How To Sell It
Communicating energy efficiency effectively

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Smart Energy Design Assistance Center (SEDAC), University of Illinois at Urbana Champaign

Providing effective strategies for public and private buildings in Illinois
Presentation Outline

i. Introduction
   - Questions to think about

ii. Building a case
   - Understanding motivation(s) and deterrent(s)
   - Marketing

iii. Implementing
   - Best practices
   - Financial analysis

iv. Discussion

v. Bonus Materials
Introduction
Questions to Think About

Who are the players that affect the process of designing an energy efficient building?
Questions to Think About

Who do we have here today?
Questions to Think About

From your experiences, what are some of the objectives of these players that may **promote** or **hinder** energy efficiency?

AHJs ____________________________
Developers ______________________
Owners __________________________
Designers ________________________
Contractors ______________________
Incentive providers ________________
Green building raters _____________
Who else? _________________________

Capital providers____________________
Agents____________________________
Users______________________________
Engineers__________________________
Material & equip. suppliers___________

Image from Energy Efficiency in Buildings, by World Business Council for Sustainable Development
Building a case
Understanding Motivation(s)
The Drivers Behind High Performance/ Green Design
(Reported Motivators)

Study by Deloitte & Lockwood 2008, *The Dollars & Sense of Green Retrofits*

- Greater indoor air and environmental quality: 88%
- Corporate environmental commitment: 88%
- Value of public relations and free publicity: 75%
- Greater workforce productivity: 75%
- Operational cost savings from energy efficiency: 75%
- Attraction and retention of quality workforce: 69%
- Greater overall building value: 31%
- Higher occupancy rates: 19%
- Operational cost savings from water efficiency: 19%
- Reduction of greenhouse gas (GHG) liability: 13%

Lots of this!
Not so much of this
**Understanding Motivation(s)**
The Drivers Behind High Performance/ Green Design (Reported Impacts)

Study by Deloitte & Lockwood 2008, *The Dollars & Sense of Green Retrofits*

<table>
<thead>
<tr>
<th>Category</th>
<th>Increased significantly</th>
<th>Increased slightly</th>
<th>Decreased significantly</th>
<th>Decreased slightly</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goodwill/brand equity</td>
<td>69%</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee comfort</td>
<td>62%</td>
<td>25%</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to attract talent</td>
<td>40%</td>
<td>53%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee well-being</td>
<td>38%</td>
<td>49%</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee health</td>
<td>37%</td>
<td>38%</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to retain talent</td>
<td>31%</td>
<td>50%</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce productivity</td>
<td>31%</td>
<td>56%</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupancy levels</td>
<td>19%</td>
<td>19%</td>
<td>62%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property value</td>
<td>13%</td>
<td>38%</td>
<td>49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total renovation time</td>
<td>29%</td>
<td>57%</td>
<td>7%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Permit processing time</td>
<td>7%</td>
<td>86%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance rates</td>
<td>93%</td>
<td>7%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Understanding Motivation(s)
The Drivers Behind High Performance/ Green Design
(Reported Impacts)
Study by Deloitte & Lockwood 2008, The Dollars & Sense of Green Retrofits

Increased (significantly/ slightly):
1. Goodwill/ brand equity (69/ 31%)
2. Employee comfort (62/ 25%)
3. Ability to attract talent (40/ 53%)
4. Employee well-being (38/ 49%)
5. Employee health (37/ 38%)
6. Ability to retain talent (31/ 50%)
7. Workforce productivity (31/ 56%)
8. Occupancy levels (19/ 19%)
9. Property value (13/ 38%)
Understanding Motivation(s)*
Survey of perceived barriers to green buildings

From: *Energy Efficiency in Buildings*,
by World Business Council for Sustainable Development

Do financiers really have the ultimate decision making authority?

*and deterrent(s)*
Understanding Motivation(s)*
What is the cost premium?

*and deterrent(s)

<table>
<thead>
<tr>
<th>Level of Green Certification</th>
<th>Average Green Premium (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1-Certified (8 buildings)</td>
<td>0.66%</td>
</tr>
<tr>
<td>Level 2-Silver (21 buildings)</td>
<td>1.91%</td>
</tr>
<tr>
<td>Level 3-Gold (9 buildings)</td>
<td>2.23%</td>
</tr>
<tr>
<td>Level 4-Platinium (2 buildings)</td>
<td>6.80%</td>
</tr>
</tbody>
</table>

Understanding Motivation(s)*

Perceptions of green building cost increases from a survey of professionals

- Actual expected costs increase is 0-5% of project

*and deterrent(s)
Understanding Motivation(s)*

High cost? Low cost?

Cost per SF
138 LEED and non-LEED: libraries, laboratories, academic building

Only difference was the intent to incorporate sustainable design for LEED.

- Non-LEED
- Certified
- Silver
- Gold or Platinum

*and deterrent(s)

High cost buildings are not necessarily high performing (and vice-versa)!

Understanding Motivation(s)*
Are people motivated by saving money over the long term?

Behavioral science literature confirms that people still choose inaction even when it is in their self-economic interest to act.

Consortium for Energy Efficiency, Ashby et al. 2010
Precourt Energy Efficiency Center at Stanford
Understanding Motivation(s)

Summer Climate Shift
Based on current emissions pathway

2010

Summer Climate Shift
Based on current emissions pathway

2030

Summer Climate Shift
Based on current emissions pathway

2050

Summer Climate Shift
Based on current emissions pathway

2099
When Selling Energy Efficiency, Don't Say 'Retrofit,' Say 'Upgrade' -- Study

By JENNY MANDL of Greenwire

Published: October 5, 2010

Give the people what they want. Know your customer. Make it easy to do the right thing.

These are some of the common-sense recommendations featured in a new report that highlights just how unprepared many energy program designers are when it comes to selling efficiency to the public.

In a study (pdf) of programs aimed at improving residential energy efficiency, researchers at the Lawrence Berkeley National Laboratory
Marketing
Ideas/ Questions to Think About

1. Learn the business culture
2. Remember that each client is unique!
3. Meet them where they are now or lead them further?
4. Who is(are) the key stakeholder(s)?
5. What is the motivation for choosing high performance?
6. If their motivation doesn’t exist yet can you cultivate it?
Marketing
Finding/ Becoming an Advocate

1. Does the owner already understand the value particular consultants can provide?
2. Can the team address concerns of owner as well as concerns of the building operator, and occupants?
3. Is there good owner/ consultant rapport?
4. Do the team members have a good record of demonstrable energy efficient projects?
5. Do the team members have appropriate training/ certifications
   - Professional memberships & licensure
   - Certified Energy Manager (AEE)
   - LEED (USGBC)
6. Is a building energy efficiency specialist consultation needed? (maybe one that is FREE?)
Implementing
Best Practices
Ideas/ Approaches

- Cost effective measures
- Understanding and stating the owner’s project requirements (OPR)
- Continual reassessment/ improvement
- Good communication!
  - Integrated project approach
  - Recognizing goals of the key players

Conventional

Collaborative

Images courtesy of USGBC
Best Practices
When to do Integrated design

Impact building performance diminishes over time

- Building performance
- Cost and disruption

Source: Solidar, Berlin Germany.

Time

Preliminary design | Design | Construction | Operation

Low | High

Energy Efficiency in Buildings, by World Business Council for Sustainable Development
Financial Analysis
Choosing appropriate projects/ strategies

Methods for Evaluating Energy Cost Reduction Projects:
• Simple Payback
• Internal Rate of Return (IRR)
• Return on Investment (ROI)
• Net Present Value (NPV)
Financial Analysis
Making energy efficiency economically viable

Bundle projects to achieve desired economics

<table>
<thead>
<tr>
<th>Quick Returns</th>
<th>Medium Returns</th>
<th>Long Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tune up</td>
<td>Variable Speed Drive</td>
<td>Insulation</td>
</tr>
<tr>
<td>Thermostats</td>
<td>Insulation</td>
<td>Boiler</td>
</tr>
<tr>
<td>Occupancy Sensors</td>
<td>Lighting</td>
<td>Windows</td>
</tr>
<tr>
<td>Timers</td>
<td></td>
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</tbody>
</table>
Financial Analysis
Making energy efficiency economically viable

Communicate clearly the costs of not implementing

<table>
<thead>
<tr>
<th>Year</th>
<th>Accrued Cost to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$125,000</td>
</tr>
<tr>
<td>2</td>
<td>$250,000</td>
</tr>
<tr>
<td>3</td>
<td>$375,000</td>
</tr>
<tr>
<td>4</td>
<td>$500,000</td>
</tr>
<tr>
<td>5</td>
<td>$625,000</td>
</tr>
</tbody>
</table>

![Bar chart showing accrued cost to date.](chart.png)
Discussion

Feel free to share any horror stories!
Discussion

What do you talk about to sell an energy efficiency project?

Comfort / Productivity?
People perform better when happy

Showcasing emerging technologies?

Reducing operating costs?

Addressing concerns about energy security?
Discussion

What do you talk about to sell an energy efficiency project?

- Code Compliance?
- Building Certifications?
- Environmental Stewardship?

BP’s Macondo Well
Source: http://cgvi.uscg.mil/media/main.php?q2_itemId=836285
Questions to Think About

From your experiences, what are some of the objectives of these players that may promote or hinder energy efficiency?

AHJs __________________________
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Material & equip. suppliers__________
Discussion

1. What are some specific stumbling blocks you’ve encountered with efficiency projects?
2. Did they get resolved?
3. How?
Discussion

Any more horror stories?
Bonus Materials
Illinois Electricity Prices

Electricity price in the commercial sector

*Based on Table 9.9 & 9.11 from http://www.eia.gov/state/

Illinois Natural Gas Prices

Natural gas price in the commercial sector (including supplemental gaseous fuels)

*Based on Table 9.9 & 9.11 from http://www.eia.gov/state/
Global Temperature and Carbon Dioxide (CO₂)

Global average temperature

CO₂ concentration

1880 1900 1920 1940 1960 2000

Global Temperature (°C)

CO₂ Concentration (ppm)

19.8 (58.6°F)

14.0

13.8 (56.8°F)

400 ppm: May 2013

Source: U.S. Energy Information Administration
World energy consumption by fuel

Source: U.S. Energy Information Administration
World-wide Potential Coal Production

Source: Energy Watch Group, 2007
Natural Gas

US Energy Projection with Climate Policies in Effect
Source: The Future of Natural Gas, MIT, 2010

[Graph showing energy projections from 2010 to 2050, with different energy sources represented by different colors and trends over time.]