

ENERGY SMART SPACES

Customer Success Story

Aristotle University of Thessaloniki Thessaloniki, Greece

Optimizing University Campus Heating for Greater Energy Efficiency

Established in 1925 and named after the renowned philosopher Aristotle, the [Aristotle University of Thessaloniki \(A.U.Th.\)](#) is the largest university in Greece, covering 230,000 square meters in the center of Thessaloniki. The university employs over 2,000 academic staff members and teaches more than 40,000 students each year. A.U.Th. is a highly regarded educational institution in Greece.



Key Points

- **Centralized heating system monitoring with GENESIS64, providing greater visibility into boiler operations and building temperatures across the campus.**
- **Optimized boiler and heating network operations, reducing boiler usage and lowering the heating network water temperature from 110°C to 90°C.**
- **Reduced annual energy consumption by 35.6 percent in the first year, generating savings of more than €280,000.**

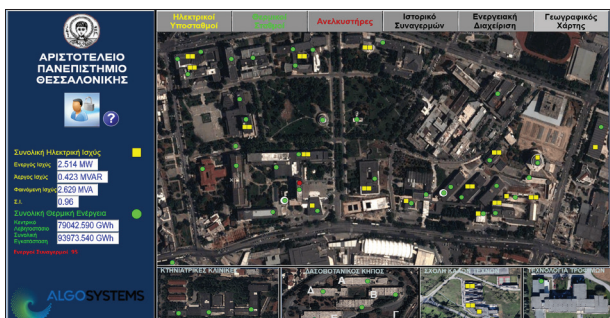
The Challenge

The buildings of the Aristotle University of Thessaloniki are located throughout five sites in the wide area of Thessaloniki.

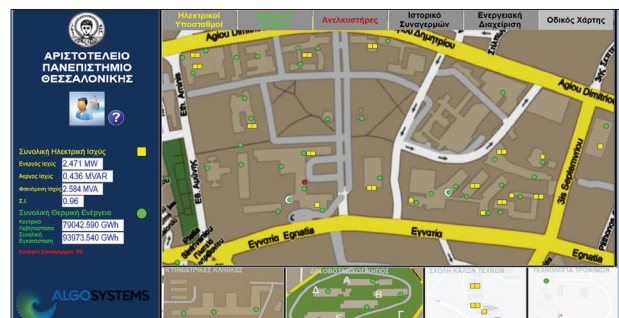
These include a central campus (334,000 square meters), a campus in Thermi (213,000 square meters), a university farm (1,885,706 square meters), the Forestry and Natural Environment department facilities, and the School of Veterinary Medicine clinics. Several additional sites are also overseen by the university, including additional buildings in Thessaloniki and several outside the city, including archaeological excavations in Vergina, Dion, and Pella, as well as university-owned forests.

Due to the wide dispersion of the buildings, their age, and old or nonexistent energy specifications at the time they were designed, energy consumption and the corresponding costs are very high. During the last six years, the A.U.Th.'s energy policy was revised, with considerable efforts toward saving energy by renovating installations and buildings, adopting energy-saving policies, and radically modernizing energy control systems.

The heating of buildings in the A.U.Th. central campus is provided through a heating distribution network. Centrally located boilers on university grounds, including one in the Polytech School that handles about 90 percent of the total capacity of the central campus, connect to the steam network with corresponding



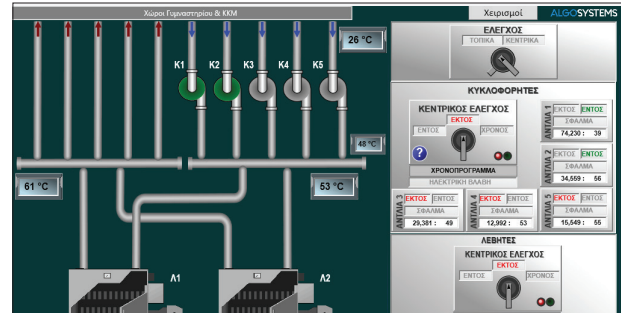
A.U.Th. Display Screen Created via GENESIS64



Alternate Campus Overview HMI/SCADA Display



KPI Dashboard Overview



Boiler Room Overview Developed with GENESIS64

exchangers within school buildings. University facilities management, led by Professor Xenos Thomas of the School of Electrical and Computer Engineering, were tasked with reducing the fuel consumption related to this heating network. As part of these efforts, including infrastructure updates to both the boilers and the heating network, the A.U.Th.'s facilities management sought HMI/SCADA software to monitor and manage the entire system.

The Aristotle University of Thessaloniki, working with systems integrator [Algosystems](#) of Athens, Greece, selected GENESIS64™ building automation and HMI/SCADA software suite.

Software Deployed

- **GENESIS64™**

The Results

A.U.Th. facilities management, working with systems integrator Algosystems of Athens, Greece, realized immediate benefits after updating the heating network, including implementing new thermostatic switches, and deploying GENESIS64 building automation and HMI/SCADA software. The new system provided the operational data needed to optimize boiler room and heating network performance.

Key results included:

- Improved heating system visibility by continuously monitoring boiler operation, temperatures, and levels, along with indoor temperatures across connected buildings.
- Optimized boiler operation using operational data to reduce the number of boilers required to meet heating demand. Loads that had previously required five boilers could be handled by three or two, and in some cases, only one.
- Lowered the heating network water temperature from 110°C (230°F) to 90°C (194°F) while maintaining the required thermal inertia across the heating network and connected buildings.
- Reduced annual energy consumption by 35.6 percent in the first year, resulting in savings of more than €280,000 compared with the previous year.

The energy savings continued over the following two years, with A.U.Th. achieving an average eight percent year-over-year reduction in energy consumption despite especially cold and long winters and extending the university library's daily operating hours by five hours.

Conclusion

Facilities management personnel at the Aristotle University of Thessaloniki are pleased with the measured improvements in their heating network's energy consumption over the past years. They also continue to anticipate low energy consumption into the coming years due to the physical updates to their heating system and the continued monitoring and management through GENESIS64.

MITSUBISHI ELECTRIC ICONICS DIGITAL SOLUTIONS

HEAD OFFICE: 2 Hampshire Street, Suite 300, Foxborough, MA 02035