BETTERBRICKS
Stimulating Demand and Supply of Energy Efficient Products and Services in the Marketplace

Presented at the Behavior, Energy & Climate Change Conference
Sacramento, California
November 19, 2008
Vision: Energy efficiency is a cornerstone of a vibrant sustainable Northwest.

Mission: Mobilize the Northwest to become increasingly energy efficient for a sustainable future.
THE NORTHWEST ENERGY EFFICIENCY ALLIANCE
Who we are

Owners:
Bonneville Power Administration
Energy Trust of Oregon
More than 130 electric utilities across Wash, Ore., Mont. and Idaho

Supported by:
State governments
Energy industry representatives
Public interest groups

Team:
~30 full-time staff
~ wide range of contractors

Brands:
Northwest ENERGY STAR
BetterBricks
Continuous Energy Improvement
BetterBricks includes a focus on business decision-making practices and trade ally offerings. Stimulating both the demand for and supply of energy efficient products and services in the market represents the central theme of BetterBricks.
**Business Practice Change:** Energy related business practices span an organization, including facility operations, procurement of equipment and services, facility upgrades and new construction.

“It is so much more valuable to have a system approach than approaching energy efficiency with this or that project. The SEMP looks much more deeply, including things we didn’t even think of, like purchasing and training. We didn’t know what we didn’t know!”

Medrice Coluccio, PeaceHealth, CEO Lower Columbia Region

“For me, the turning point was discovering a strategic approach to energy management… I learned how to make a well-planned financial case, one that contributes directly to the hospital’s bottom line.”

Bill Morgan, Engineering Manager St. Alphonsus Regional Medical Center, Boise, ID
BUSINESS PRACTICE CHANGE
Where is the Energy Savings Value?

New Building Design & Construction

- Integrated Design: 50% energy savings plus savings potential
- Partial Integrated Design: 25% energy savings
- Energy Efficiency Measures: 15% energy savings

Existing Building Operations

- Operating Performance: 10-15% energy savings
- Purchasing & Procurement: 5-10% energy savings
- Capital Upgrades: 15% energy savings

30% plus savings potential
HOSPITALS & HEALTHCARE
Strategic Energy Management Plans (SEMP)

2006

Aware: Legacy Health Systems, Overlake Hospital, Kalispell Regional Medical Center, St. Lukes, Willamette Falls

Engaged: PeaceHealth, Good Samaritan

Committed:

Practicing: Providence Health & Services

Sustaining: N/A

2008

Aware: Empire Health Services,, Overlake Hospital, Good Samaritan, Virginia Mason

Engaged: Oregon Health Sciences University (OHSU)

Committed: Billings Clinic, UW Medical Center, Swedish Hospital

Practicing: PeaceHealth, Kalispell Regional Medical Center, Willamette Falls, St. Alphonsus, St. Luke’s, Legacy Health Systems

Sustaining: Providence Health & Services

2008: A third of the Market Committed or Practicing SEMP, with Initial Goals Ranging from 10-30% Reduction in Energy Use
### Providence Health & Services

- Largest NW Healthcare System
- Current SEMP Target = 10% savings
- Automated Benchmarking/Tracking
- Financial Parameters/Lifecycle Costing
- Equipment Purchasing Specifications
- Construction Manager Best Practices
- Piloting Building Performance Services
- Added 2 million sq.ft. at no increase in energy use
- 2007 Energy Star partner of the year

### PeaceHealth

- Half dozen facilities located in NW
- Current SEMP Target = 10% savings
- Created System-wide SEMP Management committee
- Benchmarking/Tracking Energy Use
- Standardizing purchasing specs
- Implementing building performance services
- Achieved 3% energy savings in 1st yr
- 2007 BetterBricks Award winner
OFFICE REAL ESTATE
High Performance Portfolio Framework

Assess, Commit, Plan, Implement and Capitalize on Success

1. ASSESS portfolio and building practices
2. COMMIT to energy targets and scope of work
3. PLAN actionable pathways to meet energy targets
4. IMPLEMENT plans and adjust business operations
OFFICE REAL ESTATE
BetterBricks Assessment Process

**Corporate Vision/Strategy**
Your market position – now and in the future?

**Energy Management Overview**
What defines energy management? Where and how does it occur in your firm?

**Portfolio-wide Practices**
How is energy managed across the portfolio?

**Building-specific Practices**
In representative properties?

**Analysis & Recommendations**
Where are the opportunities?

**Planning & Prioritization**
How do we get there?

**Key Topic Areas**
- Future outlook and corporate goals
- Core-competencies
- Relationship to energy/sustainability initiatives
- Partnerships and alliances, etc.

**Theme**
- Energy/sustainability targets and teams
- Energy performance benchmarking
- Professional development and recognition
- Lease administration and structure
- Building operating performance and O&M
- Capital investment decision making
- Tenant relations and awareness
- Broker education and negotiations

- Review assessment findings
- Scoping study results
- Leasing analyses results
- Overlay with corporate objectives, critical timing
- Build menu of potential task items

- Discuss and rank most promising tasks
- Evaluate resources and capacity
- Develop and modify energy/sustainability plans
The Architecture 2030 Challenge calls for all new buildings to be designed to use half the energy typically consumed (with further increases in efficiency over time). Those adopting the Challenge are encouraged to achieve the reductions largely through integrated design, i.e., building shape and orientation, natural heating and cooling, daylighting and ventilation strategies, proper shading and off-the-shelf energy efficiency measures.

“We have been very pleased with the depth of resources and knowledge brought by BetterBricks. The timing has been perfect. We were ready, things are happening. It is not always smooth, however, we will overcome these obstacles. Together we will make a difference.”

Mackenzie Skene, NBBJ Partner
Puget Sound - University of Washington
Portland/Eugene - University of Oregon
Boise - University of Idaho
Spokane - Washington State University
Bozeman - Montana State University
Integrated design synthesizes climate, use, loads and systems resulting in a comfortable and productive interior environment and a building that is significantly more energy efficient than current best practices.
DESIGN & CONSTRUCTION
Integrated Design

Providence Newburg

Classrooms, Mount Angel Abbey, OR

Ben Franklin Elementary School
Kirkland, WA

Banner Bank, Boise, ID

OHSU, Center for Health & Healing
Portland, OR
<table>
<thead>
<tr>
<th>Company A</th>
<th>Level</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Practices</td>
<td>2</td>
<td>Strategic and business plan assessment, Org. structure review, recommendations, selling Cx to owners, services for commercial real estate,</td>
</tr>
<tr>
<td>Marketing</td>
<td>1</td>
<td>Office market strategies, assist with real estate developer/owner relationships</td>
</tr>
<tr>
<td>P&amp;S Development</td>
<td>3</td>
<td>High performance hospital prototype to meet 2030 targets. Office market materials/strategies (e.g. TI manual), POE advice</td>
</tr>
<tr>
<td>Staff Development</td>
<td>2</td>
<td>Integrated design process, Interactive sessions with international experts</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>3</td>
<td>Project-based education on hospitals, offices, Modeling support, Cx scope, engineer peer review.</td>
</tr>
</tbody>
</table>

1 = Limited, 2 = Active, 3 = Extensive
DESIGN & CONSTRUCTION
Reaching the Broader Market

SRG Brochure on Mount Angel

ZGF Brochure on Patient Room Study

Guide to the Design and Construction of High Performance Hospitals

AIA 2030

Mount Angel Abbey

Core Performance Guide

Daylighting Hospital Patient Rooms:
A Transformation of a Student Hospital in Charley

BCA Building Commissioning Association
“There is a no-regrets answer to reducing the amount of energy used in buildings and reducing emissions, and that is improved building operations.”
Bill Harrison, 2008 – 09 ASHRAE President

“The Building Performance Services Test was a significant catalyst in helping us focus on the idea of highly efficient operations.”
Ash Awad, VP Energy and Facility Services, McKinstry

“The Building Performance Services process gives us the opportunity to look at the whole facility, identify the trouble spots and resolve those issues for the least cost.”
Karl Friesen, PE, LEED AP, Sr. Account Executive, CCI
BUILDING OPERATIONS
Product & Service Development

Screening
- Benchmarking & Analysis
- ENERGY STAR® Portfolio Manager

Scoping
- High Level Identification of Opportunities
- Proposal for Follow-on Diagnostic Activities

Enhanced O&M Practices
- Assessment of O&M Practices
- Monitor KPIs
- Enhanced O&M Practices Action Plan

Energy Tune-Up
- Diagnostic Testing
- Operational Changes
- Immediate Fixes
- Energy Tune-Up Action Plan

Commissioning
- Comprehensive Functional Testing
- Commissioning Reports

Equipment Replacement
- Assist with Utility Coordination for Capital Projects
BUILDING OPERATIONS
Operating Performance

One Convention Place
Seattle, WA

Columbia Center
Seattle WA

Kaiser East Interstate

Fatigue Technologies

Bank of America
Branch Offices

Croet Building at OHSU
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<tr>
<th>Company B</th>
<th>Level</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Practices</td>
<td>2</td>
<td>Set sales targets for enhanced services.</td>
</tr>
<tr>
<td>Marketing</td>
<td>2</td>
<td>Use of brochures; In-house sales training</td>
</tr>
<tr>
<td>P&amp;S Development</td>
<td>2</td>
<td>Development of enhanced service package; O&amp;M assessment tool.</td>
</tr>
<tr>
<td>Staff Development</td>
<td>2</td>
<td>FDSI training in-house with refresher.</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>2</td>
<td>TA assistance in the field; Energy savings verification and service delivery review.</td>
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BUILDING OPERATIONS
Reaching the Broader Market

Better Building Operations – Website tools

Service Provider Marketing Tools

Available Software Tools

Several software tools are available to help you with Utility Bill Tracking, Benchmarking, and Trend Logging. Some utilities and your utility’s office may offer some of these tools to their customers. In many cases, it’s a charge. The U.S. Environmental Protection Agency (EPA) offers a free tool. Other tools are available for a fee from various software companies.

Collect Data for Tracking Utility Bills

Introduction

Electric utilities bill their customers, but ultimately provide the most information—energy conservation.

Best Practices for Trend Logging Tools

Introduction

While many trend logging tools perform basic functions such as graphing energy demand over time, some offer additional features that can help you better understand your building performance. These “best practice” features include:

- Adjusting for weather conditions
- Providing good navigational tools

Adjusting for Weather Conditions

The temperature of the air outside can dramatically affect building energy demand. Trend logging tools combine these variations with corresponding energy load data. This allows the building operator to identify patterns, such as whether an increase in heating or cooling load is due to more people or a change in outside air temperature.

For example, a sudden increase in electrical demand may be due to an increase in outside air temperature rather than an increase in occupancy. This helps operators make informed decisions about energy use and facilities management.

Graph of electrical demand provides visual trends.

In summary, using trend logging tools effectively can help operators understand and manage energy usage more efficiently.
January 2006 – October 1, 2008:

- 261 events
  - conferences
  - seminars/workshops
  - brown bags/monthly meetings
  - webinars/webcasts
- 9,200+ attendees
- Building Operations = 127 events
  - Grocery - 5
  - Hospital & Healthcare - 13
  - Real Estate - 31
  - Non-Targeted - 78
- Design & Construction = 124 events
  - Grocery - 1
  - Hospital & Healthcare - 10
  - Real Estate - 8
  - Non-Targeted - 105
- Business Practices = 10 events
Regional Partners
“It’s a terrific opportunity. I hope that we continue the partnership for years. Energy efficiency is the number one interest of our members.”

Susan Steward, Executive Director, BOMA Portland