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Case Study

Class A Office Building in San Francisco's Jackson Square Gives Tenants a Web Based Temperature Control System

The Westlake Realty Group was faced with replacing a failing direct digital control (DDC) system for their central plant at 909 Montgomery Street in San Francisco. Westlake's Vice President and General Manager, Chris Marrs had been in discussions with some "traditional" DDC companies to replace the system. His meetings always ended the same way, he would get a replacement of the antiquated system which offered no modern bells and whistles, for what he considered an exorbitant price tag. He just kept thinking "...more of the same..."

Energy ETC was contacted to take a look at the project and approached it from a different point of view. Not only would they modernize the historic building's central plant, they would replace more than 100 stand-alone programmable thermostats with thermostats which connected to the "cloud" over Wi-Fi and formed a fully converged building management system (BMS) network. Water source heatpumps which had been operating on their own for years could now interact with the rest of the building, including the LonWorks DDC network for the central plant equipment.

Energy ETC designed and installed an 802.11 Wi-Fi infrastructure within the building for the new thermostats to connect to. Using software and LonWorks based hardware from Building Clouds, hardware and cloud services from cloudbeam, and programmable thermostats from Radio Thermostat of America, a fully integrated BMS for monitoring and controlling tenant comfort and energy usage throughout the building was installed.

In addition to complete BMS control via the internet by the Westlake's property managers, authorized tenants are now able to adjust set points and operational hours for each thermostat from an internet-connected web browser. An easy-to-navigate graphical user interface allows remote on/off control, 7-day programming of operating schedules and set points, graphing of historical data, email and text message alerts for alarms and maintenance.



System Components

Enterprise BMS Software, Opndiem by **Building Clouds**
LonWorks programmable controllers by **Building Clouds**
Control Systems Integration, EMS Hosting Services, and
Helpdesk by **Energy ETC**
Wi-Fi access points by **Engenius**
Cloud Based Services, and hardware by **Cloudbeam**
Programmable thermostats by **Radio Thermostat of America**

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System Details

Field technicians replaced the existing thermostats with Wi-Fi enabled units and simultaneously provisioned them onto the Cloudbeam remote server over the Wi-Fi network. Energy ETC used the Opendiem software suite of products by Building Clouds to integrate the data from the cloud into a cohesive BMS presentation over the web. As devices were provisioned, users were able to begin using their new control system immediately.

A monthly subscription fee allows Westlake and their tenants worry free, 24x7 access to the BMS Portal via Software as a Service. The cloud server running the portal is located in a secure data center and receives regularly scheduled data backups and maintenance including operating system updates and patches. Helpdesk support is provided Monday through Friday from 8:00am until 5:00pm.

This modern, feature rich solution designed and installed by Energy ETC adds tremendous value to one of San Francisco's premiere class A office buildings. The labor saved by using Wi-Fi for the communication path enabled Westlake to give their tenants control over their office spaces. Having global and ultimate control of the individual heatpumps will provide significant energy savings at this property.

Savings from reduced service calls may prove to be even greater than the energy savings. Westlake's property managers will avoid making service requests to address hot and cold complaints from their tenants, these changes can now be made remotely and often before the customer knows there is a problem.

Building Management System Features

- Monitor and control all connected thermostats and plant equipment from a web browser or smart phone app.
- Set occupancy schedules individually, or create custom groups of tenants.
- Set holiday schedules up to two years in advance.
- See all out of specification, alarm conditions from a single screen.
- Run usage reports, and temperature performance graphs.
- Alert maintenance staff of faults or temperature issues via email or text message.
- Easily add lighting, irrigation and more to the Wi-Fi BMS ecosystem and portal.
- All devices attached to the Wi-Fi BMS ecosystem are automated demand response (ADR) ready and can accept a signal from a utility demand response server (DRAS) and automatically reduce energy usage during high cost periods.

Manage Settings for Zone 02_209

This zone's temperature was 74.5 °F at 10/31/2012 9:59:10 AM
The heating target was 70 °F, cooling target was 74 °F

After Hours AC Request:

Change my temperature set point to:

AC Unit Fan Operation:

This building participates in Westlake Realty Group's® Green Property Management Automated energy management routines will periodically reset HVAC equipment to energy saving settings during unoccupied hours. [More Info](#)



Tenants control their space with custom web browser screens