



Case Study: DPR Construction

DPR Construction Uses Real-time Monitoring to Engage Employees and Achieve Sustainability Targets

For DPR Construction, ranked among the top 50 general contractors in the U.S., sustainability is a core value that is embodied in every aspect of their business, from the construction and renovation process to how DPR's corporate offices are built and managed. The California-based company is a national leader in the design and building of advanced technology facilities, medical buildings, life science laboratories and manufacturing facilities, and corporate headquarters. DPR's innovation extends from the \$1 billion devoted to green building projects to their own facilities and operations.

At their recently completed office in San Diego, DPR has continued to push the envelope: they've constructed their first Net Zero Energy office, which is expected to earn LEED Platinum certification. The San Diego office has a multifaceted approach to saving energy that involves everyone in the company. A key part of that approach is using Building Dashboard® to monitor and display resource consumption.



How It Works

Building Dashboard collects real-time data on electricity, water and natural gas consumption and solar electricity production from DPR's building automation system. The Dashboard is made available to all employees and staff on the web and on a touchscreen monitor located in a high-traffic area of the office.

Using Building Dashboard to Benchmark Performance

Since the opening of the Net Zero Energy office DPR staff have been tasked with ensuring that the office produces more energy than it consumes, which means constantly trying to find ways reduce consumption. While using the building's existing management reporting system, Whitney Dorn, Project Manager and Sustainability Support for DPR, found Building Dashboard to be a more accessible and useful way to track their consumption and compare trends to their desired performance. By using the Comparison App they can evaluate current performance with consumption the previous week and track changes in usage over time.

In the first six months of occupying the building DPR is meeting their Net Zero Energy goals, but are finding some surprising things with regard to consumption patterns. The first issue has been that the lighting system is not performing as well as planned, which has led staff to find ways to make improvements.

Another surprise was the discovery of how much phantom loads were consuming – in other words, the energy consumed by plugged-in devices while not in use. So far plug loads from office appliances have been consuming around 4,000 kWh per month, 20% higher than originally anticipated. Phantom loads represent a

substantial opportunity to improve building performance by engaging employees to change behavior.

Employee Engagement

In the first weeks of the Dashboard deployment, Dorn received ten emails from employees who had noticed higher than normal plug load consumption, and asked what they could do to contribute to reducing the phantom loads. “In essence, the Dashboard created a great education opportunity for us,” said Dorn, who has been facilitating internal conversations about what can be done to reduce.

Suggestions have ranged from unplugging unused equipment, to turning down the lights at night, to putting the large coffee makers on a timer so they aren’t heating water all night. “It has been great to get suggestions from all parts of the company. The emails are coming from people I never guessed would have the slightest interest.”

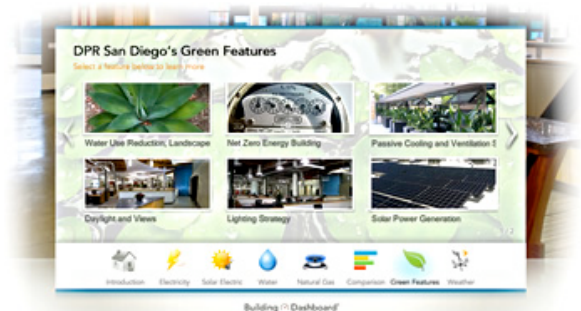
So far, by using timers on circuits and appliances and encouraging people to shut off electrical devices when they go home, DPR estimates they can reduce 24 to 48 kilowatt-hours per day, saving up to 17,000 kWh per year. The savings they observe on the Dashboard has served as reinforcing feedback, continuing to motivate staff and employees to find additional ways to save.

Beyond electricity savings that they are seeing, Dorn says, “the Dashboard has really created a sense of a team, that we have a collective effort. It democratized our efforts to the point where we no longer have a green team, but a green office.”

Communicating the Commitment to Sustainability

In addition to engaging employees and helping staff manage ongoing building performance, DPR is using Building Dashboard to communicate their commitment to sustainability inside and outside the office. A large touchscreen display in the lobby is used to enhance tours with potential clients, subcontractor and vendors; educate industry professionals during regular meetups (such as the monthly U.S. Green Building Council programs) and open houses with architects and clients; and enlighten VIPs such as the local utility and large metering companies.

“One of the biggest things the Dashboard has helped us do is build confidence in our building. We made a bold goal in committing to Zero Energy, and now we have immediate feedback as to whether or not we are achieving those goals,” said Dorn.



The Future

As their sustainability efforts extend beyond the San Diego office, DPR is analyzing a proposal to expand the use of Building Dashboard to include all of their offices. “Given the spirit of the company, it would be really great to have competitions between the regional offices to see who could reduce the most in lighting or plug loads,” says Dorn. “Not only would it help us save electricity and money, but it would reflect our corporate goals.”