Green Building Workshop Agenda:

1. Introductions
2. What is Green Building
3. Why Go Green? – the Business Case
4. Sustainable Design Rating Systems
5. Advanced Buildings Energy Benchmark for High Performance Buildings
6. Case Study: Fidelity Bank
7. Fidelity's Green team and involvement with EcoStar
8. Q&A
9. Wrap Up
10. Tour of the Bank

Why Build Green?

The built environment has a profound impact on the natural environment, economy, health, and productivity.

In the United States alone, buildings account for:

- 70% of electricity consumption,
- 39% of energy use,
- 39% of all carbon dioxide (CO2) emissions,
- 40% of raw materials use,
- 30% of waste output (136 million tons annually), and
- 12% of potable water consumption.

Benefits:

USGBC estimates that green buildings, on average:

- Reduce energy use by 30%
- Lower carbon emissions by 35%
- Decrease water use by 30 to 50%
- Generate waste cost savings of 50 to 90%

More statistics on the built environment in the U.S. and the growth of green building and LEED are available at www.usgbc.org – on the Reources Handout

But how? and at what cost?

Costs/Benefits:

- Increasing a building's net operating income increases the building's appraised value by ten times the annual cost savings.
- LEED-certified buildings and Energy Star buildings Green buildings have higher occupancy rates as well as higher rents and sale prices.
- Part of the reason green buildings command higher rates and sale prices is their scarcity. Number of LEED and Energy Star buildings is growing, but not in line with demand.
- The energy efficiency of green buildings is also a factor in increasing property value.
- Improved health and productivity of building users. Annual cost of building-related sickness = $58 billion in US. Green building has the potential to generate an additional $200 billion annually in the United States in worker performance by creating offices with improved indoor air quality
- Employee Retention/Turnover affecting productivity and costs

ECOSTAR

Additional Costs/Benefits…..

- Higher upfront costs but usually quick paybacks
- Lower cost buildings = more frequent office moves – added costs.
- Insurance companies now providing reduced rates for green buildings due to fewer health-related claims.
- Buildings also affect QOL, infrastructure development, and transportation systems.

Beyond buildings, poor site selection & development creates:

- inefficient land use, resulting in greater energy consumption, travel time
- loss of productivity
- polluted runoff to surface water and wastewater treatment systems
- loss of agricultural lands, fragmented habitats, and fiscal stress to local communities.

The Business Case for Green Building:

Impacting The Triple Bottom-Line

Economic:

- Reduction of operating and energy costs (lower utility bills)
- Higher valued real estate and profits (greater ROI)
- Improvement of employee productivity (reducing Sick Building Syndrome)
- Extended life of buildings -optimization of life-cycle economic performance
- Less vulnerability to fluctuating energy prices

Health and Community:

- Improvement of indoor air, thermal, and acoustic environments = increased comfort and health for employees, tenants, students, and customers
- Reduced strain on local infrastructure (using less energy, water, & solid waste)
- Improvement of QOL for employees, tenants, students, and customers

Environmental:

- Enhancement and protection of ecosystems and biodiversity
- Improvement of air and water quality
- Reduction of solid waste by using recycled building materials
- Conservation of energy and natural resources

and the list goes on…..

What is Advanced Buildings?

- Design Beyond Code Standard
- Impressive 20-30% Energy Savings
- **Improved Team Process**
- National program
- USGBC recognized

Advanced Buildings
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Save 30% with only *basic* Good Design Practices

Examples of integrated design items **not** required

- Daylight harvesting (daylighting controls)
- Renewable energy
- Under floor air distributi
- Natural ventilation
- Operable windows
- Heat recovery
- Orientation and siting

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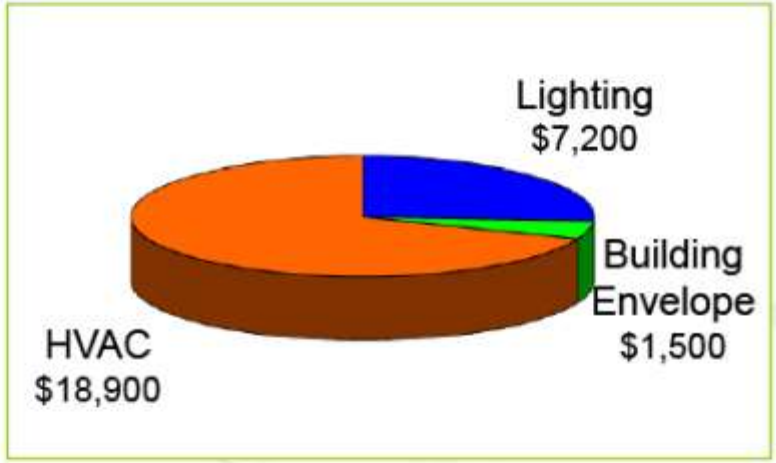
Fidelity Bank, Leominster MA

31% Improvement Over Code

Annual Energy Costs



Savings Components
($27,600 annual savings)

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Savings Projection

- Projected Energy Savings: $ 27,600
- Incremental Costs (Upgrades) $100,622
- Utility Incentives: <$ 66,587>
- Net Owner Costs: $ 34,035
- **Payback with Incentives: 1.2 years**
  ROI: 83%
- Payback without Incentives: 3.7 years
  ROI: 27%

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Additional Benefits

- Higher quality, more attractive lighting
- Better workplace climate control
- Quieter due to better wall cavity insulation
- Leased space - tenants attracted to attractive lighting and low utility cost
- Boost to employee relations
- Proven drop in absenteeism and increased productivity
- Trades and design team learned new practices

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