

# NEW RICHMOND ELEMENTARY SCHOOL



DESIGNED  
TO EARN THE  
ENERGY STAR

The New Richmond School District indicated in early design process that they wanted an energy efficient design that could be submitted for LEED certified rating. An energy design charrette was held to review a variety of options to be considered for energy modeling to verify cost effectiveness as follows:

Option 1. Thermal Storage: 25% of total peak cooling capacity (several different thermal storage capacities were considered).

Option 2. Heat recovery on the air cooled chiller condensers for summer reheat.

Based on commitment for energy savings and reasonable payback, the New Richmond School District did consider the thermal storage, but did not accepted using it on the final design due to noise concerns when making ice at night next to a residential area.

Also as part of the energy design charrette, the following energy features were included as energy features that have proven cost effectiveness:

1. Occupied lighting control for the class rooms and the hallways using motion detectors.
2. The building automation system will integrate the motion detector signal to the air supply for reset the space airflow to the unoccupied air flow settings to follow the minimum outside air requirements for ASHRAE Standard 62n.
3. Energy recovery using total energy recovery wheels for the minimum outside air for the classroom areas.
4. Variable air volume systems for most of the classroom areas of the building.
5. Modular condensing boilers
6. Variable speed pumping on the heating water and cooling water systems.

7. CO2 monitoring and control is being used in the gymnasium and cafeteria.

8. Monitoring of the minimum outside air to each air handling units system.

9. Windows will have a .35 U value.

With a ENERGY STAR design rating of 93, the energy use intensity (EUI) is 80.5 kBtu/sf/yr, with a saving of 6,156,476.9 kBtu (based on EPA targeted energy performance of 50) and savings of 451.8 tons of CO2 emissions which for this project saved 47% reduction in CO2 emissions.

- Location: New Richmond, Wisconsin
- Energy Cost/Square Foot: \$.61
- Space Type: Elementary School
- Total Square Footage of Building: 85,750

