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Course Leaders



Julia Keen, Ph.D., P.E.,
ASHRAE Member, HBDP
Associate Professor, Kansas State University

Julia Keen is an Associate Professor of Architectural Engineering and Construction Science at Kansas State University with a specialty in HVAC, energy codes and integrated building design. She recently earned a Ph.D. in Curriculum and Instruction from Kansas State University where she also received a Bachelor's and Master's Degree in Architectural Engineering.

Julia's previous work as a Mechanical/Electrical Project Engineer designing mechanical and electrical systems for large commercial and institutional buildings in the areas of



Joel Primeau, P.Eng.,
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Director of Sustainable Design, Genivar

As Director of Sustainable Design, Joel Primeau leads GENIVAR's Centre of Excellence in Sustainability, providing technical expertise in the design of high performance, sustainable facilities. Joel also trains engineers, architects, and facilities managers on chiller plant optimization, high performance HVAC systems, and heat recovery applications.

Joel's technical expertise encompasses a wide range of engineering design and construction projects, including the supervision of heating, ventilation, air conditioning, refrigeration, heat reclaim, and energy management systems for institutional, commercial, and industrial facilities in these areas of

TECHNICAL FEATURE

10 Common Problems in Energy Audits

By David Morris, P.E., HBDP

Energy audits drive energy savings in existing buildings. Good energy audits followed by solid implementation result in substantial energy savings. Bad energy audits, no matter how good the implementation, result in lower-than-expected savings or no energy savings—and occasionally even increased energy use, wasted investment, angry building owners, and a bad name for energy conservation.

Reviews of actual savings in real buildings show a wide discrepancy in dedicated savings, with many projects delivering savings well under 10% of projected energy costs, far short of what the energy audit promised. In other projects, savings were not realized at all. In some cases, savings were actually negative, with energy use increasing after the audit. This is not surprising, as energy audits are conducted by different firms, with different methodologies, and with different levels of expertise. We look to energy audits for possible explanations.

After reviewing more than 300 energy audits, the following 10 problems were identified as the most common. To assess the frequency and other characteristics of these problems, 30 energy audits were reviewed in more detail. All 30 audits were conducted by different firms, were completed in the last five years, and were drawn from work in buildings across the United States.

The methodology of the study is described within each of the problem descriptions below, but the study was intentionally limited in scope and likely only scratches the surface of the issues at hand.

About the Author
David Morris, P.E., is a professor of Urban Engineering at Michigan State University.

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Judy Caraballo is an associate in the firm's Environmental & Land Development Group and a member of the Litigation & Trial Practice Group. Her practice includes complex commercial litigation, as well as environmental litigation and regulatory matters.

Ms. Caraballo graduated from Duke University School of Law in 2008. While at Duke she was a member of the Guantanamo Defense Clinic where she assisted the chief defense counsel for a Guantanamo detainee with preparation for trial before the U.S. Military Commissions. Ms. Caraballo also served as a member of the Innocence Project where she investigated plausible claims of wrongful conviction. She was also a finalist in the 2007 Jessup Cup moot court board selection competition. Ms. Caraballo was also a member of the Black Law Students Association.

Ms. Caraballo graduated from Berkeley College in 2004 with a B.B.A., magna cum laude, in business administration management. She was also the recipient of the 2004 Robert Asher Outstanding Student Award from her graduating class. Ms. Caraballo is a member of the State Bar of Georgia.

PUBLICATIONS

December 4, 2010 "Tivins Compliance Abroad: The China Conundrum," Law360, December 4, 2010.

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