

TAUW LABORATORIES & OFFICE COMPLEX

DEVENTER, HOLLAND



For Information Call
Engenuity
SYSTEMS
PHONE: (480) 782-5600 OR (800) 375-3363
VISIT: www.engenuity.com

Project	TAUW Laboratories and office complex
Technical Staff	Two staff engineers plus contract specialists
Square Meters	6.000 (64,600 square feet)
Equipment	I/NET® system with over 800 points. ATH supplied modbus master and drivers for Danfoss and Energy Monitor; PC driver for transferring alarms to pagers, mobile telephones, etc.
Installation	Building management systems (BMS) to monitor gas concentrations in rooms and monitor reference gas levels, maintain air pressure, and interface to alarm system.

"Monitoring potentially lethal gases and maintaining precisely balanced air pressure are jobs CSI equipment is ideally suited for. Our controls provide the sensitivity and responsiveness customers like TAUW Laboratories need. The high reliability of our products and the interfacing to sophisticated alarm systems ensures the safety of lab personnel 24 hours a day."

-Charles Preeker, Product Manager
Ath techniek b.v.

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Controlling an environment where potentially toxic chemicals and gases are part of day-to-day business presents a unique and daunting challenge. TAUW Laboratories office complex conducts sophisticated soil analysis for governmental agencies, construction companies and various other customers. One of the leading companies of its type in The Netherlands—and one of Europe's top environmental consultants—TAUW conducts its business from three interlinked, 14,000 sq.m. (150,000 sq. ft.) buildings. This complex includes 3,000 sq.m. (32,000 sq. ft.) of high tech laboratory space where technicians carry out sophisticated analysis procedures.

Reference gases used in the analysis process must be closely monitored to ensure a ready supply for the tests to be conducted. Concentration of gases released into the laboratory's room air must also be monitored and controlled to keep levels within acceptable limits for lab personnel. The buildings are sealed to prevent escape of gases to the outside, and it is the continuous, careful adjustment of airflow that is responsible for maintaining proper environmental conditions. Should toxin concentrations exceed acceptable levels, an alarm system must alert personnel promptly.

Prior to 1997, TAUW used a variety of individual analog controls to manage its complicated environmental processes and alarms. However, these controls were not part of an integrated system and TAUW had no central command from which to monitor conditions and control the various types of equipment. They needed a unified building management system (BMS) of a high calibre that could give them more visibility of conditions inside their buildings and more flexibility of control over those conditions.

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In 1997, TAUW selected ATH techniek b.v., CSI's Dutch systems integrator and VAR, to provide controls for all its HVAC systems. ATH had successfully installed CSI equipment at another of the company's facilities and TAUW wanted to use the same reliable technology it had come to depend on.

Completed ahead of schedule, the BMS project included installation of CSI's I/NET software and host PC to provide overall system visibility and central control.

To prevent escape of any noxious substances, TAUW installed a series of fume cupboards as part of a huge extract network linked to the CSI BMS. The CSI system carries out the continuous, precise monitoring and ventilator fan adjustments necessary to maintain the delicate air balance inside the sealed building. Air pressure in the ducts and individual rooms is regulated via a modbus gateway controlling the fan speed of frequency driven ventilators. The system continuously measures air pressure and calculates setpoints to maintain desired levels on a room-by-room basis and communicates with applicable alarm systems.

The CSI system also monitors the supply of numerous gases used in chemical procedures such as chromatographic (including dioxin) analysis. The system is programmed to inform staff when any of the bottles—containing argon, helium, hydrogen and other gases—require replacement. Should a bottle be allowed to discharge too far, the system alerts the engineers, thus ensuring the quality standards of all analysis conducted in the laboratories.

If alarms are triggered, the CSI system automatically shuts down all fans, issues warnings to engineers via pagers and initiates building evacuation. Although by law, fire systems must be independent of HVAC systems, intelligent interfaces between the two allow the BMS to respond simultaneously to the same alarm conditions. Under certain programmed alarm circumstances, the BMS will also automatically alert the town's fire brigade while all 650 employees clear the building. Once on the scene, the fire brigade can override automatic controls to stop or start selected parts of the CSI HVAC system as needed to contain the contaminants and restore the interior environment.

Before/After Data

	Prior to 1997	1997 to Present
Environmental controls	various (analog)	CSI's digital DDC
Building management system (BMS)	No	CSI's I/NET
Networking capabilities	No	Yes
Real-time visibility/graphical monitoring of entire complex	No	Yes, animated
Easy-to-use operation and programming	No	Yes
Backward compatibility	No	Yes
Remote alarm handling	No	Yes
Open structure of controls	No	Yes
Software easily extended to remote sites	No	Yes
Competent local systems integrator	No	Yes, ATH techniek b.v. and Wolter & Dros

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The CSI system has provided the easy-to-use graphical interface TAUW needed to monitor conditions throughout the laboratory and office complex and the sophisticated controls and interfaces they needed to manage a variety of critical processes.