



Energy Engineering Analysis Program

Program Manager 256-895-1710

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

The U.S. Army Corps of Engineers' Engineering and Support Center, Huntsville Energy Engineering Analysis Program (EEAP) assists agencies in achieving federally mandated energy and water reduction goals by conducting comprehensive energy and water optimization evaluations (audits) as a planning mechanism to identify energy reduction opportunities, as well as propose energy related projects. The audits are a means of achieving goals of 25 percent energy reduction (2015 baseline) and 36 percent water use reduction (2007 baseline) by Fiscal Year 2025.

Energy Policy Drivers: Executive Orders 13423, 13514 and 13693, Energy Policy Act 2005 (EPA 05) and Energy Independence and Security Act 2007 (EISA 07)

Benefits of EEAP Evaluations

- Energy and water evaluations are scalable and can add various other salient features
 - Assess renewables, behavioral aspects, other energy-consuming, energy-generating, or energy-interfacing system opportunities
 - Incorporate Capital Investment Strategy (CIS) with viable Energy Conservation Measures (ECMs) and identify various funding streams and programs (Energy Conservation Investment Program, Energy Savings Performance Contracting, Power Purchase Agreements, etc.)
 - Prioritize/sequence total effort into a viable execution road map and glide path for meeting federal mandates and customer goals
 - Fully supports development of project documentation to obtain funding
- Complements the Energy Master Plan (vision) with granular details and roadmap to achieve Net Zero
- Considers the optimal level of analysis; Level II ASHRAE provides more robust analysis to optimally bundle ECMs for maximum effect
- Incorporate Energy Security Assessments (ESAs) – such as microgrids



Huntsville Center mechanical engineer Scott Sheffield and Energy Engineering Analysis Program Manager Raúl E. Alonso discuss HVAC system features detailed in the building plans for the commissary at Redstone Arsenal, Alabama.

Agencies are using energy evaluations to develop their annual budgets and Capital Investment Strategies.

EEAP Energy Survey Summary (as of February 2016)						
Organization	No. of installation surveys	No. of ECMs	Annual energy savings (MMBTU)	Annual Savings (\$ millions)	Capital Investment (\$ millions)	Simple payback (years)
IMCOM	33	2,557	6,778,618	\$137.45	\$489.55	3.6
Net Zero	9	812	256,717	\$8.5	\$74.14	8.7
USACE	39	444	49,337	\$1.432	\$9.37	6.5
Army Reserve	2	746	88,243	\$3.06	\$32.97	10.8
63rd Army Reserve	3	15	216	\$0.11	\$0.67	6.0
81st Army Reserve	15	124	3,313	\$0.123	\$0.688	5.6
88th Army Reserve	16	231	29,182	\$0.333	\$1.834	5.5
DLA	12	117	81,943	\$3.11	\$11.23	3.6
AMC	9	305	545,243	\$3.158	\$29.64	9.4
Totals	138	5,351	7,832,812	\$157	\$649	4.1

U.S. Army Corps of Engineers – Engineering and Support Center, Huntsville

P.O. Box 1600, Huntsville, AL 35807 Public Affairs Office 256-895-1694

www.hnc.usace.army.mil

Distribution A - Approved for Public Release - Unlimited Distribution - February 2016

Services Provided

Huntsville Center provides three levels of American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) compliant analysis for government facilities.

ASHRAE Level I - Walk-through Analysis

- A Level I audit includes a preliminary energy use analysis, but also includes a site visit by a mechanical, water and energy efficiency (MWE2) engineer and a report detailing low-cost/no-cost measures and potential capital improvements for further study. An ASHRAE Level I audit also satisfies one of the prerequisite requirements for the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) for Existing Buildings: Operations and Maintenance.

ASHRAE Level II - Energy Survey and Analysis

- A Level II audit includes the preliminary energy use analysis and ASHRAE Level I analysis, but also includes more detailed energy calculations and financial analysis of proposed energy efficiency measures. The financial analysis or life cycle analysis allows the facility owner to truly understand the financial benefits of installing energy efficient measures. An ASHRAE Level II audit can also earn additional points for LEED for existing buildings.

ASHRAE Level III – Detailed Analysis of Capital-Intensive Modifications

- A Level III analysis is a further expansion from the previous levels of effort and is based on the facility representative's selection of measures to analyze further. This may include further refinement of an energy model or more extensive data collection. The product of this level of survey is typically investment-grade projects with well-defined scopes and performance work statements including economic analyses and cost estimates.

Installation Hotline – Assistance is available to Army installation energy managers and Directorate of Public Works personnel for all EEAP services. Contact: energy_audits@usace.army.mil or 256-895-1710.