West Gym Lighting System Upgrade
Celebrating Success

September 2011

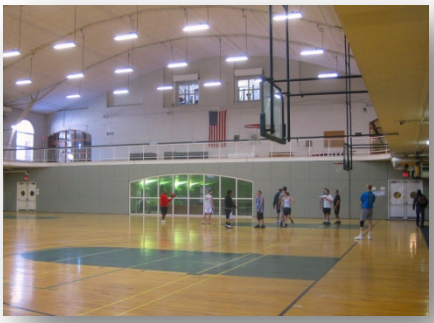
In January of 2011, lighting systems for the West Gym were completely upgraded to provide better lighting quality, user control of lighting levels, and significant energy savings. This project was undertaken by Dartmouth's Energy Team in collaboration with J&F Labs, a wireless energy control system manufacturer, and Dartmouth's Computer Science Department.

Original West Gym lighting system

The project consisted of complete replacement of the lighting systems in the West Gym. The previous lighting system consisted of 48 – 400 watt metal halide fixtures which provided general illumination of the entire gymnasium space. There was no provision for separately lighting the upper level running track. Switches for the lighting fixtures were located behind locked doors, and each fixture each required a long warm up time to achieve full lighting output. As a result, the lights were generally left on 16 to 17 hours each day awaiting the appearance of students or staff to participate in basketball, running, or other fitness activities programmed for the space.

Dartmouth's Energy Program Team worked with a fluorescent lighting manufacturer, a wireless energy control system manufacturer, and our Computer Science department to take an entirely fresh approach to this space. The goals were to:

- Place illumination where it is needed, only when it is needed
- Place control of lighting in the hands of the users
- Improve the quality of lighting for all areas
- Automatically switch lighting off after use
- Provide multiple lighting levels for each fixture
- Provide ability for special event lighting scenes
- Use simple touch-screen interface to control lights
- Save significant energy



New lighing fixtures, each with 3 output levels

Dartmouth's Energy Team is pleased to announce that after the first 6 months of operation, the West Gym lighting system has met all of its goals, including a verified **82% reduction in energy consumption**. The project has far exceeded our expectations of lighting quality, user flexibility, and energy savings. This fall, we will add to our lighting innovation in the West Gym with additional controls designed to make use of natural light which will enter through newly renovated clerestory windows and re-opened high ceiling space.

Wireless control and touchscreen development teams

We are thankful for the continuing collaboration of our innovative partners on this project, including:

- *Marc Josephson – President/CEO, J&F Labs; Dartmouth '72*
- *Kurt Josephson – Chief Technology Officer, J&F Labs*
- *Lorie Loeb – Research Associate Prof., Computer Science Department*

Electrical Savings = 107,400 kWH/Yr	Cost Savings = $14,000/Yr	Project Payback = 4.3 Years	Utility Incentive = $36,000