



**RED BARN THEATRE: JACKSON'S POINT, ONTARIO**



**Firm's Role**

Sustainable Design Consulting and Mechanical Engineering

**Description**

The Red Barn Theatre, located in Jackson's Point, was originally built in 1876. In 1949 it became the home of a professional summer theatre, making it one of the oldest such theatres in North America. Since its conversion from an agricultural barn to a performance venue, very little in the way of mechanical heating, cooling, or envelope improvements had been made.

Sustainable EDGE Ltd. was hired by Enbridge Consumers Gas to explore and design alternative envelope and mechanical improvements that would deliver cooling in an environmentally appropriate and cost-effective manner. Using the local aquifer, Sustainable EDGE designed and implemented a cooling system requiring minimal electricity and no refrigerant or onsite natural gas. The result is a comfortable and virtually silent interior environment with the added benefit of reduced energy operating costs and decreased CO<sub>2</sub> emissions.

**Features**

- Airtightness and exterior wall and roof insulation retrofit using mineral fibre insulation
- Mechanical displacement cooling system using deep aquifer beneath the site
- Motorized cupola vent tower installed on roof peak facilitates displacement ventilation
- Three cooling levels for different weather conditions: 100% fan-powered airflow or 50% fan-powered airflow and 100% natural ventilation driven by buoyancy forces and stack effect
- Mechanical cooling system provided at 50% of cost of conventional system

**Client:** Enbridge

**Owner:** Red Barn Theatre