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## Project Profile

Innovative Insulation Solutions

**Client:** Betchar Holdings

### Building Details

3 Storey, 100 year old heritage masonry building with concrete floors.

- Floor Area: 36 000 ft<sup>2</sup> (12 000 ft<sup>2</sup> / floor)
- 13 ft high walls
- Total Heated Volume: ~400 000 ft<sup>3</sup>

### Mechanical

Building is constantly maintained at 20 °C inside using two (2) 2 000 000 BTU boilers.



**Ross School – Moose Jaw, Saskatchewan**

Renovations by: ADA Architecture, Catterall & Wright (civil engineering); Robb Kullman Engineering Ltd. (structural engineer); MacPherson Engineering Ltd. (mechanical engineer); and Willms Engineering Ltd. (electrical engineer).

### ***Weatherization Package Installed:***

- 4" Quik-Therm Multi Purpose Insulation (MPI) installed on the inside of the exterior masonry walls followed by 2-1/2" steels studs and drywall (empty stud cavity).
- 8000 ft<sup>2</sup> lower basement floor insulated using 11/16" Quik-Therm Sub-Grade Insulation (SGI). Insulation installed between the concrete and the gravel base.
- Ceiling/Attic R-50 blow in fiber.
- New windows and doors throughout.

### ***Energy Consumption:***

Sept 2013 to Jan 2014 (120 days)

- Natural Gas Consumption: 10 462 m<sup>3</sup>
- Energy Consumption/hr: 134 416 BTU/hr

### ***Operating Cost:***

Sept 2013 to Jan 2014 (120 days)

- Operating cost over 4 month period was \$2570
- Average Daily cost: \$21.40

### ***Observations / Comments:***

by Glen Heck, Project Superintendent. Contact: Ph.1-306-631-1022 / g.heck@sasktel.net

- Only one boiler has been required to heat the building and is set at its lowest possible output, on a very short cycle. Based on actual energy consumption, the building requires a 1,000,000 BTU boiler. 1,000,000 BTU's will allow for air handling requirements and being occupied by people.
- Superior effective thermal resistance of the building envelope aids in the downsizing of the HVAC equipment. Downsizing the boiler more than pays for the insulation package – as well the insulation package provides long term energy savings and comfort.
- In Moose Jaw, this is the second Heritage building insulated in this manner. The installation method and insulation technology are virtually identical; consequently so are the results.