

# Noted Special-Needs School Chooses Two-Pipe System for New Campus

**System expected to help project earn LEED certification**

**N**ationally recognized for serving children and young adults with disabilities and developmental delays, Meeting Street School occupies a new campus on seven acres of recovered brownfield land on the south side of Providence, R.I. The \$16.5 million campus features a Taco LoadMatch two-pipe hydronic heating-and-cooling system expected to help qualify the project for Leadership in Energy and Environmental Design (LEED) certification.

The new 76,000-sq-ft Americans With Disabilities Act-compliant building complex, designed by Saccoccio and Associates of Cranston, R.I., includes an early-learning center, a day-care area, and classrooms for the school's elementary-, middle-, and high-school students, as well as a gymnasium, a pool, office areas, a library, and a life-skills center.

The two-story building's layout consists of a central entrance area flanked by five wings, with considerable window space for harvesting natural light. Ninety-five percent of the structure is devoted to classroom space. Numerous LEED-qualifying construction materials and design elements, including low-volatile-organic-compound paint and finish materials and carpet made from recycled materials, were utilized.

Formerly a furniture warehouse and, before that, a produce-distribution facility, the site was cleaned thoroughly. An underground geo-membrane was installed, covered by 2 ft of fresh soil. All construction waste was recycled.

Engineering Design Services (EDS) Inc. of Slatersville, R.I., designed the heating-and-cooling system. Accord-



**Meeting Street School serves some 200 children and young adults each day.**

ing to EDS' principal, Will Mayer, PE, LoadMatch helped keep initial installation costs down because of its need for less pipe and fewer valves than a conventional hydronic system. Another benefit was a reduction in balancing, commissioning, and startup labor, as LoadMatch essentially is a self-balancing system.

EDS used Taco's Hydronic System Solutions software to lay out the two-pipe system, saving time on pump selection and pipe sizing. At EDS' direction, the software performed many of the design calculations and identified the equipment best suited for the demands of the application.

The LoadMatch system employs ceiling-mounted indirect-evaporative-cooled fan-coil units, with two factory-installed LoadMatch circulators—one for heating and one for cooling—per fan coil. The building is equipped with 56 fan coils, along with 18 blower

coils. Each fan coil comprises a separate zone. Comfort within the classrooms and activity spaces is controlled with direct-digital-control units from Johnson Controls.

In the mechanical room are two 2-million-Btu Camus Hydronics gas-fired condensing boilers, along with vertical inline pumps, expansion tanks, and air separators from Taco. The rooftop-mounted air-conditioning system consists of Trane 200-ton chillers.

According to Saccoccio and Associates, the school's HVAC system should qualify for LEED credits in two areas—"Optimize Energy Performance" and "Innovation in Design"—based on expected energy savings and the reduction in the amount of materials—system piping in particular—used.

*Information and photograph courtesy of Taco Inc.*

**Circle 101**