

Level III Energy Audit of Pop-Whalen Ice Arena

Applicant Description: Town of Wolfeboro Pop-Whalen Ice Arena

Project Summary: Obtain an ASHRAE Level III Energy Audit

Project Measures: The Ice Arena is a complex collection of energy consuming activities that operates primarily through the coldest six months of the year. At the core of the energy use is a pair of 100 ton and 60 ton electrically powered chillers. Large amounts of hot water are used in frequent ice resurfacing, and an unaccountably large amount of heat is being consumed to heat the relatively small lobby area.

Through experience with a level II audit, it has become clear that a greater level of expertise is needed to sort out the opportunities. The contractor will need to provide engineering and must work with service providers to obtain accurate cost estimates for new equipment and any modifications to existing equipment.

The facility consumes 4,000 gallons of oil/year and about 340,000 Kwh of electricity, at an annual combined cost of about \$66,000 per year. Many opportunities exist to reduce this consumption:

1. Reduce chiller load by providing controls to maintain ice temperatures appropriate to the current activities, including overnight inactivity.
2. Reduce heating requirement in lobby area, currently at a stunning 120Kbtu/sq ft.
3. Recover waste heat from chiller to provide:
 - Space heating in lobby area
 - Hot water for resurfacing
 - Locker room and office heating
4. Determine amount of excess waste remaining and method of harnessing to be used in planning for new lodge facilities for adjacent municipal ski area.

This audit should provide accurate cost and savings from various improvement measures.

Project Locations: Wolfeboro Pop-Whalen Ice Arena, 390 Pine Hill Road, Wolfeboro, NH 03894

Project Costs: From the DOE website at Lawrence Berkley National Laboratories, we get an estimated cost of \$0.30/sq ft for a level III audit. The arena is approximately 34,000 sq ft. Estimated cost is \$10,200.

Cost of Project: \$10,200

Funds Requested \$10,200

Project Category: Building Energy Audits