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Wiss, Janney, Elstner Associates, Inc. (WJE), Receives $150,000 Research Grant from the American Society of Heating, Refrigerating and Air-Conditioning Engineers

NORTHBROOK, IL (October 23, 2009) — Our nation's understanding of energy efficiency could improve significantly using WJE testing and methodology procedures developed through a two-year $150,000 research grant from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). The grant, RP-1478, sponsored by ASHRAE's technical committee 4.3, Ventilation Requirements and Infiltration, calls for airtightness measurements for mid- and high-rise nonresidential buildings nationwide. Collected data will be analyzed and used to improve building energy performance.

With a lack of scientifically gathered building airtightness data for mid- and high-rise recently constructed nonresidential buildings, research will help in the critical role of understanding current building envelope air tightness strategies. WJE will look to improve concerns of pressurization of building interiors to protect against outdoor releases of airborne chemical, biological, and radiological agents as well as the impacts of air leakage in commercial buildings on other non energy aspects of building performance. Results will enable WJE and ASHRAE to strengthen the industry's knowledge of developing better building envelope materials and designs.

Building envelope airtightness data will be collected from twenty-four to thirty-six existing mid- and high-rise nonresidential buildings built since 2000 and will include a subset of at least five sustainable buildings. Measured data with respect to building design and construction parameters will be used to examine differences between tight and leaky buildings. WJE secured an additional $280,000 in funding from Oak Ridge National Laboratory, DuPont Building Innovations, and the Energy Conservatory.

Energy Conservatory's automated performance testing system with multichannel pressure measurement and data logging capabilities will be used to continuously monitor indoor and outdoor pressure differences. By monitoring the pressure differences across all enclosure orientations and between interior zones, it will be possible to determine if internal pressure fields are uniformly induced throughout the different buildings. TECLOG analysis software will also be implemented using data collected through automated door fan tests from multiple pressure difference sensors. WJE will coordinate the team's efforts to report the results and findings in a comprehensive final report detailing the measurements, observations, and calculations.

"Obtaining this important information is critical to understanding how we can improve energy efficiency of our nation's mid- to high-rise buildings," said WJE Principal Wagdy Anis, FAIA, LEED AP. "Improved airtightness, energy efficient windows, thermal insulation, and replacement of older HVAC systems with smaller, more efficient newer systems can improve overall building energy performance and will also create new jobs in the construction sector," said Anis.

Wiss, Janney, Elstner Associates, Inc. (WJE), is an interdisciplinary firm of architects, structural engineers, and materials scientists that specializes in the investigation, analysis, testing, and design of repairs for historic and contemporary structures. WJE focuses on delivering practical, innovative, and technically sound solutions across all areas of construction technology. Since the firm's founding more than fifty years ago, WJE specialists bring the collective experience gained from conducting more than seventy-five thousand investigations worldwide to every construction challenge. WJE combines state-of-the-art laboratory and testing facilities, nationwide offices, and knowledge sharing systems to provide solutions for the built world. For more information, please visit wje.com.

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