



Mechanical Engineering for the Northeast



LUNENBURG PRIMARY SCHOOL
LUNENBURG, MA

MARGO JONES ARCHITECTS
62,374 SQUARE FEET

The Lunenburg Primary School is a 62,374 square foot, two story elementary school building for children in pre-kindergarten through second grade. The building contains classrooms with individual bathrooms, a gym/multi-purpose room, a kitchen and cafeteria, a media center, music room, an administrative office space, mechanical rooms, and other miscellaneous spaces. Three cast iron modular combination gas/oil-fired boilers provide heating. Heating is distributed to the building by a direct return hydronic loop. The main and spare primary circulators operate with variable speed controls to save energy. Mains are sized for low pressure drop.

Terminal units consist of baseboard radiation in the classrooms; unit ventilators in the media center, music room, cafeteria, and teachers dining; cabinet unit heaters in the corridors; convectors in interior offices and some bathrooms; and unit heaters in utility spaces. Classroom ventilation is provided by two enthalpy type energy recovery units that recover both sensible and latent heat from exhaust air to preheat and humidify incoming fresh air. The system is designed to provide 15 cfm per person. The units have an economizer capability and the ability to add partial mechanical cooling.

The multi-purpose room is ventilated using an air-handling unit equipped with a variable speed drive that automatically adjusts the ventilation rate to correspond to the occupancy using carbon dioxide level as an indicator. The administration area is air conditioned and ventilated using an air-handling unit. The control system uses microprocessor based DDC controllers.

