

# EMERGING TECHNOLOGIES AND ACCELERATED COMMERCIALIZATION PROGRAM (ETAC)

## Project Brief: Building Energy Exchange Advances Lighting Controls and Daylighting Demonstrations in Living Laboratory

### Background

Building Energy Exchange is an independent nonprofit that advocates for energy efficiency in the New York commercial sector. The organization is coordinating a demonstration project implementing several different advanced lighting, shading, daylighting, and control systems at flagship buildings of two financial services host sites. The objective of this project is to demonstrate that it is possible to design, specify, install, and make operable packages of cost-effective, energy-efficient retrofits for lighting, shading, and daylighting in existing office buildings. This demonstration project will test a series of aggressive lighting-efficiency measures structured around a “Living Laboratory” that can help buildings obtain a higher level of energy performance. Methods, lessons learned, and collaborative industry arrangements from these installations will be used as a platform to transform broader commercial energy use patterns in the State.

### Project Description

The project consists of two separate installations in high-profile Class A commercial buildings in New York City. The demonstration host sites will implement a staged set of actions around the concept of a “Living Laboratory” in an entire floor of their buildings to fully explore a range of aggressive efficiency performance options, and then use lessons learned from the Living Lab floor to plan follow-on retrofit actions in the overall building.

Each demonstration host site has committed to fund the creation of “Living Labs” in their buildings by selecting one floor for an aggressive retrofit and a second floor to serve as a “control” floor. The two-year project plan involves:

- Understanding existing system performance and influencing new design goals.
- Implementing aggressive integrated lighting, daylighting, and shading solutions across an entire floor to capture the diversity of spaces and technologies.
- Evaluating and documenting performance and cost effectiveness.
- Promoting successful solutions for use in other buildings.

Desired lighting levels will be set forth by the host sites, and controls will automatically dim or turn off lighting fixtures when daylight levels are sufficient.

#### Lead Participant

Building Energy Exchange  
New York, NY

#### Other Team Members

Lawrence Berkeley National Laboratory  
(LBNL)

#### Technical Consultant

ERS

#### NYSERDA Contact Information

Liz Hanna  
Liz.Hanna@nyserdera.ny.gov

#### Contract Details

Start Date: December 2013  
Project Status: Underway

#### Last Update

February 2015

**Learn more about new energy-saving technologies and approaches.**

**w: [nyserdera.ny.gov/etac-ci](http://nyserdera.ny.gov/etac-ci)**

**e: [info@nyserdera.ny.gov](mailto:info@nyserdera.ny.gov)**

The ETAC program supports multi-site demonstrations, provides in-depth performance validation, and shares results through dedicated outreach.



**Project Brief: Building Energy Exchange Advances Lighting Controls and Daylighting Demonstrations in Living Laboratory**

**Learn more about new energy-saving technologies and approaches.**

**w: [nyserda.ny.gov/etac-ci](http://nyserda.ny.gov/etac-ci)**

**e: [info@nyserda.ny.gov](mailto:info@nyserda.ny.gov)**

### Benefits

This project is expected to save nearly 19 kW in monthly peak demand and 190,000 kWh annually, and provide an improved working environment for occupants. In addition, recent New York City legislation requires 1.25 billion square feet of office lighting to be upgraded to current code by 2025. The project will provide an important demonstration of the viability of such lighting systems for the other spaces within each building, additional locations owned by the demonstration hosts, and the New York State commercial retrofit market as a whole.

Each owner also owns millions of square feet of additional commercial floor space. By virtue of their building size and presence, they can generate market pull, and this project plans to use that market demand to influence both suppliers of technology as well as peers in the real estate industry.

### Investment

NYSERDA	\$150,000
Participant Team	\$990,000
Total	\$1,140,000