Winnacunnet High School

Building Type	High School
Space type	Classrooms
Location	New Hampshire
Climate	Zone 5B, Cold, Heating season

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Improving Comfort & Reducing Heating Costs in a Cold Climate with Templok® Ceilings

Classroom Case Study at Winnacunnet High School

Problem

A high school in New Hampshire faced high heating costs overnight to keep classrooms warm.

Solution

Use Templok® ceilings to store excess heat from the day to maintain warmer indoor temperatures at night.

Study

- Baseline heating energy to four classrooms was monitored for several months.
- Templok ceiling tiles were deployed to two classrooms and two remained untreated for comparison.
- Several analysis techniques were used to estimate the heating energy impact of the Templok ceiling.

Results

A 5-9% reduction in nighttime heating energy. Rooms with Templok ceilings had fewer cold indoor temperature peaks, keeping students and staff more comfortable.

Regulating Indoor Temperature

Study Highlights

A set of neighboring classrooms were monitored for heating energy use in the month of February. Daily energy use was strongly correlated between the classrooms. On March 1, Templok® ceilings were installed in Room 120, and Room 119 was left alone for comparison.

In both classrooms, heating energy use was most intense overnight when the outdoor temperature was coldest. ***(Fig 1)*** Heating energy was moderate during the day, while the classrooms were filled with students generating heat and outdoor temperatures were warmer.

After Templok was installed in Room 120, the classroom used less heating energy overnight compared to its neighbor without Templok. ***(Fig 2)***

Temperature sensors placed on Templok panels indicated when the PCM was storing and releasing heat. Excess heat during the day was captured and then released at night, helping to keep the building warmer during the coldest hours.

Several months of data were analyzed before and after the Templok ceiling installation. After controlling for variables like outdoor air temperature, estimates ranged from **5 to 9% heating energy savings** from Templok ceilings. ***(Fig 3)***

See the Templok Technical Guide for more information.

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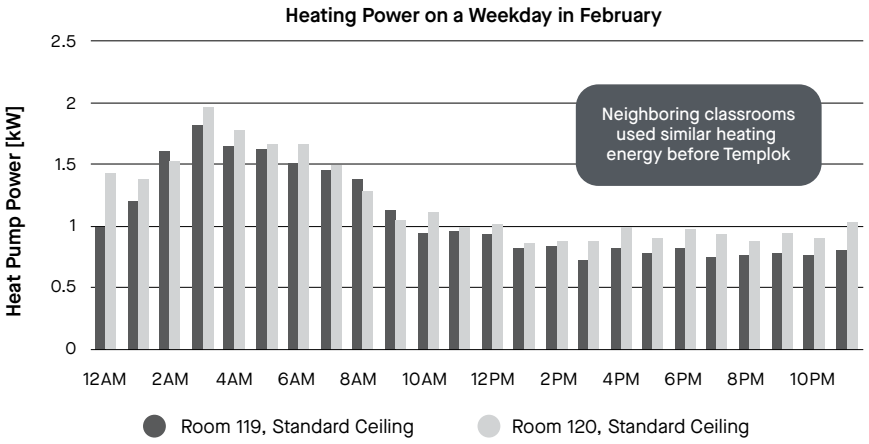
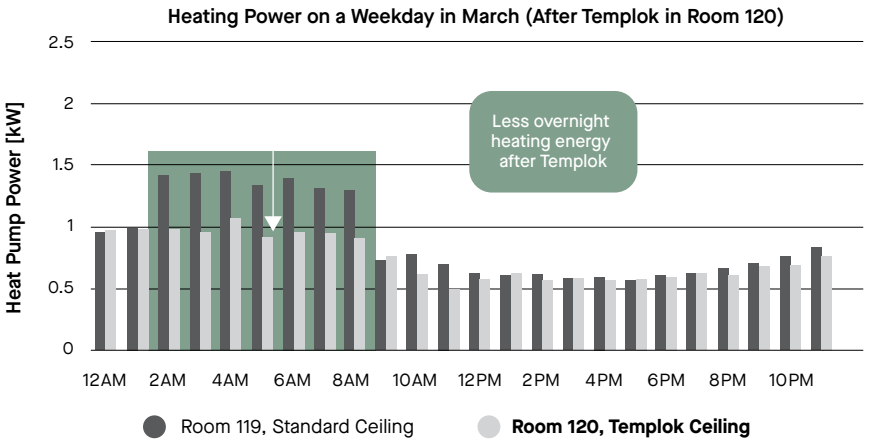
Before Templok

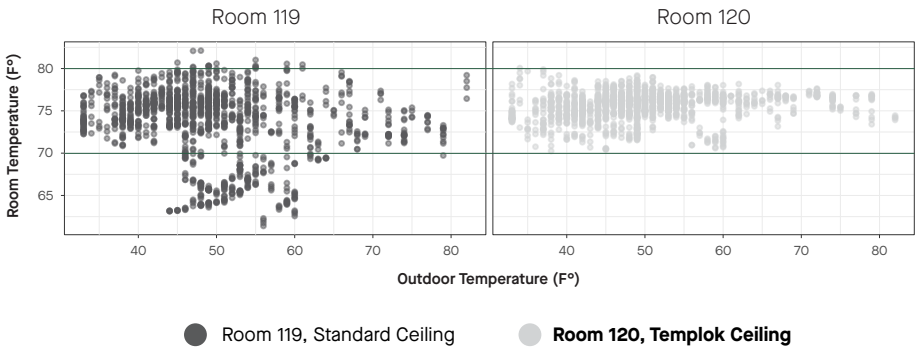


(Fig 1)

After Templok



(Fig 2)



(Fig 3)