



# ASHRAE NATIONAL NEWS

## American Society of Heating, Refrigerating and Air-Conditioning

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### Data Center Case Studies Focus of ASHRAE Book

ATLANTA – Data centers are becoming increasingly more difficult to adequately cool, due to increased datacom performance that results in increased heat dissipation.

Even though performance has increased at a more rapid rate than power, the power required and the resulting heat dissipated by the datacom equipment is putting a strain on data centers.

Case studies and guidance on cooling data centers is available in a new book from ASHRAE, High Density Data Centers – Case Studies and Best Practices.

“In the struggle to improve the thermal management characteristics of data centers, it is important to assess today’s data center designs,” Roger Schmidt said. “This book provides case studies of high density data centers and a range of ventilation schemes that demonstrate how loads can be cooled using a number of different approaches.”

Schmidt is a member of ASHRAE’s technical committee on mission control facilities, technology spaces and electronic equipment, which wrote the book.

Case studies featured in the book include the National Center for Environmental Prediction, the IBM Test Facility in Poughkeepsie, N.Y., the San Diego Supercomputer Center, the Lawrence Livermore National Lab Data Center, the NYC Financial Services Data Center, the Georgia Institute of Technology Data Center, the Cedars-Sinai Medical Center Data Center and the Hewlett-Packard Richardson Datacool™ Data Center.

The book is part of the ASHRAE Datacom Series, developed to provide a more comprehensive treatment of datacom cooling and related subjects. Other books in the series are ASHRAE’s Design Considerations for Datacom Equipment Centers, Best Practices for Datacom Facility Energy Efficiency, Thermal Guidelines for Data Processing Environments, Liquid Cooling Guidelines for Datacom Equipment Centers, Datacom Equipment Power Trends and Cooling Applications, and Structural and Vibration Guidelines for Datacom Equipment Centers.

The cost of High Density Data Centers – Case Studies and Best Practices is \$54 (ASHRAE members, \$43). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

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### New Publication Provides Energy Efficiency Guidance for Warehouses

ATLANTA – The latest publication in the Advanced Energy Design Guide series will help guide the construction of warehouses using off-the-shelf technology that can cut energy use 30 percent or more annually.

The Advanced Energy Design Guide for Small Warehouses and Self-Storage Buildings, published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, gives guidance to architects, engineers and others on building design teams on how to use best design practices to create energy-saving warehouses. Written in partnership with The American Institute of Architects, the Illuminating Engineering Society of North America, the U.S. Green Building Council,

and the U.S. Department of Energy, the book is available for free in electronic form at [www.ashrae.org/freeaedg](http://www.ashrae.org/freeaedg). Hard copies are available for purchase in the ASHRAE Bookstore through the same Web page. The Metal Buildings Manufacturers Association (MBMA) contributed to the book's authorship.

The book, intended for use by contractors, designers and owners of small warehouse buildings, covers an integrated design process for delivering energy efficient warehouses as well as sets of prescriptive requirements for efficient warehouses in each climate zone. Case studies of exemplary warehouse designs are also provided, as well as detailed "how-to" design guidance to help guide construction teams. Recommendations cover the subject areas of building envelope, lighting and daylighting, HVAC and service water heating.

The Guide covers warehouses up to 50,000 square feet and self-storage buildings that use unitary heating and air-conditioning equipment. Warehouse and storage buildings represent a significant amount of commercial floorspace in the United States and account for nearly 8 percent of energy use of in commercial buildings.

"The Guide provides a clear, straightforward prescriptive path to meeting the 30% target savings," says Ron Jarnagin, chair of the committee that wrote the publication. "Recommendations are easy to apply, allowing contractors, consulting engineers, architects, and designers to easily achieve advanced levels of energy savings without having to resort to detailed calculations or analyses."

The cost of the print version of Advanced Energy Design Guide for Warehouses and Self-Storage Buildings is \$59 (\$47 members). To download the free electronic version, please visit [www.ashrae.org/freeaedg](http://www.ashrae.org/freeaedg).

To order a print copy of the book, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

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### **ASHRAE President to Provide Testimony on Green Buildings to U.S. House Committee**

ATLANTA – ASHRAE's work in providing advanced energy guidance will be highlighted in upcoming Congressional testimony.

ASHRAE President Kent Peterson, P.E., is slated to speak Wednesday, May 14, at a hearing, *Building Green, Saving Green: Constructing Sustainable and Energy-Efficient Buildings*, before the Select Committee on Energy Independence and Global Warming of the U.S. House of Representatives.

"As Congress examines all sources and causes of global warming emissions, it must consider how the buildings we work and live in can contribute to reduce the impact of climate change," Rep. Edward Markey (Mass.), chair of the committee, said. "ASHRAE's standards offer a foundation for energy-efficient buildings, and the Committee is interested in how building codes can be used to increase the number of green buildings throughout the nation."

Peterson will talk about ASHRAE's role in writing standards for adoption into building codes and its work in developing guidance that goes beyond minimum requirements in building codes.

"Today's buildings mortgage our energy and environmental future," Peterson said. "In the past, Standard 90.1 and other guidance from ASHRAE focused on minimum requirements to save energy. Recognizing that we must do more, ASHRAE is looking ahead to producing advanced energy design guidance, with the goal of net-zero energy buildings. We welcome the opportunity to stress the need for a more energy efficient future before the House Committee."

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### **Standard 161-2007 Published ASHRAE Publishes Nation's First Airplane Cabin Air Quality Standard**

ATLANTA – Proper air quality is essential for general health and well-being in indoor spaces. Recognizing this, most people will take steps to address air quality in their homes and workplaces, but what about when on board an airplane when passengers have no control in a very high-density environment?

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) addresses air cabin air quality in its new Standard 161-2007, Air Quality Within Commercial Aircraft. The standard, which covers issues such as temperature, cabin pressure, air contaminants and ventilation rates, can be voluntarily adopted by individual airlines or the Federal Aviation Administration (FAA), or advocated for by airline passenger and employee groups.

“Compliance with this standard will go a long ways toward ensuring good air quality for passengers and crews,” says Byron Jones, chair of the committee that wrote the standard. “Aircraft passengers and crew make up a wide cross section of the general population, ranging from the very young to the very old, from the healthy to infirm. And unlike many other indoor environments, occupants do not have the ability to remove themselves from the environment, which is at a lower pressure and relative humidity than that found in many other environments. Standard 161 will help create a healthier, more enjoyable ride for the great variety of passengers on board.”

The standard also addresses chemical, physical and biological contaminants that could affect air quality as well. Methods of testing are provided for ensuring compliance with the standard’s requirements.

Standard 161 applies to commercial passenger air-carrier aircraft carrying 20 or more passengers. It is intended to apply to all phases of flight operations and to ground operations when the aircraft is occupied by passengers or crew members.

The cost of Standard 161-2007, Air Quality Within Commercial Aircraft, is \$54 (\$43 members). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide); fax 404-321-5478; or visit [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

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