

# Challand Middle School

Sterling, Illinois



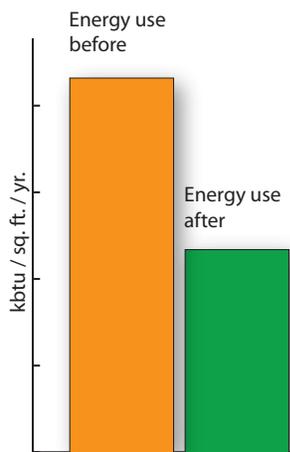
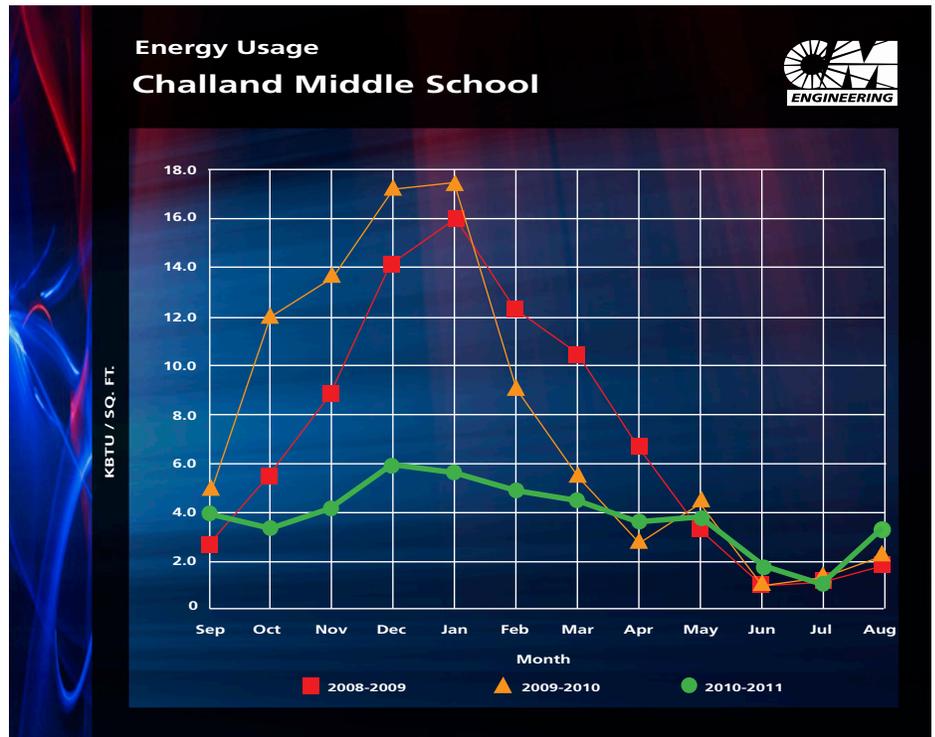
Challand Middle School suffered high spikes of energy consumption during heating season. Indoor spaces were typically stuffy and uncomfortable during warmer months.

In the summer after the 2006-2007 school year, we installed our One-Pipe ground source geothermal exchange system. We also added individual temperature controls and air conditioning to every room in the building, at a very low first cost.

Teachers and students now enjoy year-round comfort and a healthier indoor environment that is much more conducive to learning and to better educational outcomes.

## Retrofit of existing school

- Air conditioning added to every room
- Ground source geothermal exchange system
- One-pipe design
- 90,176 square feet
- 50 Classrooms
- Approximately 698 students ('07-'08)
- Individual temperature controls in every space
- Retrofit cost \$16.80 / sq. ft.
- Energy use BEFORE retrofit: 86.6 KBTU / sq. ft. / yr.
- Energy use AFTER retrofit: 47 KBTU / sq. ft. / yr.



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The green tracing above shows measured energy consumption after installation of One-Pipe Geothermal exchange heating and cooling system. Red and orange show consumption for two years prior to retrofit. Note that high spikes have been eliminated and yearly average energy consumption has been drastically reduced.  
 (Data source: Sterling Public Schools, Sterling, Illinois)