



### Advanced Building Features

- High Efficiency T-5 Pendant Lighting
- Lighting Control Efficiency
- Reduced Lighting Power Density
- Efficient Site Lighting
- Additional Wall Insulation
- High Performance Glazing
- Efficient VAV RTU's, with ECM Motors
- Demand Control Ventilation
- Part Load HVAC Efficiency Enhancements

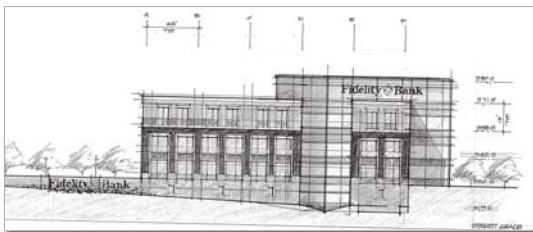
### Funded Utility Services Support

- Early Life Cycle Cost Analysis
- Integrated Design Team Approach
- Commissioning



### Project Description

The 47,000 SF Fidelity Bank Corporate Office and Branch was constructed as a design-build project in Leominster, MA. The four story building will provide office space plus a ground floor branch bank office. This project is acclaimed for its highly successful implementation of the national Advanced Buildings program. The project demonstrates the validity of the Advanced Buildings program assertions. The guideline cost effectively delivered even more than the expected 20% to 30% reduction in annual energy costs compared to a code based design.



### Envelope Improvements

- Walls: Added 3-1/2" batt insulation to planned 2" rigid.
- Glazing:
  - Upgrade U value from 0.42 to 0.31
  - Upgrade SHGC from 0.50 to 0.30
- Projected envelope savings: \$1,500

### Project Team

Owner:

**Fidelity Bank**

Project Management:

**Habitat Advisory Group**

Architect:

**Maugel Architects**

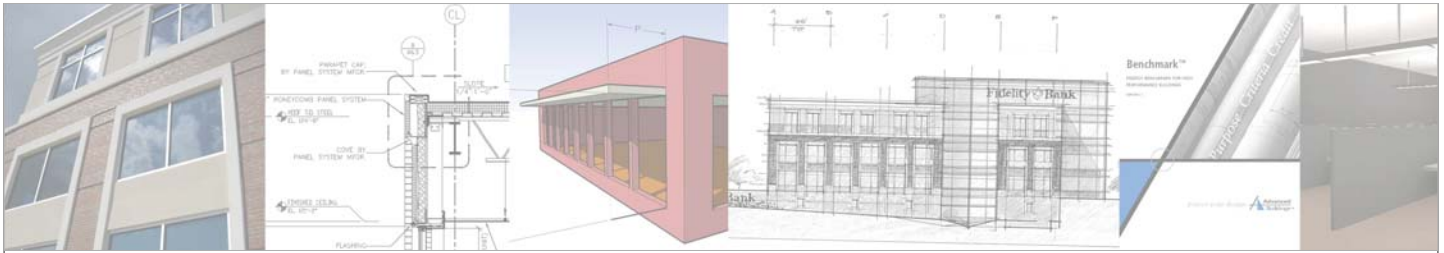
General Contractor:

**Construction Dynamics**

Energy Efficiency Incentives and Support:

**National Grid and Keyspan Energy Delivery**



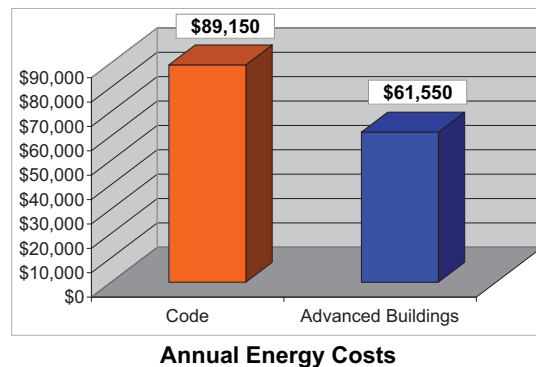
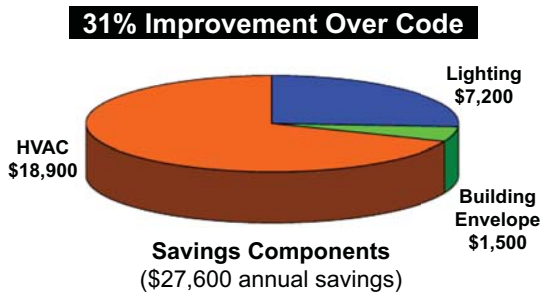


## High Performance Building Design Uses 31% Less Energy

### Savings Projection

Annual Energy Savings:	\$ 27,600
Additional Cost for Upgrades:	\$100,622
Utility Incentives:	- \$ 66,587
Net Owner Costs:	\$ 34,035

<b>Payback with Incentives:</b>	<b>1.2 years ROI: 83%</b>
Payback without Incentives:	3.7 years ROI: 27%



### Lighting Savings Summary

The lighting layout consisted mainly of T-5 pendants in open office areas, and the latest generation of recessed T-5 fixtures in the remaining areas.

Projected Lighting Savings: \$7,200



	Mass Energy Code	Advanced Buildings Criteria	Final Design	% Reduction
Lighting Power Density	1.34 w/SF	0.96 w/SF	0.86 w/SF	36%

**Improved lighting quality while using less energy!**

### HVAC Savings Summary

**HVAC moves that deliver!**

Advanced Buildings emphasizes an integrated approach to the HVAC Design with particular focus on efficiency under part load conditions. Savings are credited to Advanced Buildings' focus on the specifics of the application instead of just the full load equipment efficiency.

Advanced Buildings additional investments:

- 10.2 EER HVAC Units
- Demand Controlled Ventilations (CO2 Controls)
- ECM Fan Box Motors
- Dedicated Data Room Cooling Unit

Projected HVAC Savings: \$18,900

**Payback Before Incentives: 1.8 Years**

Efficient HVAC Cost: \$34,100

