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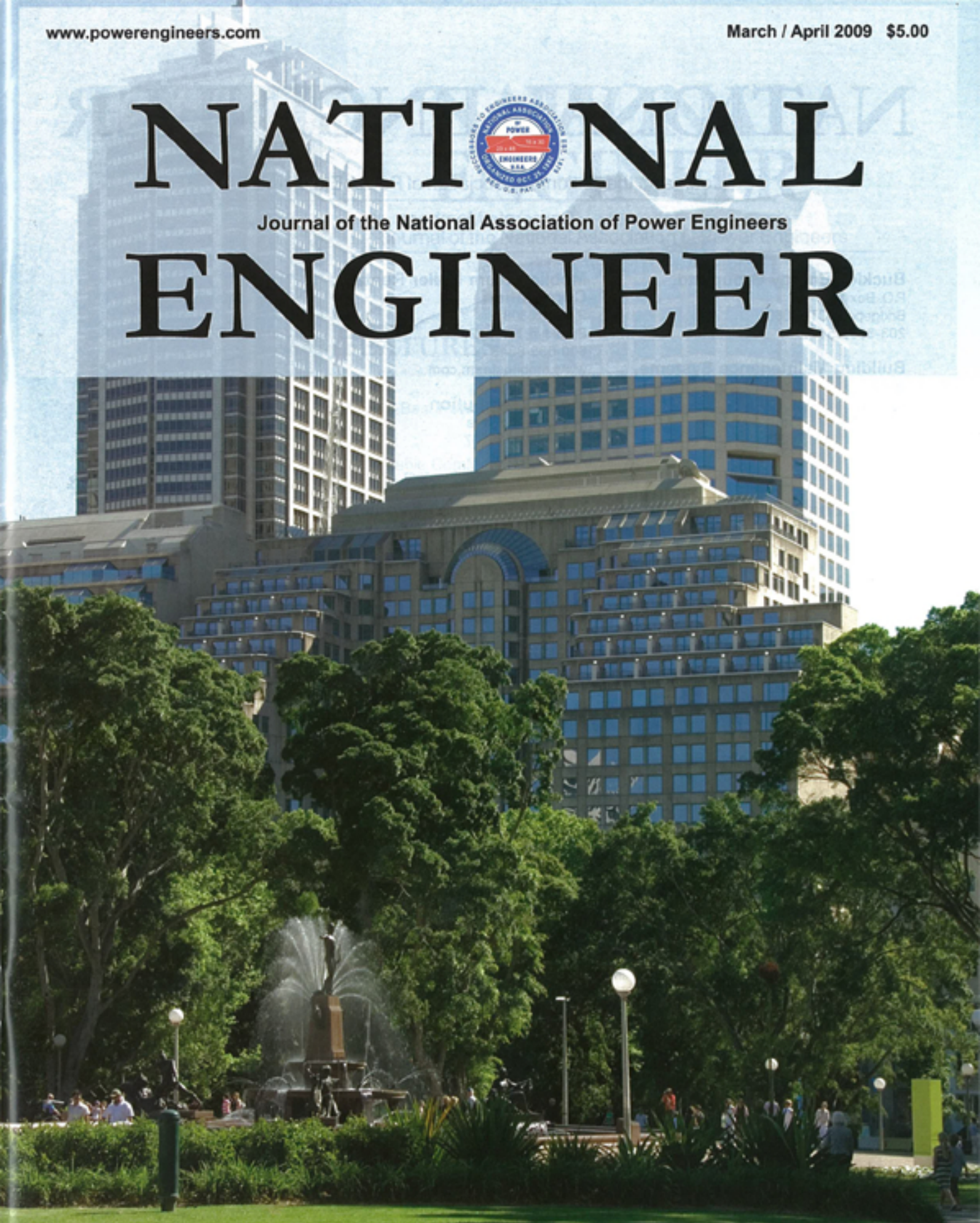

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Upgrade Boosts Efficiency and Cuts Emissions

CAPSTONE TURBINE

Officials at Masonic Village at Elizabethtown, Pennsylvania, U.S.A., weary of the campus' 90-year-old, inefficient coal-fired steam system, and the high emissions associated with burning coal, knew it was time to move to a next-generation technology for their heating and electric needs — combined heat and power (CHP).

In 2002, eager for a change and after conducting deep research, Masonic Village installed five Capstone Turbine C60 (60 kW) low-emission turbines that produced a combined 300 kW of electricity. For five years, the natural gas turbines, designed specifically for CHP applications, supplied existing base load hot water needs, and simultaneously created electric power for the campus. The reliable, clean and green turbines lowered emissions and improved energy efficiency.

In the meantime, at its California headquarters, Capstone's product development team continuously worked to enhance the turbine and developed an integrated heat-recovery module — the C65 ICHP — which generates 65 kW of electric and ejects 408 000 BTU per hour.

Masonic Village officials, pleased with the performance of the original natural gas C60s, agreed to upgrade the CHP turbines to the C65s. In December 2007, a combined crew from Capstone and E-Finity (the local Capstone distributor) upgraded the five turbines in less than 48 hours. In fact, the retrofit was so efficient that the array of five turbines was only down for a total of eight hours. The retrofit increased the onsite power plant's thermal and electrical energy efficiency virtually overnight.

Masonic Village is a 567 hectare complex serving 1737 residents since 1910. Compared to the original coal-fired plant, the Capstone installation emissions are so low, it's equivalent to removing 642 cars from the road or planting 405 hectares of forest per year.

In addition to the turbine upgrade, E-Finity and Capstone also installed the Capstone-designed integrated heat-recovery modules on each turbine and the Capstone Service Network, which allows real-time remote monitoring, alarming and troubleshooting of the power plant via the Internet.

The original Capstone installation placed third-party heat exchangers beside each turbine. After the upgrade, the heatrecovery modules are on top of each turbine, which means the entire system consumes less space. Connectivity to the Capstone Service Network and finalization of the project upgrade was completed and online in January 2008.

The upgrade also includes a complete five-year factory protection plan, with a second complete overhaul after the next 40,000 hours of operation.

The new system produces 325 kW — 25 kW more than the original Capstone installation; is yielding a 47% increase in net heat recovered; and has an overall system efficiency of approximately 83%.