



BETTERBRICKS

# BUILDING COMMISSIONING

## for better public buildings

### CASE STUDY

#### PURSUING LEED CERTIFICATION YIELDS UNEXPECTED BENEFITS



Marion County Courthouse Square

“The commissioning process was proven successful at the Courthouse Square, and should be used on all future projects.”

- Bob McCune, Facilities Manager

#### COMMISSIONING QUICK FACTS

- Building: Courthouse Square
- Location: Salem, OR
- Completion date: May, 2001
- Scope of project: New construction
- Commissioning cost: \$60,900<sup>1</sup>
- First-year cost benefit: \$17,300<sup>2</sup>
- Annual energy savings: \$8,780<sup>3</sup>

<sup>1</sup> Commissioning providers fee only.

<sup>2</sup> Cost reduction or avoidance.

<sup>3</sup> Annual energy savings based on cost of electricity of \$0.0494/kWh and natural gas of \$0.755 /therm.

When the City of Salem received voter approval to build a new transit mall facility they wanted proof they were going to get a good sustainable building. So they had it “certified”. The certification is part of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. The program issues certification ratings (certified, silver, gold and platinum) to buildings that meet national standards for high performance and sustainability. The requirements specify that the owners must commission the building to ensure energy efficiency and good environmental quality. The Courthouse Square Transit Mall facility was commissioned, and as a result, reaped more benefits than just the LEED certification.

The Courthouse Square Transit Mall is located in downtown Salem and has the distinction of being the fifth tallest building in the city. About half of the ground level area consists of a mass transit transfer station. The five-story brick building contains nearly 160,000 square feet of floor space as well as underground parking. Marion County administrative staff occupies the majority of the building. There is 90 miles of telephone and data cable in the building and enough concrete in Courthouse Square for a sidewalk from Salem to Portland.

#### BUILDING COMMISSIONING

Is a systematic and documented process of ensuring that the owner’s operational needs are met, building systems perform efficiently, and building operators are properly trained.

over



Transit mall at Courthouse Square

The independent commissioning provider identified 101 recommendations of which 13 were considered critical to achieve the desired building performance. Some of the major issues concerned inaccurate flow and temperature sensors; excessive running of cooling units; improper control of supply air temperatures; morning warm-up and economizer cycle problems; and establishing appropriate minimum outside air levels. In addition, the lobby could not be heated sufficiently on cold days. All of these issues were identified and resolved through the commissioning process during the construction and start-up phases.

As a result, occupant comfort was assured from the beginning and at lower levels of electricity and natural gas usage. More importantly, the building had few operational deficiencies at start-up.

### LESSONS LEARNED

- Begin commissioning early on in the design phase.
- Discuss the commissioning process with all parties involved (contractors, facility people, etc.) to avoid surprises or resistance.
- Prioritize and correct identified issues based on energy savings and occupant comfort.

### COMMISSIONING BENEFITS

- A fully functional building at occupancy.
- Assurance of good indoor air quality and thermal comfort
- Operation of equipment as intended
- Extended equipment life
- Reduced maintenance

“I wish we had started commissioning during the design phase so we could have more easily fixed problems through design changes.”

- Bob McCune, Facilities Manager

### PROJECT PARTNERS

- MARION COUNTY FACILITIES  
Contact: Bob McCune  
[www.buildingservices.co.marion.or.us](http://www.buildingservices.co.marion.or.us)
- COMMISSIONING PROVIDER  
Environmental & Engineering Services, Inc.  
Contact: Steve Barney  
[www.peak.org/~eesi](http://www.peak.org/~eesi)

### SPONSORED BY

- BETTERBRICKS  
[www.BetterBricks.com](http://www.BetterBricks.com)  
1.888.216.5357

### FOR MORE INFORMATION

- OREGON DEPARTMENT OF ENERGY  
1.800.221.8035  
[www.energy.state.or.us](http://www.energy.state.or.us)



OREGON OFFICE  
OF ENERGY

BETTERBRICKS IS AN INITIATIVE OF THE  NORTHWEST ENERGY EFFICIENCY ALLIANCE

The Alliance is a non-profit group of electric utilities, state governments, public interest groups and efficiency industry representatives working to make affordable, energy-efficient products and services available in the market place.