



Roger L. Putnam Vocational Technical Academy

Springfield, Massachusetts

General Information

Location: 1300 State St. Springfield, MA 01109

Scope: 315,000 square feet

Cost: \$114,303,152

Completion: 2012

Enrollment: 1,632 students, grades 9th to 12th

Certification: MA-CHPS



Photo Credit: Consigli Construction Co.

Project Overview:



The new **Putnam Technical Vocational High School** in Springfield, Massachusetts opened in September 2012 to accommodate over 1,600 students in grades 9 to 12. Replacing the 73 year-old facility, the state-of-the-art, 315,000 square-foot facility was designed to meet the state-adopted **Massachusetts Collaborative for High Performance Schools (MA-CHPS)**, a program that is actively advancing the design and construction of high performance schools that reduce the use of energy, water, and other materials while creating a healthy school environment.

Project Team:

Owner's Project Manager (OPM): ARCADIS US, Inc.

Construction Manager @ Risk Firm: Consigli/
Morganti, Joint Venture

Architect/Engineer: Drummy Rosane Anderson
(DRA) Architects, Inc.

Project Funding:

The City of Springfield/Massachusetts School Building Authority's (MSBA) reimbursement rate was 90 percent. Initial project savings back to the MSBA in 2010 was \$11 million in total project savings. The MSBA reinvested \$10 million of the savings back to the City of Springfield for the historic renovation of the Forest Park Middle School project.

In March 2013, the project earned the city of Springfield rebates totaling approximately \$190,000 from **Western Massachusetts Electric Company (WMECo)**.



Building Green School Facilities in MA

In 2009, Massachusetts became one of the first states to adopt the **Collaborative for High Performance Schools (CHPS)** criteria for its education facilities. Besides an emphasis on efficient energy consumption, the program looks to actively reduce the use of water and materials while reducing operating costs.

The state requires all **Massachusetts School Building Authority**-funded schools (even if it does not apply for MA-CHPS verification) to meet minimum levels of sustainability standards, including energy efficiency, materials selection, indoor environmental quality, and operations and maintenance. A school can meet these requirements by attaining 40 points in MA-CHPS for new construction, 35 points for renovation.

High Performance Features:

The \$115 million Putnam project includes controlled lighting, controlled heat sensors, occupancy sensors, and rainwater harvesting among other energy and water saving measures. These measures will save 1.1 million kilowatt hours per year - the same as taking nearly 150 cars off the road - for annual savings of about \$130,000.



Below are highlights of some of the school's high performance features:

- **Building Management System:** State-of-the-art system allows complete control of HVAC system from the facility manager's office or any remote location with an internet connection. Limited-access interactive BMS monitoring stations were set up in relevant shops as a learning tool.

"The effort is also important in the vocational high school setting because the students can see firsthand what the future of energy is going to be."

Peter Clarke - WMECo President & Chief Operating Officer

- **Energy Recovery VRVs:** Daikin VRV Heat Recovery System in office spaces allows simultaneous heating and cooling within the same system to eliminate the need to run central boiler or chiller plants when minimal conditioning is required.

- **Heat Recovery Rooftop Units:** Two-tier units recover heat from exhaust air to pre-heat fresh air in automotive shops.

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- **Waste Oil Unit Heater:** Unit heater in automotive shop runs on used motor oil to provide supplemental heat source.
- **Intelligent Lighting Controls:** Lighting system fully customizable and programmed to automatically dim or shut off unused lighting based upon time of day schedule, occupancy and daylight sensors
- **Grey Water Harvesting:** External tanks capture and treat rain water to be used in toilets and urinals



This case study was prepared by NEEP with information provided by ARCADIS US, Inc. To learn more about this project, please contact Rita Coppola-Wallace, City of Springfield Capital Asset Construction Director (rcoppola@springfieldcityhall.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.