



Shaping Tomorrow's Built Environment Today

BUILDING ENERGY DATA: A CRITICAL RESOURCE

THE ISSUE

Reducing the energy use of buildings requires the availability of a robust database of building energy data to define the baseline against which progress can be measured. Because buildings account for approximately 40% of US energy use¹ and about 74% of US electricity consumption², they can be a significant resource for reducing energy use. However, limited data exist to actually understand the energy use associated with individual buildings and the factors that affect energy use. Despite increased focus on improving the ability for all new buildings to use energy more efficiently, existing buildings represent the greatest source of energy use within the sector, and of course when initially occupied, new buildings become existing buildings.

Improved understanding of existing building energy use characteristics will clarify the relationship between intended and actual performance. Understanding these gaps can result in better building design, inform operations and maintenance practices, and provide input to energy codes and standards that establish design and construction criteria for new buildings, and renovations and additions to existing buildings.

ASHRAE'S ROLE

As a technical society whose priorities include reducing the energy use of buildings, ASHRAE has the resources and expertise to guide the development of more energy efficient buildings. ASHRAE disseminates best practices to professionals across the building sector by developing standards, guidance, and educational resources. However, those best practices must be informed by robust data on the actual energy performance of buildings. To help building owners and operators understand the energy use of their buildings and opportunities for improvement, ASHRAE has developed a building energy rating program and performance tool (the Building Energy Quotient³) that requires valid data across building types and climate zones. ASHRAE has also updated its Standard 105, and is developing standards for measuring and expressing building energy performance in a rating program (Standard 214P), as well as a standard that establishes consistent practices for conducting and reporting commercial building energy audits (Standard 211P).

ASHRAE'S VIEW

Existing Federal and State programs, like the US Energy Information Administration's Commercial Buildings Energy Consumption Survey (CBECS), serve as the baseline for many initiatives designed to reduce energy consumption in both new and existing buildings. The importance of this data will continue to grow as the nation and the building community focus on reducing energy use.

Recommendations for maintaining and enhancing the availability of building energy data:

- Adequately fund the US Energy Information Agency to allow for the timely release of robust datasets focused on the energy use of buildings and increase their coverage. Also support the agencies and programs that make use of this data, including EPA's ENERGY STAR program and those administered by the US Department of Energy's Building Technologies Office.
- Support the development and implementation of technically sound private sector programs designed to reduce building energy use and report on the actual energy use of buildings, such as ASHRAE's Building Energy Quotient program.
- Support the adoption, application, and use of ASHRAE Standard 105 to provide a uniform and robust method for measuring and expressing building energy performance.

¹ US Department of Energy. 2011. "2011 Buildings Energy Data Book". <http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=1.1.3>.

² US Department of Energy. 2011. "Buildings Share of U.S. Electricity Consumption (Percent)". <http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=1.1.9>

³ www.buildingeq.com