



## ENERGY AUDITING

An energy audit is defined as a process to evaluate the energy use efficiency of, and to identify energy saving opportunities for, a residential, commercial, or industrial facility. In short, the audit is designed to determine where, when, why, and how energy is being used. This information can then be utilized to identify opportunities to improve efficiency, decrease energy costs, and reduce greenhouse gas emissions that contribute to climate change. Energy audits can also verify the effectiveness of energy management opportunities.

Pinchin's energy auditors are knowledgeable and experienced in building science and energy efficiency methodologies. They consider all aspects of energy efficiency, comfort, and occupant health as part of the overall energy audit. Pinchin's audits are performed in conformance with the NRCAN Energy Efficiency Planning and Management Guide. These audits typically begin with a building survey, an essential step in the process that is conducted to obtain necessary information and to evaluate the overall condition of building features including:

- building envelope enclosures (testing for the thermal performance of walls, windows, doors, and roofing);
- lighting fixtures, lighting power density, and controls;
- heating, ventilation, and air conditioning systems and controls;
- domestic hot/cold water systems; and
- additional energy consumption facilities or processes.

In regards to facility equipment, measurements should be taken to gauge each item's energy use and efficiency. An observation and review of operating practices is also necessary to fill in any gaps in measurements. Pinchin's Building Science and Sustainability teams may also request, if needed, available site drawings (architectural, mechanical, and electrical), equipment specifications, and available utility bills (gas, oil, and hydro) from the last twelve months in order to facilitate their auditing process.

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Annual energy monitoring plays an important role in energy efficient building management. Pinchin offers annual auditing services, data logging, and energy modeling services to help clients track cost-effective impacts on energy saving opportunities, budget for feasible retrofits, and identify new energy efficiency measures. Below is a listing of the common solutions that Pinchin helps clients identify and integrate into their building:

- Boiler tuning
- Replacement of a malfunctioning device
- Piping or duct insulation
- Energy efficiency incentive program application (new building and retrofit)
- Shutting off equipment when not required
- HVAC retrofit with cost-effective considerations
- Recommendations for energy management for optimal operation
- HVAC, plumbing, and fire protection design (new building or renovation)

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