



## Winnacunnet High School

**Building Type:** High School  
**Space type:** Classrooms  
**Location:** New Hampshire  
**Climate:** Cold, Heating season



# Reducing heating costs in a cold climate with Templok® Ceilings

## Ongoing 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\*  
Templok ceilings absorb and release heat, thereby regulating indoor temperatures and keeping students and staff comfortable.

\* The summer cooling study is ongoing, results pending. See the Templok Technical Reference Guide for more information on this case study.



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## 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 1st, Templok was installed in Room 120, and Room 119 was left alone for comparison (**Fig A**).

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

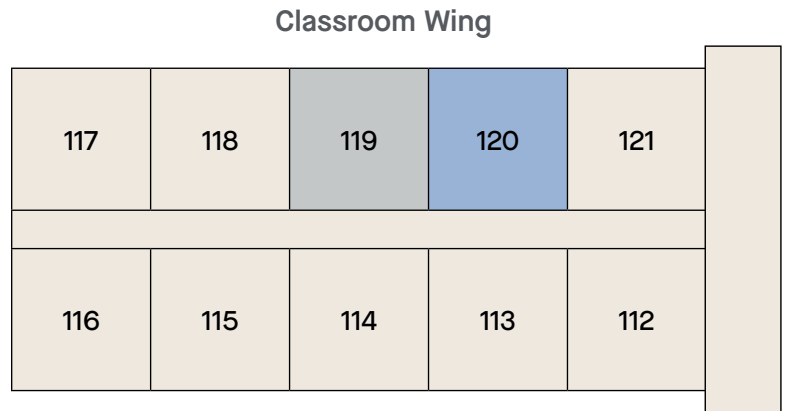
After Templok was installed in Room 120, the classroom used less heating energy overnight compared to its neighbor without Templok (**Fig C**).

Temperature loggers placed on Templok 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.

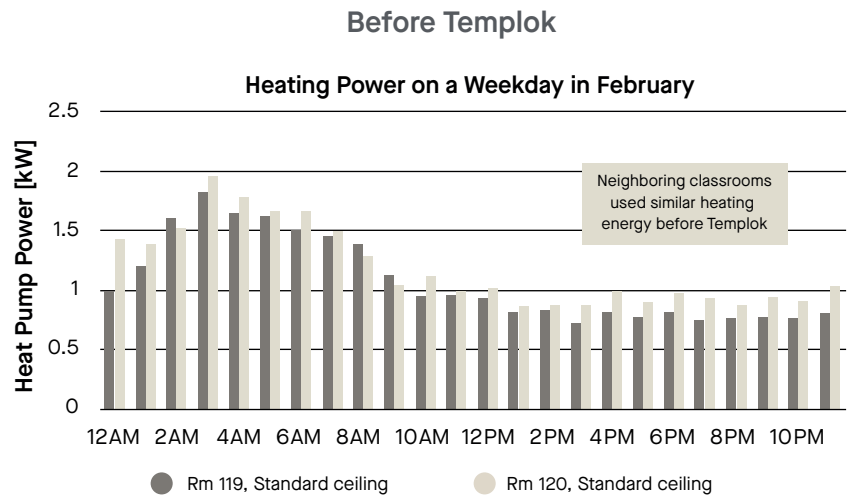
Several months of data were analyzed before and after the Templok installation. After controlling for variables like outdoor air temperature, estimates ranged from **5 to 9% heating energy savings** from Templok.

See the Templok Technical Reference guide for more information.

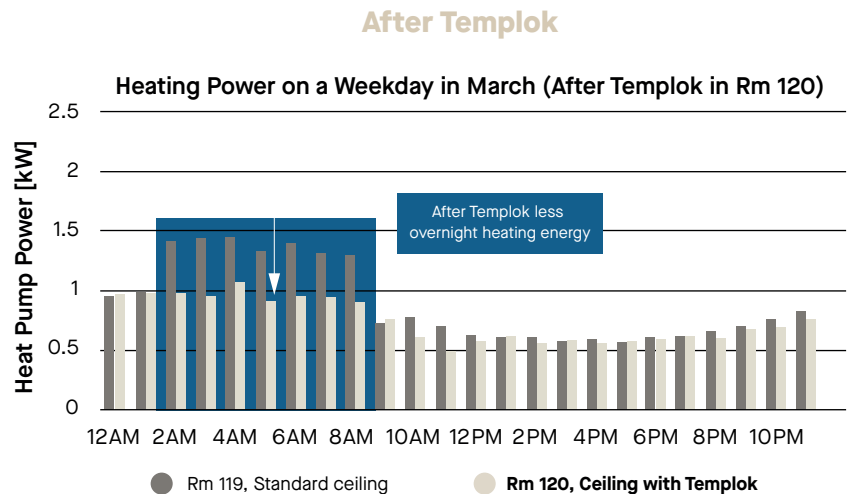
# Regulating Indoor Temperature



(Fig A)



(Fig B)



(Fig C)



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