

Executive Summary:

The purpose of this report is to determine if Manassas Park Elementary School (MPES) is in compliance with ASHRAE Standard 62.1-2007 and ASHRAE Standard 90.1-2007.

Manassas Park Elementary School is a LEED® Gold elementary school that was built on existing school grounds in Manassas Park, Virginia. It houses students from third to fifth grade, and utilizes small classrooms to accommodate the schools progressive educations programs. It is particularly important that this building conform to minimum ventilation and performance requirements of the aforementioned standards, as they are prerequisites for LEED® Certification.

The ASHRAE Standard 62.1-2007 compliance analysis showed that the building is compliant with the standard in its entirety. Section 5 of the standard showed that MPES has a high quality indoor air environment, and Section 6 calculations proved that ventilation levels are more than acceptable for all occupied spaces in the building. Both of these building traits have recently been linked to increased productivity and decreased absence among students.

MPES also came very close to completely complying with ASHRAE Standard 90.1-2007. The equipment within the building that is non-compliant represented only a small portion of the total system, virtually rendering its nonconformity negligible with respect to the whole building efficiency. Although exact causes of non-compliance have yet to be determined, it is speculated that errors are due to miscalculations and/or specification errors conducted during the initial design. There is, however, a possibility that this analysis followed a different compliance path for specific requirements, and that the systems that were deemed *non-compliant* by this report are still reasonably acceptable with respect to the standard.

Because the MPES design team had a goal of achieving LEED® Gold certification, the cumulative modeled energy use of the system is less than that of a comparable school. Specifically, the use of light wells and natural daylighting practically eliminated the dependence on artificial light in most of the perimeter zones as well as select interior zones (throughout a specific range of weather conditions). Further information on modeled energy use of the building can be found in MPES Technical Report 2.

