# ASHRAE NATIONAL NEWS

**American Society of Heating, Refrigerating and Air-Conditioning Engineers**

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## Five BACnet Addenda Open for Public Review

ATLANTA - Five addenda to ASHRAE's BACnet standard are available for public review until May 1.

ANSI/ASHRAE Standard 135-2004, BACnetR -- A Data Communication Protocol for Building Automation and Control Networks, allows building equipment and systems manufactured by different companies to work together.

To obtain drafts of or comment on proposed addenda c, d, e, f and g, visit www.ashrae.org/standards.

The BACnet Web services proposed in addendum c would provide access to data in BACnet systems using standard PC desktop software vs. specialized drivers. They also are proposed for the communications between energy utilities and BACnet systems for demand limiting and real-time pricing.

Proposed addendum d contains a number of additions to the standard, foremost of which is the structured view object. This would provide a means for devices to present the relationships between objects and groups of objects, facilitating the development of standard profiles for devices such as VFD drives.

The load control object proposed in addendum e would provide a standardized means for external control over load shedding and is the first of several proposals from the utilities integration working group, working to connect the energy utilities with building automation systems.

Proposed addendum f includes the first of a series of new BACnet access control objects in development in the life safety and security working group. The access door object represents the physical characteristics of an access-controlled door and its associated physical hardware and devices, including door contacts, door locks and card readers.

The work of this group is being done in conjunction with the Security Industries Association.

A new means for securing network communications would be provided through proposed addendum g. The proposed addendum draws on advances in encryption and authentication technologies, allowing two levels of access, with a general key for reading and writing basis system data, and application-specific keys plus authentication for connecting to critical systems including access control (security) and fire safety.

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# Use of ASHRAE Standard 62.1 in IMC Would Provide Lower Costs

ATLANTA - Use of ASHRAE's new ventilation rate procedure in the International Mechanical Code (IMC) would reduce first costs and energy costs.

ASHRAE has proposed that the ventilation rate calculation procedures from ANSI/ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality, be adopted into the IMC published by the International Code Council. The code establishes minimum regulations for mechanical systems using prescriptive and performance-related provisions.

The current ventilation criteria in the IMC are based on ASHRAE Standard 62-1989. Through research, information on indoor air quality and ventilation has evolved. In response, ASHRAE has enhanced its standard to include the new rate procedure. This code change would make the IMC consistent with the standard and the 2006 Uniform Mechanical Code.

The procedure requires designers to account for pollutant sources other than occupants and to account for the efficiency of ventilation systems to deliver outdoor air to the breathing zone, according to Steve Taylor, an ASHRAE member who oversaw development of the proposal.

"Ventilation systems designed using the new procedure will result in somewhat lower outdoor rates for most occupancies compared to the current code, reducing first costs and energy costs," he said.

The proposed changes are scheduled to be evaluated in September 2006 for possible inclusion in the 2007 IMC Supplement.

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# Use of CHP in Critical Facilities Examined in ASHRAE Seminar

ATLANTA - The nation's prosperity is directly linked to secure, reliable and affordable energy. Yet, the vulnerabilities of the country's energy infrastructure were highlighted during recent weather disasters, such as Hurricane Katrina.

"As these disasters illustrated, the safety and well-being of the people and the economy are severely impacted if the electrical infrastructure is lost for an extended period of time," Richard Sweetser said. "One way to avoid the failure is through use of combined heat and power (CHP) systems."

Sweetser will chair a seminar, Critical Facilities, Business Continuity and CHP, at ASHRAE's 2006 Annual Meeting, June 24-28, Quebec City. It takes place from 7:45-9:15 a.m. Sunday, June 25. The seminar is sponsored by ASHRAE's technical committee on cogeneration systems.

The session highlights the CHP plant operation used by Baptist Memorial Hospital, which was the only hospital in the Jackson, Miss., metropolitan area to remain nearly 100 percent operational during Hurricane Katrina and its immediate aftermath.

On Aug. 29, 2005, the hurricane hit Jackson and the city's main power grid failed, the hospital's standby power was enabled, and city water lost. Three hours later, the connection to grid was restored, the hospital load shed about 1.2 megawatts and pumping trucks were supplying water to physical plant. Five hours after that, the grid again became unstable and the hospital switched to island mode and ran only with its 3.2 megawatts cooling, heating and power system. For the next 52 hours, Baptist Medical Center was the only hospital in the Jackson Metro area to be nearly 100 percent operational.

Another example is the blackout that hit the Great Lakes region in August 2003, affecting millions of people and cost the economy more than $5 billion.

When Amityville, N.Y., lost power for 14 hours, South Oaks Hospital continued normal operations, automatically disconnecting from the failing grid, and powering up its 1.3 megawatts CHP system to handle the full load of the hospital.

"Hospital staff never even knew there was a blackout until the local police station called to see if they needed assistance and numerous calls started to come in from worried relatives checking on patients," Sweetser said.

Speakers and topics are:

. The Blackout of 2003 - Montefiore Medical Center's CHP Plant Operation, Harold Smith, Stony Brook Hospital, Stony Brook, N.Y.

. Hurricane Katrina - Baptist Memorial Hospital's CHP Plant Operation, Louay Chamra, Mississippi State University, Starke, Miss.

. 1998 Eastern Ontario/Quebec Ice Storm - Montreal District Energy's CHP Plant Performance, Jay Jayaraman, Enbridge Consumers Gas Co., Ottawa, Ontario.

. Planning for the Next Ice Strom - Design of East Hartford High School CHP Plant, Timothy Wagner, United Technologies Research Center, East Hartford, Conn.

Registration for the 2006 ASHRAE Annual Meeting is $635 ($375, ASHRAE member) prior to May 19. After May 19, the registration fee will be $750 ($490, ASHRAE member). For more information or to register, visit www.ashrae.org/quebeccity.

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Architectural Firm Hired
Walking the Talk: ASHRAE Moves Toward Sustainable Headquarters

ATLANTA - ASHRAE continues to move toward a sustainable headquarters with creation of a Webpage dedicated to the project and selection of an architectural firm.

ASHRAE currently is studying whether to renovate its headquarters in Atlanta as a sustainable building. The Society recently selected Richard + Wittschiebe, an Atlanta architectural firm, to develop a schematic design for the project. ASHRAE also has created a Webpage so members and others can follow the progress of the project.

"This is an exciting opportunity to demonstrate the benefits of using ASHRAE's standards and to 'walk the talk' by creating a showcase for sustainable renovation," William Harrison, who is chairing the renovation committee, said. "We envision creating a 'living lab' where ASHRAE technical

committees can conduct research projects to determine the effectiveness of procedures designed to conserve energy, to prolong the efficient operation of mechanical systems, and to improve indoor air quality."

"ASHRAE is addressing the larger global issues facing our world today by exploring renovation of its building and submitting for gold level LEED certification," Janice N. Wittschiebe, partner, Richard + Wittschiebe, said. "Richard + Wittschiebe Architects is honored to have the opportunity to work with ASHRAE in developing a project that will provide an example of how a building can incorporate concepts of aesthetics and functionality as well as sustainability."

The Webpage, www.ashrae.org/building, contains photos of the building throughout the years, technical information about the building and a comments area.

"We look forward to considering ideas and suggestions from ASHRAE members and encourage them to explore the headquarters renovation page,"
Harrison said. "We want both our renovated headquarters building and the process we use to develop our plans to serve as models for the successful renovation of existing buildings."

The schematic design is scheduled to be completed by June with discussion by ASHRAE's Board of Directors taking place at the 2006 Annual Meeting, June 24-28, Quebec City.

Harrison also noted that the proposed renovation addresses the four goals outlined in ASHRAE's recently adopted strategic plan: by demonstrating sustainable construction, providing space and a laboratory for educational programs, demonstrating ASHRAE's expertise, and providing a global headquarters with technology features to serve the needs of members anywhere in the world.

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# ASHRAE Proposes Lighting Changes to IECC Based on Standard 90.1

ATLANTA - Proposals from ASHRAE would "light the way" for the International Energy Conservation Code to be more consistent with the Society's energy efficiency standard.

ASHRAE has proposed that portions of ANSI/ASHRAE/IESNA Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings, dealing with lighting be adopted in the International Energy Conservation Code published by the International Code Council.

"Electric lighting consumes 20 to 25 percent of electricity used in buildings," Eric Richman, chair of the 90.1 lighting subcommittee, said.
"Lighting also produces additional heat in buildings, with the heat from lighting accounting for 15 to 20 percent of a building's cooling load. The lighting provisions in Standard 90.1 are a significant efficiency improvement over past versions, so ASHRAE encourages the ICC to adopt these lighting improvements for the IECC."

Specifically, the proposals:

. Address reasonable alternatives to showing compliance with line-voltage lighting track and plug-in busway lighting requirements;
. Provide additional control options for exterior lighting.

Additional proposals from 90.1 unrelated to lighting include:

. Add a table of U-factors to match the prescriptive R-value table in the code;
. Strengthen the requirements for hot gas bypass.
. Address HVAC system completion and commissioning requirements.

The proposed changes are scheduled to be evaluated in September 2006 for possible inclusion in the 2007 IECC Supplement.

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# Preparing for the Next Pandemic: Focus of ASHRAE Seminar

ATLANTA - Speculation about an influenza pandemic and the current avian flu outbreak has created growing interest in the need to control indoor environmental factors that affect transmission of infections diseases.

"Viruses in emerging infectious diseases might have jumped from animals (or birds) to humans, but it is mostly in buildings that these viruses could easily spread among us," Hua Qian, University of Hong Kong, said. "The impact of ventilation on infectious diseases transmission and the importance of engineers in designing and installing sound ventilation systems to prevent this spread must be an integral part of the discussion."

Qian will speak on airborne/droplet transmission of infectious diseases and effectiveness of isolation room ventilation at ASHRAE's 2006 Annual Meeting, June 24-28, Quebec City.

The seminar, Preparing for the Next Pandemic: Controlling Transmission of Infectious Diseases in Hospitals, takes place from 10:45 a.m.-12:15 p.m. Monday, June 26. It is sponsored by ASHRAE's technical committee on health care facilities.

Recent outbreaks such as the SARS outbreak in 2003 show that transmission of infectious diseases occurs prevalently in hospitals, according to Michael Keen, P.Eng., chair of the seminar.

The seminar presents theories and experimental results of transmission of airborne and droplet infectious diseases. Applications for effective design of hospital spaces, ventilation systems and environmental conditions are reviewed, including isolation rooms, surgical suites and entire isolation care facilities.

Other topics and speakers are:

. Full-Scale Experimental Apparatus to Study MDR-TB Transmission, Sidney Parsons, CSIR Building & Construction Technology, Silverlakes, Gauteng, South Africa;

. Surgical Isolation Suites, Carl Schultz, P.E., URS Corp., Columbus, Ohio;

. Hospital Renovation for SARS: Some Experience from Taiwan, Yie-Zu Robert Hu, Ph.D., Industrial Technology Research Institute, Chutung, Hsinchu, Taiwan.

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# ASHRAE Hires Construction Manager for Headquarters Renovation

ATLANTA - ASHRAE's move toward a sustainable headquarters continues with hiring of a construction manager and creation of a technical advisory committee.

ASHRAE currently is studying whether to renovate its headquarters in Atlanta as a sustainable building. Gay Construction Co., a commercial construction company in Smyrna, Ga., will serve as construction manager for the project.

"Gay Construction Company is proud to join the project team as general contractor," said L. Tom Gay, president of Gay Construction Co.
"ASHRAE is known industry wide for setting the standards of performance in the mechanical field. The renewed ASHRAE building will also define its leadership role for integrating building sustainability principles and environmentally responsible construction. It will be exciting."

Also to ensure the technical expertise of its 55,000 members is included, ASHRAE has created a Technical Advisory Ad Hoc Committee that will provide input into the project requirements for the renovation.

The committee members represent architectural features, mechanical systems, lighting/day lighting, controls, Leadership in Energy Efficiency Design (LEED) or equivalent building rating systems, indoor environmental quality, energy, operation and maintenance/commissioning, and living laboratory.

More information about the project can be found at www.ashrae.org/building, including photos of the building throughout the years, technical information about the building and a comments area.

A schematic design is scheduled to be completed by June with discussion by ASHRAE's Board of Directors taking place at the 2006 Annual Meeting, June 24-28, Quebec City.

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# Multiple Benefits Solutions Discussed in ASHRAE Broadcast

ATLANTA - New construction and major renovations represent opportunities to incorporate measures to mitigate the impact of natural, accidental and intentional incidents as well as deliver more comfortable and cost efficient buildings.

"With guidance from ASHRAE, architects and engineers can expand their abilities to evaluate risks and benefits associated with solutions that can provide these multiple benefits," Lawrence Spielvogel, P.E., said.

A free satellite broadcast and simultaneous Webcast, Multiple Benefits Solutions for Enhanced Building Security, from ASHRAE will be held on Nov. 14, 2006. It is sponsored by ASHRAE's Presidential Ad Hoc Committee on Homeland Security, of which Spielvogel is chair, under a grant from the Alfred P. Sloan Foundation in New York.

The program will focus on methods that can be used in design, construction and operation of buildings to reduce vulnerabilities while also providing benefits such as improved reliability, safety, comfort, energy use, and operating costs, according to Spielvogel.
It is centered on proposed ASHRAE Guideline 29P, Risk Management of Public Health and Safety in Buildings.

The program will feature two panel discussions with short presentations, and live question-and-answer sessions with the audience.

The first discussion will focus on the principles of risk management and how they can allow treatment of health, safety and security issues that extend beyond those normally considered in current practice, codes and standards.

Panelists are George Glavis, P.E., the U. S. Department of State, D. Scott Fisher, P.E., State Farm Insurance Co., James Wood, Ph.D., P.E., the Building Diagnostics Research Institute, Richard Bielen, P.E., National Fire Protection Association, and Ronald Vallort, P.E., Ron Vallort and Associates, Ltd.

The second panel will discuss the application and integration of architectural and engineering principles and practices to achieve the levels of acceptable risks and benefits defined by the risk management approach.

Panelists are Stuart Knoop, Oudens + Knoop Architects, P.C., Andrew Persily, Ph.D., National Institute of Standards and Technology, William Coad, P.E., Coad Engineering Enterprises, Patrick Spahn, P.E., U. S. Department of Homeland Security, and Lawrence Spielvogel, P.E., consulting engineer.

Online registration will begin on Oct. 2, 2006. For the latest information regarding this broadcast/Webcast, visit www.ashrae.org/homelandsecuritybroadcast2, or call 678-539-1139.

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