Fuel Cell Performance Advantages

- Continuous Power—Unlike backup generators and diesel engines, fuel cells generate continuous, high grade power.
- Computer Grade Quality Power—Meets the needs of sensitive equipment that are seriously affected by outages associated with grid fluctuations.
- Reliability—Power available in excess of 99.99% of the time when connected to the grid.
- High Efficiency—Lower energy cost.
- Clean Emissions—Near Zero Emissions, no harmful fumes or exhaust.
- Choice of Fuels—Natural gas, anaerobic digester gas (waste methane).
- Remote Monitoring—Remote diagnostics for early fault warning & real time troubleshooting.
- Flexible Siting

Retro-Commissioning—Case Study

County Scrutinizes Its Energy
Hunterdon, NJ

Courtesy of Hunterdon County Democrat
Thursday July 11, 2002

By Curtis Leeds

It was never a secret when county director of roads and bridges, John Glynn, had a tuna fish sandwich for lunch. The aroma lingered in the air for days. Some of his co-workers in the county administration building on Route 12 have complained that the building is sometimes too hot, or too cold. And county freeholder George Melick has been a vocal critic of what some people call Route 12 “chicken coop,” largely because of its high energy costs.

On Tuesday, the county freeholders learned that all the problems share the same root: heating, ventilation and air conditioning systems that haven’t been optimized.

The firm Dome-Tech Engineering of Edison is investigating and assessed the buildings’ energy usage problems. “We uncover comfort issues and high energy costs,” said Bruce Curtis, an engineer with the firm. When he’s done assessing a building, lower maintenance, lower energy costs and better air quality reward those who follow his recommendations, he said.

Dome-Tech’s work isn’t cheap. A study of the 115,000 square-foot justice center cost the county $73,000, and the company’s work at the 27,000 square foot administration building cost $14,000.

But energy isn’t cheap, either. The freeholders paid $279,000 last year in energy costs for the justice complex and $56,000 at the administration building. The good news is that JCP&L will pay half of Dome-Tech’s fee, and Mr. Curtis said the county will recoup its expense in less than two years through energy savings. He expects the county’s energy savings will be about 10% at the administration building and 45% at the justice complex.

Project Profile

- Type of facility—Admin Building
- System—HVAC
- Boiler Capacity—1000 MBH
- Energy Cost Savings—$5,500/yr
- 80 VAV Boxes
- 5 DX Air handlers
- Payback—1.8yrs
Retro-Commissioning—Case Study

There is no one factor that’s causing the excessive energy bills. Instead, it’s a combination of factors, some of which can be remedied as easily as re-programming an air-conditioning control unit or adjusting the speeds of fans. Others, such as what Mr. Curtis called “design defects” at the justice center, may cost more to correct. Mr. Curtis said that in some cases, improper materials were used, or the original engineering designs weren’t followed. But he said following his recommendations will result in more than $127,000 in annual energy savings.

The problems were not a complete surprise to county officials. County counsel Guy DeSapio told the board that about $90,000 of payments to the contractor of the justice center have been withheld because of the concerns, but he admitted that it may cost more than that to correct. Projects administrator Frank Bell said payments to the electrical contractor at the administration building have also been withheld.

The freeholders plan to conduct similar studies of other county buildings, including the south and north branches of the county library, the jail, and the historic courthouse, which is now undergoing renovations.

“They’re finding the savings,” said freeholder George Melick. “This is the taxpayer’s money we’re saving.”

Project Profile

- **Type of facility**—Justice Center
- **System**—HVAC
- **Boiler Capacity**—7000 MBH
- **Chiller Capacity**—500 tons
- **Energy Cost Savings**—$127,000/yr
- **100 VAV boxes**
- **5 Air Handlers**
- **Payback**—0.6yrs