



TECHNICAL REPORT I
ASHRAE STANDARD 62.1
VENTILATION COMPLIANCE

EXECUTIVE SUMMARY

ANSI/ASHRAE Standard 62.1-2004, *Ventilation for Acceptable Indoor Air Quality* sets forth minimum ventilation rates for typical spaces. Its goal is to provide acceptable indoor air quality for human occupants and “to minimize the potential for adverse health effects.” The purpose of this report is to evaluate the Gallaudet University Sorenson Language and Communication Center (SLCC) in Washington, DC for its compliance with this standard.

The SLCC is an 83,000 SF education facility on the campus of Gallaudet University in the heart of Washington, DC. The building is served by six (6) Trane M-Series Climate Changer Air Handling Units. Each unit serves a distinct zone within the facility that is unique in use and occupation schedule. The spaces served include classrooms, offices, conference rooms, computer labs, media studios, therapy rooms, audiology labs, and typical support spaces. In total, the AHUs are designed to provide 72,875 CFM of conditioned air to 142 terminal VAV units. 21,360 CFM – or about 30% – of this supply is outdoor air.

The ventilation rate procedure explained in ASHRAE Std. 62.1 Section 6.2 was used to evaluate the HVAC design of the SLCC. This procedure is intended to reduce contaminants to acceptable levels based on space function, size and occupant density. Design calculations were based on a standard CFM/Person rate for typical spaces, while evaluation calculations included CFM/SF rates. Assumptions correlating the space function to those provided in Table 6-1 of ASHRAE Standard 62.1 were made with the specific program for each space unknown. Input numbers were derived from mechanical drawings, narratives, and calculations provided by the primary MEP engineers.

The calculations performed in this report show that the design for the SLCC does not meet ASHRAE Std. 62.1 requirements. Overall, the HVAC system provides 30.6% less outdoor air than is necessary. Five (5) of the six (6) AHUs do not meet minimum outdoor air requirements, while the sixth exceeds them by 24%. Much of this difference between design and calculations may be accounted for in the assumptions made, and their impact on the system ventilation efficiency.

All assumptions, procedures, calculations, analyses and conclusions regarding the design of the SLCC ventilation system may be found within this report.