Oregon Department of Administrative Services

The Oregon Department of Administrative Services (OR DAS) is a state agency with a diverse range building types in its portfolio. To track the performance of its 44 buildings effectively, the agency relies on two key elements: its people and its technology.

Tracking and managing building performance is an integral part of the agency's larger Sustainability Plan. OR DAS has top-down mandates to reduce energy use by 20% from 2000 levels by 2015, which it had already reached and surpassed by 2010. Integrating building performance tracking into the agency's overall vision and direction has been key to this success. For example, by including forecasted energy reductions in its budget, facility operators and tenants alike are motivated to curb waste or risk budget cutbacks.

OR DAS relies on several tools to support their goals:

1. **Utility Manager**
(Energy benchmarking and utility bill analysis):

   - Compare past versus current energy use
   - Compare energy use of a single building to the portfolio
   - Track progress toward energy savings goals

2. **Northwrite's Energy Expert**
(Advanced Energy Information System):

   - Continuously collect and analyze whole-building energy use data
   - Instantly alert operators when demand is higher than expected
   - Track short-term dips and spikes in energy use

The Executive Building in Salem, OR

> "It's critical to have people who understand the data and know what to do with it."
>
> — Elin Shepard
> Former Sustainability Coordinator, OR DAS

What is Building Performance Tracking?

The process of monitoring facility data on a regular basis to continually improve building energy performance. The four steps below detail the fundamental process for tracking, analyzing, diagnosing, and resolving issues with heating, ventilation, and air conditioning (HVAC) and lighting systems.

1. Collect data and track performance
2. Detect performance issues
3. Diagnose issues and identify solutions
4. Fix issues and verify results

Building performance is tracked on an ongoing basis and incorporated as part of standard processes.

Quick Facts

OWNER:	Oregon Department of Administrative Services (OR DAS)
FACILITIES:	Portfolio of 44 buildings
LOCATION:	Salem, OR
TOTAL BUILDINGS:	44
BUILDING TYPES:	Mixed, including offices, warehouses, a library, and a data center.

PERFORMANCE TRACKING STRATEGIES:

- Energy benchmarking and utility bill analysis to compare energy use across buildings and over time
- Advanced Energy Information System (EIS) for whole building energy analysis and alerts
- Building Automation System (BAS) and data loggers for troubleshooting problems

3. **Building Automation System and data loggers**

- Dig deeper into system performance issues and excessive energy use

The agency estimates that using these tools resulted in a return on investment (ROI) of over 50% through avoided energy costs alone.

Examples of cost savings include the following:

- During one October furlough, Energy Expert showed that heating and cooling units did not shut down. Scheduling was adjusted, resulting in significant savings.

- Energy Expert alerted operators to a higher power draw than was normal on a hot summer day. Using the BAS and data loggers, they found and fixed a faulty economizer.

The people and processes behind the tools are just as critical as the technology. OR DAS wisely invested in training for operators to understand and use the tools effectively. Most importantly, the operators have the time needed to interpret data from the tools and to fix what they find.

OR DAS also engages occupants by conducting night-time audits of office spaces. Occupants receive electricity scorecards with their progress in reducing energy use, and simple ways to improve. This strategy helps promote the organization's sustainability plan and spread the responsibility for improving building performance.

Lessons Learned

OR DAS learned lessons implementing building performance tracking tools that are widely applicable elsewhere:

- Achieve agency-wide buy-in and set goals

- Engage occupants and tenants to drive continuous improvement

- Dedicate resources to understand and utilize the tools, including time, training, and educated staff

OR DAS's ability to combine technical tools with proactive people management exemplifies the coordination required for building performance tracking tools' potential to be maximized.

Building Performance Tracking 101

Elements of a supportive working environment:

- Clear goals

- Time and resources to utilize tools, analyze identified issues, and perform corrective action

- Sufficient training on tool capabilities

- Incorporate energy performance metrics in management reporting

- Communication among stakeholders

- Support from facility managers, building operators, financial decision-makers and senior management

- Direct digital controls and building-level energy meters

- IT support and server storage

"The tools help us discover problems faster."

— Phil Teague
Operations and Maintenance, OR DAS
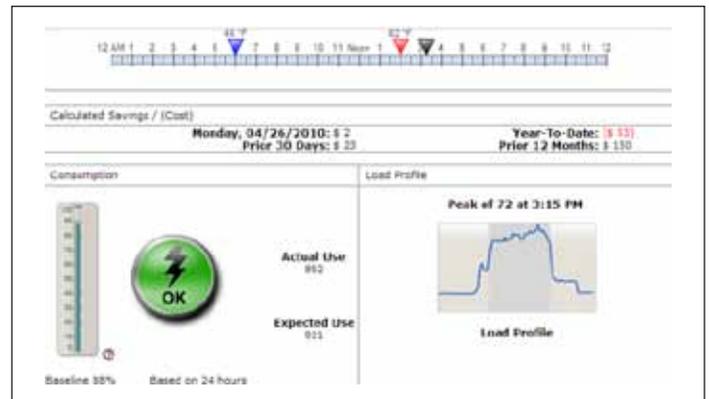
OR DAS compares actual to expected energy use through NorthWrite Energy Expert