



# A Building Clouds Solution

The EMS will monitor & track the building's progress towards its zero net energy goal

## Multi-Vendor Control Systems Work Together at the Highly Acclaimed Zero Net Energy Center

The International Brotherhood of Electrical Workers (IBEW) Local 595 and the Northern California Chapter of the National Electrical Contractors Association (NorCal NECA) needed a way to measure, control, and display systems from multiple vendors to meet “zero net energy” goals for their new training facility.



This was to be the first commercial building retrofit designed to meet the U.S. Department of Energy's requirements for zero net energy. This state-of-the-art facility has been named The Zero Net Energy Center and incorporates advanced lighting, HVAC systems and a unique building envelope with renewable energy systems in its design.

Building Clouds' solution will monitor and track the building's progress towards its zero net energy goal. Automated adjustments will occur in the background to ensure all systems are running optimally.

In addition to tracking the ZNEC's power generation and usage, the integrated Energy Management System ensures that all connected building systems work in harmony to exceed the energy conservation goals of the Obama Administration's Better Buildings Challenge. The ZNEC is designed to use 75% less energy compared to similar existing commercial buildings in the country. The Opendiem control system will optimize lighting and HVAC systems while taking advantage of natural lighting and automated operable windows for natural ventilation. Constant monitoring of building energy usage will be compared to the power generated by the ZNEC's wind turbines, solar tree, rooftop solar, and thermal solar systems.

### System Components

- Opendiem EMS Software by **Building Clouds**
- Control Systems Integration by **Energy ETC**
- Help Desk by **Energy ETC**
- Solar Photovoltaic Systems
- Solar Thermal Systems
- BACnet HVAC Systems
- BACnet Lighting System
- LonWorks Programmable Controllers
- Modbus Programmable Controllers
- Wind Turbine Systems
- Power Monitoring Systems
- OPC Clients/Servers