



Energy Assessments

An energy assessment is a survey of a building or facility that provides sufficiently detailed information to allow the owner to conduct energy or water-savings programs. The energy assessment document includes information such as appropriate energy and water conservation maintenance and operating procedures, energy conservation measures, energy saving calculations, simple pay-back estimates, and strategies to implement the recommended measures. TCAT offers both high-level and in-depth energy audit services.

TCAT's technical approach to energy assessment is to obtain and analyze energy consumption and related cost information, building systems operational trends, and equipment and facility use profiles, to identify available energy conservation opportunities for the customer. Since energy consumption in buildings is determined by the characteristics and interactions of the three basic systems (energized, non energized, and human), available information on all three areas as they relate to the overall building system and equipment will be obtained during the facility assessment.

The overall energy assessment includes the initial site investigation, data collection and analysis, identification of energy inefficiencies, identification of Energy Conservation Projects (ECP's) and Energy Conservation Measures (ECM's), and the determination of eligibility for Energy Star® certification. The assessments provide the optimal no-cost/low-cost ECMs for the facility or facilities by indentifying and analyzing alternatives such as improved operational techniques and/or new equipment that could substantially reduce energy costs, as well as determining the economic effectiveness of those alternatives. Energy conservation projects (ECPs) requiring extensive repairs, upgrades, or replacements are identified and provided to the customer as possible opportunities to work with an energy performance contractor based on calculated paybacks. When feasible, renewable energy sources and new technology insertion are recommended to the customer as additional options for energy savings alternatives.



All information gathered during the energy assessments is used to develop a list of energy savings opportunities, and potential projects involving application of innovative technology and renewable energy. Energy savings opportunities are organized by building area and system, and ranked as "no cost," "low cost," or "high cost." The list of energy savings opportunities will include estimated cost, estimated energy and energy cost savings, and the simple payback calculated based on the cost and savings estimates. TCAT works with facility personnel to prioritize the potential measures and projects based on cost, impact, and economic feasibility. Costs and payback are calculated based on local energy rate structures as provided during the data collection phase. An appropriate means of evaluating feasibility of any innovative technologies or renewable energy projects identified are also provided.

Results of recent assessments, based on 1.5Msf conditioned space, indicate an average savings of \$0.43/sf/yr with a mean simple payback of 1.1 years. Facilities were a mix of office, classroom, and medical treatment located throughout the United States and conservation measures included lighting, HVAC systems, water conservation, and structural improvements.

TEXAS CENTER FOR APPLIED TECHNOLOGY

There are many problems that require the careful and proper integration of applied technologies to find solutions. The Texas Center for Applied Technology (TCAT) was created to focus on these specific problems and to develop effective and efficient solutions. TCAT's core competency is the innovative application of existing technologies and advanced research to solve complex real-world problems.

TCAT's primary objective is to apply and test technologies to address targeted problems and engage basic research as required. TCAT has employees in a variety of locations with the ability to perform research that cuts across multiple technologies, disciplines, and cultures. The Center's employees are knowledgeable regarding customers' requirements and are ready to respond effectively to provide the best value for the customers' needs including expertise in technology insertion, technology assessments, and test and evaluation.

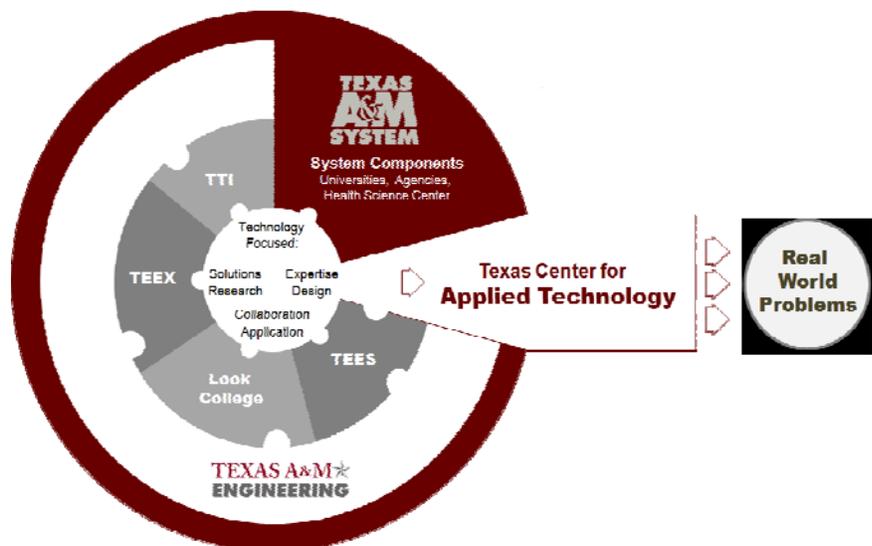
TCAT is part of the Texas A&M Engineering Experiment Station (TEES), a member of The Texas A&M University System. The A&M System is one of the largest and most comprehensive systems of higher education in the United States. Through a statewide network of eleven university campuses, seven state agencies, and a comprehensive health science center, the A&M System educates more than 120,000 students on its university campuses, conducts more than \$780 million in research, and reaches another 22 million people through service each year. TEES is an engineering research agency for the state of Texas and conducts over \$147 million in research annually. Because of the Center's position within the Texas A&M Engineering program, TCAT's expertise can easily be extended by rounding out its team with world class faculty researchers, as appropriate. TCAT is in an excellent position for collaboration not only with The Texas A&M University System components and their customers but with other universities, institutions, centers, and industry.

TCAT'S CORE COMPETENCIES

Energy Sustainability ★ Environmental Sustainability
Manufacturing & Systems Engineering ★ Information Technology ★ Modeling & Simulation
Technology Insertion ★ Test & Evaluation

TEXAS A&M ENGINEERING

Texas A&M Engineering consists of the Dwight Look College of Engineering, and three engineering agencies, including TEES: Texas A&M Transportation Institute (TTI) conducts research and professional education in all modes of transportation. The Texas A&M Engineering Extension Service (TEEX) works to develop a highly skilled and educated workforce and enhances public safety through training, continuing education, and technical assistance.



For more information contact

TCAT Headquarters

Address: 3407 TAMU, College Station, TX 77843

Phone: 979.458.0250

Executive Director

James A. Wall

E-mail: tcatadministration@tees.tamus.edu

Web: <http://tcat.tamu.edu>

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TEXAS A&M
UNIVERSITY
SYSTEM