



Rochester Memorial Elementary School

Rochester, Massachusetts

General Information

Location: 16 Pine Street, Rochester, MA 02770

Scope: Renovation: 75,000 ft² / Addition: 34,385 ft²

Cost: \$17,470,070

Completion: September 2011

Enrollment: 604

Architect: Flansburgh Architects

Engineer: TMP Consulting Engineers;
Nitsch Engineering; Engineers Design Group

Certification: MA- CHPS

In order to meet the pressing need for an aggressive design and construction schedule, Flansburgh architects employed two strategies: build the needed classroom addition using a pre-cast concrete wall, floor and roof system to minimize erection time so that the addition was completed in only ten months; and utilize the CM-at-Risk process to fast track the design and construction sequences so that the addition was ready for the September 2011 school year.



Project Overview

Rochester's only elementary school, the Memorial School, a preK - 6 facility serving 604 students, had seen significant enrollment increases in recent years. The existing 75,000ft² school was an accumulation of several additions to the original (1950s) building. The town needed to expand the existing school quickly to keep class sizes within limits or temporary classrooms would have been required.

Flansburgh Architects conducted an extensive feasibility study to determine whether to replace or renovate the school. The study recommended retaining and renovating all portions of the school and adding 34,385ft² of classroom, music, and support spaces.

Renovations included all-new HVAC systems utilizing state-of-the-art displacement ventilation, which provides a healthier and quieter environment for a better learning; an expanded cafeteria; reconfigured kindergarten rooms; and a reconfigured library. Site improvements include a new baseball field, play areas, and expanded parking.

The Rochester Elementary School addition was designed to allow the school's use by the community at large for athletics, performances and educational programs. The floor area ratio of the addition (2 stories) was increased to reduce the developmental footprint and preserve as much open space as possible around the existing school.



Energy usage reduced by 35.5%



The school addition was designed to optimize natural daylight while avoiding glare. Daylight and occupancy sensors monitor all the spaces in both the new addition and the existing school to adjust the artificial light accordingly.

Use of a state-of-the-art HVAC displacement ventilation system provides a healthy, quieter learning environment.

Classrooms have been designed for improved acoustical performance as well. These spaces have background noise levels of NC 35.

“Green” signage was placed throughout the school, highlighting many “green” features of the school and emphasize the use of the school facility itself as an extension of the classroom to teach students about energy efficiency.

Sustainable Design Elements

Site

- Designed for use by community at large
- Two story addition reduces footprint and preserves open space
- Exterior light fixtures designed to avoid unnecessary outdoor lighting

Materials

- All areas have separate receptacles for trash, paper, plastics
- 90% of material from demolition was recycled or reused

Water

- Plumbing chosen to reduce potable water use by 20%
- Vegetation requires no permanent irrigation and trees planted for sun shading in the warmer months

Energy

- 35% energy usage reduction
- Central energy management system allows full wireless control
- Nighttime setbacks minimize heating and cooling during unoccupied times

This case study was prepared by NEEP with information provided by Flansburgh Architects. To learn more about this project, please contact Joanna Callas at JCallas@Flansburgh.com.

For more information about NE-CHPS, contact Carolyn Sarno, NEEP Senior Program Manager, High Performance Buildings, at csarno@neep.org or 781-860-9177 ext. 119.