

SITUATION:

An existing multi-story, 99,000 ft² laboratory and office facility with multiple tenants (approximately 90% of the building is occupied) is operating with high energy costs. The building houses R & D laboratory tenants as well as a vivarium. The building includes a central water cooled chiller plant and natural gas fired hot water boilers as well as natural gas fired steam boiler system for humidification and process steam.

ACTION:

The building owner engages JennErik Engineering to perform an energy audit of the facility. The audit quickly reveals that a 3 year average energy billing is in the \$9.50/ft² range. JEI investigates the current operation of the facility via interviews of the facility tenants and facility engineers. The building operation reveals several energy savings opportunities. A report is developed and functions as an energy saving master plan for the property. The first items are immediately acted on which include modifications to automatic temperature control programming. These first changes are done without first cost as they are implemented by the building engineering staff.

First Cost = \$ 500 (engineering staff costs)
Payback Calculated = \$ 20,000
Actual Energy Reduction Realized = \$ 30,000
Actual Simple Payback = 1 DAY

The remaining items which have first cost requirements in order to achieve savings are prioritized based on simple payback calculations. Some of the items are in fact pursued via subsequent design and construction programs. These items include pre-treatment of water serving processes, replacing leaking isolation air dampers, modifying heating water pumping and piping strategies and lighting retrofits.

First Cost = \$ 150,000 total cost
Payback Calculated = \$ 120,000
Actual Energy Reduction Realized = TBD
Actual Simple Payback = 1.2 years