



Originally opened in 1951, the General Accountability Office headquarters building has had quite a 58-year history. In the late 1970s, the General Services Administration planned an asbestos removal program in the building, but the program (along with a renovation project) didn't begin until the mid-1980s and continued through the 1990s. In December 1995, the GAO building was named to the National Register of Historic Places as a symbol of modern block-type federal office design. Employees moved into newly refurbished space on the second floor in 1996, the fifth floor in 1997, and the sixth floor in late 1999 and early 2000.

The Government Accountability Office is an independent, nonpartisan federal agency that acts as the investigative arm of Congress, while making the Executive branch accountable to Congress and our government accountable to you and me. The GAO issues public reports and guidelines on questionable areas of government spending. In essence, the GAO investigates ways to reduce spending and stretch our tax dollar.

In June of 1999, President Clinton signed Executive Order 13123, "Greening the Government Through Efficient Energy Management." This order, among other energy initiatives, directed the federal government to considerably improve its energy management. The federal government operates more than 500,000 buildings, and this executive order was designed to lead the nation in energy efficient building design, construction, and operation.

As a component of the U.S. energy efficiency trail, in 1998, Leadership in Energy and Environmental Design, or LEED®, was initiated as a government-sponsored rating system developed by the U.S. Green Building Council, or USGBC. In light of this government sponsorship, the GAO headquarters building has frowned on certifying themselves as a LEED building, where, as a nonpartisan federal agency with investigative powers, the question of a potential conflict of interest may arise. Therefore, the GAO developed its own (Green) (A) (the) (D) office energy program that meets – and mostly exceeds – the LEED parameters.

Although the GAO is generally perceived by the tax-paying public as our congressional watchdog, it is clearly a federal agency that practices what it preaches. As an example, shortly after the Clinton Administration's 1999 executive order entailing efficient energy management initiatives, the GAO embarked on a strategy of energy reduction programs using

Energy Accountability

Nonpartisan federal agency makes efficient building design, construction and operation a partisan cause for the taxpayers.

By Roger Frischkorn

btu's per square foot to track and trend their own progress. Since 2003, the GAO headquarters building has experienced around a 16 percent drop in their btu per square foot. Simply stated, the GAO energy reduction programs have substantially exceeded the goals set by the 2005 and 2007 energy acts.

Setting the Government Standard — Introducing "Real-Time" Monitoring
 President Obama is working on a plan to

overhaul federal buildings by pumping billions of dollars into energy-efficient programs — a plan that would, by design, eventually create a return equal to the investment by the federal government and taxpayers. Real funding for an energy initiative? Now there's a new government concept. Yet without skipping a beat, leading this presidential initiative is the GAO's recently-launched "real-time" energy tracking and trending program. Equipped with "on demand" energy information, the GAO can now:

- Accurately predict daily energy use for the whole building and major systems, using the building's "load profile";
- Accurately match real energy use data for the building and systems;
- Account for variations of major equipment using a visual load profile graph;
- Utilize High Performance Computing (HPC) for real-time processing and imaging using innovative algorithm software; and
- Enable detection of changes in energy efficiency by comparison of actual energy use of the potentially degraded system with predicted energy use from the model.

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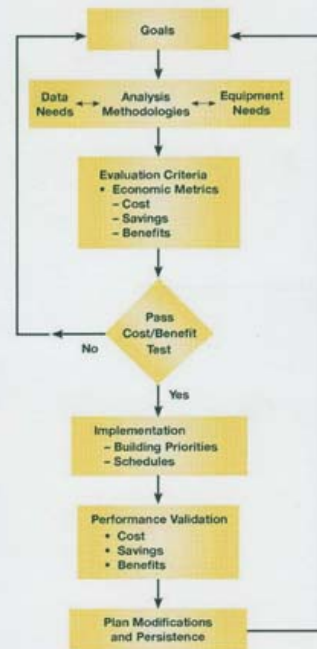


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The "Real-Time" Score Card

Equipped with a variety of diagnostic and visual tools to choose from, including an assortment of custom reports, this trending and tracking software was developed by Northwrite Inc. in cooperation with the U.S. Department of Energy, and was introduced to the GAO by Unicco Government Services. The program also incorporates a (pulse-metering) data fusion engine developed by the U.S. Department of Energy, and, in turn, meets the EPA Act 2005 monitoring process (see flow chart below). Building Automation Systems, commonly identified as energy management systems, which monitor



Metering Plan Development Process

and maintain equipment parameters including room temperatures, also collect daily amounts of stored data that becomes filed for an end-of-the-month review. Typically it is during such reviews where equipment failures or operational anomalies are identified, but not always. How many times have you heard a building or property manager question why their monthly utility bill was so high? More times than not, equipment failures or temporary energy management system adjustments go unnoticed, causing unnecessary energy waste.

What makes real-time tracking and trending unique is the ability to see an equipment failure or operational problem take place while it is actually occurring. Waiting for a data review is no longer the standard. At this point an immediate remedy can be sought and put in place. This is the next level and new frontier in the management of energy use.

If the main headquarters of the Government Accountability Office and its self-governing oversight of energy efficiency is any indication of our government's energy accountability in the future, then the GAO mandate of making the executive branch accountable to Congress and our government accountable to you and me is already off to a great start. **PE**

Roger Frischkorn is vice president of Unicco Government Services. UGL Unicco and Unicco Government Services (www.ugl-unicco.com) is a Global Technical Partner of the Association for Facilities Engineering.



From Left to Right: John DiGiacomo, Senior Facilities Manager, UGS; Dan Packa, GAO Senior Facilities Manager; and Vincent Troisi, Vice President, UGS.