering, biological systems, etc.) and has over 8 000 employees working in research, teaching and administration. Statistics currently show that about 12 700 students are enrolled. Among the former teachers and graduates are Nobel Prize winners such as Wilhelm Konrad Roentgen and Albert Einstein.

“With **Wizcon** SCADA-System, the ETH Zürich created a Platform, which promotes the competitive practice among the tendered and thus reduce the costs substantially.

**Ruedi Brunner**  
Head of Technical Building Management, ETH

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## The presentation

### The burden of a colossal administration system

Property Management at ETH Zurich requires a demanding and robust management of a key set of buildings, rooms and spaces dedicated to research, teaching and administration. These facilities and services for students, teachers and staff are spread over 5 sites with more than 255 buildings.

With 2 centralized alarm stations, 3 web servers and 17 acquisition servers, more than 180 000 measurement points and 40 000 alarms are controlled and monitored by 30 networked operator stations using the ELUTIONS' Building Management System solution.

## The Situation

### A sophisticated building Management

The aim of the project was to modernize the management of the buildings and establish a new alarm management regime whilst conserving most of the existing systems for measuring, monitoring and control. In other words, the complete integration of various products

and technologies for building management and security. The other imperative was to minimize operating and maintenance costs of buildings together with renovation costs and set standards while installing a new open, flexible and robust at long term supervision system, to facilitate future buildings modifications or extensions.

Because of this **Wizcon**™ was chosen for the project in July 2001, in particular because of its powerful integration capabilities with third party systems and its ability to meet the demands of managing complex buildings. The new building and alarm management system was created by close collaboration with ETH IT and communications services and was deployed by **eMation AG** ([www.scada.ch](http://www.scada.ch)), official authorized distributor of the **Wizcon** product in Switzerland.

To take full advantage of the product technological advances, **Wizcon** applications will be migrated to **ControlMaestro**™, the new ELUTIONS' SCADA generation platform, by the end of 2011.

## The Solution

### A solution to answer to all building issues

**Wizcon** incorporates all the necessary tools for the optimum utilization of facilities, and provides functions for data acquisition and control of the various systems and software used onsite: access control, fire safety, air conditioning, ventilation, heating, and also for heterogeneous technical blocks (lighting, electrical panels, automatic elevators, escalators, roller shutters...), heterogeneous installed control command systems (eg. EY2400 and EY3600 Sauter, Cerberus) and centralized management of energy. All data communication devices and network measurement, meters measures qualities (temperature...) are collected.



## Advantages:

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- Multi Protocol open solution
- Web Access
- Advanced alarms management
- Control and data management
- Modularity, scalability

### ControlMaestro Advantages

- Easy deployment
- Security: network redundancy
- Rapid response to specific needs

### Return on investment

- Time gain: fast integration
- Efficiency gain: optimize communication of key data
- Maintenance costs reduction

## Technical Specifications :

### Applications software

- ControlMaestro SCADA software for site-wide platform automation

### Architecture

- 2 centralized alarms stations
- 17 **Wizcon** acquisition Servers
- Communication drivers: Modbus, Profibus, TCP/IP, BACnet, OPC, Sauter
- 30 **Wizcon** Stations
- 3 Web Servers
- DSL link

### Equipements

- Networked PC under Windows XP
- PLCs: Sauter, Cerberus, Siemens, Saia, TRANE, WAGO
- Internet Explorer 6.0
- Proset II network cards



The Höggerberg centralized alarms station is responsible for onsite alarms management, on the city center site and the 3 other sites. It is constantly monitored by an on duty person 24h/24, 7d/7. The main tasks of these operators are the treatment of alarm and errors messages and the switchboard outside office hours. This is the alarm management software **ALERT™** that transmits alarms to the operators concerned over the **Wizcon** centralization station for rapid intervention if necessary.

Detailed reports (statistics of defects, automatic mechanisms response, maintenance journal) are also available.

## The results

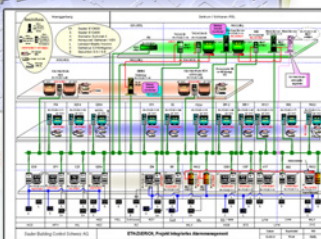
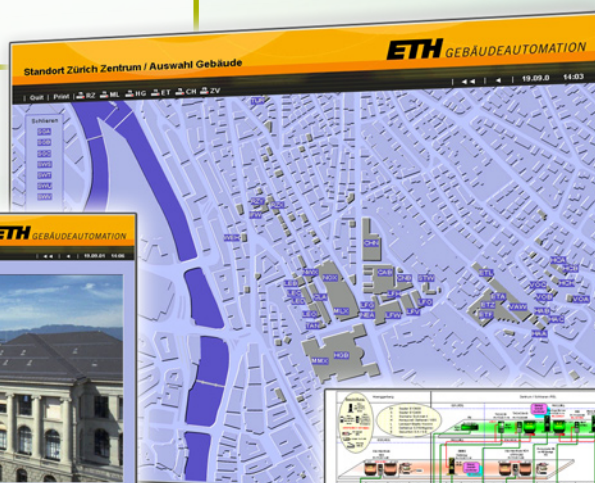
### Security of goods, people and investments

Security in the building, whether from intrusion detection, access control or the video-enhanced surveillance, has been improved by the new integrated system.

**Wizcon** also helped to optimize the environment to increase occupant comfort while reducing power consumption and equipment wear.

The raw data was transformed into information for decision making in real time, with historical tracking was used to make long term adjustments. The solution thus made it possible to identify areas of potential energy savings that targeted the activities of the facilities control and the implementation teams to targeted their actions.

This large project has demonstrated the effectiveness of a supervisory system which is capable of achieving energy cost savings whilst at the same time improving the security and comfort levels in the buildings.



## For more informations Contact us

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