



Project Team

Owner: Empire State Building Company
Owner's Rep: Jones Lang LaSalle
Energy Service Company: Johnson Controls, Inc.
Design Partner: Rocky Mountain Institute
Project Advisor: Clinton Climate Initiative

Key Metrics

Building Size: 2.7 million sf
Incremental Capital Cost: \$13 million (over planned capital expenditures)
Pre-Retrofit Annual Energy Use: 88 kbtu/sf
Pre-Retrofit Annual Energy Cost: \$11 million
Retrofit Energy Use Reduction: 38%
Retrofit Annual Energy Cost Savings: \$4.4 million
Completion Date: 2013

Project Certification

LEED-EBOM Gold Certification (Pursuing)



PROJECT DESCRIPTION

Over the course of year 2008, a team of five key players (Clinton Climate Initiative, Empire State Building, Jones Lang LaSalle, Johnson Controls, and Rocky Mountain Institute) developed an integrated sustainability program, including energy efficiency retrofit measures for the Empire State Building. The project now serves as a model throughout the world for deep retrofit projects in large multi-tenant office buildings, both new and historic. The Empire State Building retrofit demonstrates the financially attractive nature of a comprehensive retrofit program when coordinated with planned infrastructure upgrades.

RMI ROLE

Rocky Mountain Institute brought a whole-systems approach to the project while serving as a design partner and peer reviewer on behalf of ownership. RMI facilitated workshops, provided design input, conducted the life cycle cost analysis, contributed to presentations to ownership, and created a project website.

PROJECT HIGHLIGHTS

Using a rigorous eight-month-long iterative design process, the team narrowed down 60+ ideas to a package of 8 recommended projects that provide the optimal balance of financial and environmental return on investment. The recommended package includes:

- Window Light Retrofit
- Radiator Insulation Retrofit
- Tenant Lighting, Daylighting and Plug Upgrades
- Air Handler Replacements
- Chiller Plant Retrofit
- Whole-Building Control System Upgrade
- Ventilation Control Upgrade
- Tenant Energy Management Systems

Key lessons learned from this project include the importance of coordinating retrofit projects with planned capital upgrades, the advantage of including tenants in the process, the benefits and cost-savings associated with using whole-systems design, and the need to improve and accelerate the audit, analysis, and decision-making process through better tools and training.

For more information on the project, please visit:
www.esbsustainability.com