



Energy Information Made Obvius



## University Case Study

A major research university in California operates a campus that encompasses more than 1,600 acres, with more than 130 academic departments, and an estimated enrollment of 35,000 graduate and under-graduate students. As part of a strategic energy plan, the university sought energy efficiency projects in existing buildings to reduce system-wide, growth adjusted, energy consumption by 10% or more by 2014 from the year 2000 base consumption level. But before the school could implement cost-saving retrofit measures, it was necessary to understand how much, and when, specific energy was being used.

“We were trying to conserve energy and wanted to ramp up our conservation efforts,” explained the Supervisor of Electrical Engineering. “One of the first steps we were going to have to do is establish a baseline of energy usage for buildings. So we needed something that was capable of monitoring continually and storing the data.”

After reviewing a number of leading data acquisition hardware companies, the school selected Obvius of Hillsboro, Oregon.

“I think the main reason the school selected Obvius was because no software was required, no software licenses were required, no annual license renewals were going to have to be done and that it’s a very open architecture,” the Supervisor continued. “Two other companies wanted to sell their meter, their software and their system. That would mean that every year we would have to renew the software licenses and probably would be stuck with buying their meters.

“What I really like is that Obvius has a huge list of meters from different manufacturers that you can buy and these meters will communicate with the Obvius product. So that was very appealing to me. With the university being a public entity, we usually require competitive bidding so this would allow us to competitively bid the meters and get good prices.

“That was probably number one with me, but what I also liked is that it was simple to use. I didn’t have to read any books. I could just go to the web site, it was very intuitive and the way that the data is presented is very clear and easy to use and very meaningful. There’s not a lot of extra data there. Everything that’s there is normally what you would want—no more, no less.”

Obvius’ A8812 AcquiSuite™ is now being used in 29 buildings and the number continues to grow as funds become available. Currently, 4.4 million square feet are being monitored. While the plan is to eventually monitor all main campus buildings, the current focus is on those buildings of 50,000 square feet or more.

The university first deployed the hardware in September 2005 and, with the data, has realized energy savings ranging from 8% to 30% per building for electricity and steam, where the system is installed. Last year alone, the university reduced its energy usage by 814,000 kWh.

As part of the monitoring-based commissioning, the AcquiSuite, along with the electric and steam meters, is used to collect the data and establish a baseline for each building’s energy usage. Obvius, in combination with the electric and steam meters, has enabled the university to monitor consumption at each building where the system is installed.

### ABOUT OBVIUS

Obvius manufactures data acquisition and wireless connectivity products specifically for energy management. We deliver cost-effective, reliable hardware designed to speed up installation. Our products are based on an open architecture allowing our customers to collect and log energy information from virtually any meter or sensor. The ability to support multiple communication options provides remote access to all your energy information. Founded in 2003, Obvius is located in Hillsboro, Oregon. We serve a global clientele and continue to drive innovation by simplifying data collection.

### SOLUTIONS

- Data Acquisition
- Wireless Communication
- Meters & Sensors
- Custom Packaged Solutions
- Integration & Software Partners

### HEADQUARTERS

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## University Case Study (continued)

“We have a baseline, they do their project (energy retrofits and commissioning) and then we’re able to measure what the savings were due to the project that took place,” the Supervisor explained. “That’s probably the most important aspect of what the product does for us.”

Much of the electrical savings can be attributed to monitoring-based commissioning and lighting retrofits that consist of replacing lamps and ballasts and installing occupancy sensors. High intensity discharge (HID) fixtures as well as both high and low pressure sodium have been replaced with fluorescent or metal halide fixtures.

“I also use this to look at what’s happening to our electrical system—for example, long-term variations of voltages in different buildings,” the Supervisor said. “If the voltage is dropping for a few hours or a few days I can see that. I can see the power factor. In most of these buildings, we are putting in meters that can also measure harmonics so I can see the harmonics in those buildings where we have that feature. These are all things that help me a lot.

“I can also look at the load on transformers so I can make decisions on the transformers,” he continued. “Sometimes we have to shift load around from one transformer to another one, so I am able to look at the history and see what historically the load’s been and are we able to move them from one transformer to another without overloading a given transformer.”

Even when the Supervisor of Electrical Engineering is away from his desk, he can keep tabs on the meter readings. Using Obvius’ Building Manager Online on any web browser, any user can view the meter readings from the AcquiSuite, provided they have proper access (username and password).

Another product being utilized is Obvius’ ModHopper, a wireless Modbus/Pulse transceiver. Where utilized, data from a meter is passed to a series of ModHopper wireless transceivers in a mesh network until it reaches its intended destination (the Obvius AcquiSuite 8812). This is an ideal unobtrusive way for colleges and universities to collect meter readings from their existing buildings without core drilling, trenching and running wires.

The Supervisor’s recommendation is simple. “I would suggest someone start out with a pilot program, maybe one or two buildings like we did. Use a few systems and try the product for a while. For example, I tried a product from another company. As advertised, it sounded like everything Obvius would do, but when I got the product I was pretty disappointed. It gave me real time data, but I could not get kilowatt hour information out of it. To me, that should be kind of basic information. Then, it took a really long time to get the data uploaded for me to look at it. And then the data was not filtered. It was not what I was looking for.

“What I like with Obvius is that it filters data, uploads are very quick and the data is presented in a very easy way to use,” he explained. “I have never had to read any instruction books. It’s pretty intuitive. All buttons are self-explanatory and you can pretty much customize what period of time you want to see the data for—whether it was for the last 24 hours or the last week or a week this year compared to a week a year ago.”

And with the university continuing to monitor more buildings, ease of use is paramount.



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