The RetroFit Initiative

RMI's RetroFit Initiative

Over the next 5 years, the RMI RetroFit team, in collaboration with carefully selected partners, intends to accelerate the adoption of deep energy retrofits in commercial buildings. Specifically, our efforts are focused on portfolios of owner occupied commercial buildings, both privately and federally held. The major commercial markets we are targeting include office, retail and higher education, among others.

RetroFit is driving both the supply and demand sides of the retrofit equation by engaging equally with energy service companies, property managers and architectural/engineering firms (supply side service providers) as well as driving the conversation with key building owners such as the General Services Administration and key MUSH sector (Municipalities, Universities/Colleges, Schools and Healthcare) owners. Underlaying the supply and demand efforts is our workstream developing tools and training to support the greater adoption of deep retrofits.

What is a Deep Energy Retrofit?

A Deep Energy Retrofit is the integrative process that enables projects to achieve over 50% operational cost savings with attractive financial returns. Key aspects to the deep energy retrofit process include:

- **Timing** the deep retrofit to coincide with planned capital improvements, breaks in occupancy and other key timing indicators;
- Applying **integrative design** principles to achieve more holistic retrofits at equal or lower capital costs;
- Using **advanced energy modeling**, auditing and life cycle cost analysis methods and tools; and,
- **Metering and continuous recommissioning** to verify savings and for ongoing operational improvements.

Deep energy retrofits can go beyond energy savings on individual buildings to impact a whole portfolio of buildings. RetroFit is actively pioneering innovative tools and processes to drive aggressive savings across thousands of buildings simultaneously.

Why are Deep Energy RetroFits Critical?

The Intergovernmental Panel on Climate Change and leading climate scientists suggests we need a 70–80% reduction of overall carbon emissions by 2050 in order to avoid climate catastrophe. We can avoid it, but we need to start acting now. Retrofitting existing commercial buildings provides a huge opportunity:

- Commercial buildings are responsible for 19% of energy use and 18% of greenhouse gas emissions in the U.S., according to the Department of Energy.
- More than 75% of the U.S. commercial building stock is over 20 years old as estimated by the Energy Information Administration, hence most likely ripe for a retrofit.

The RetroFit initiative is strategically derived from Reinventing Fire, RMI's nation wide strategy to drive the profitable transitions off fossil fuels by 2050.

Proven Successes: Empire State Building

In 2009 Retrofit partners Clinton Climate Initiative, Johnson Controls Inc., Jones Lang LaSalle, and Rocky Mountain Institute completed an eight-month modeling and analysis process, which will save 38% of the building's energy and $4.4 million annually.

Byron G. Rogers Federal Office Building

Byron Rogers is on track to become one of the most energy efficient office buildings in the U.S, targeting a 70% energy use reduction. Key energy saving features including the use of LED lighting throughout the building, chilled beams, aggressive plug load reductions, high efficiency glazing heat recovery, solar thermal and PV. The full energy reduction will not be realized for several years, until tenants have had an opportunity to procure new, more efficient computers and equipment.

RetroFit DEPOT

RetroFit Depot is a comprehensive online reference geared at building owners and practitioners about the benefits, processes, answers to tough questions and case studies to prove the economic viability of deep commercial building retrofits. www.RetroFitDepot.org