PROJECT: Touhill Performing Arts Center

OWNER: University of Missouri-St. Louis

CHALLENGE: The University wanted a state-of-the-art performing arts center, which allowed the regional community to experience and appreciate the power of the performing arts. It is a symbol of this University’s commitment to integrate education, innovation and excellence. The site selected was challenging from a construction and acoustical perspective with the building located just 20 feet from an active St. Louis MetroLink commuter train line, also right in the flight path of commercial traffic to St. Louis Lambert International Airport. In addition, the central plant that serves the building is located on the opposite side of the commuter rail tracks.

CONSTRUCTION COST: $52 million

BUILDING SIZE: 123,000 sq ft

SCOPE: The state-of-the-art performing arts facility includes a 1,625-seat performance hall with orchestra pit (the only performance space of its size in St. Louis), a 300-seat theater, 15 dressing rooms, and a 2,300 square foot rehearsal room.

APPROACH: Close cooperation the acoustical consultant, Kirkegaard & Associates, was required to design HVAC systems to meet the strict acoustical requirements. An under-floor distribution system was designed for the performance theater due to its large volume, and floor-to-roof height of 60 feet. The low velocity, low pressure, displacement ventilation system delivers 60°F air directly below the seats to maintain space comfort conditions in the areas occupied by people. Due to the complexity of the building systems, commissioning of the building systems was essential. McClure Engineering provided complete building commissioning services for all major building systems, including mechanical, electrical, emergency power, lighting, theatrical lighting, plumbing, fire alarm and suppression, smoke exhaust, temperature controls, and telephone/data systems.

COMPLETION: 2004

AWARD: 2004 St. Louis Construction News & Review Regional Excellence Award