

Water Conservation and Technology Center



The Texas A&M Engineering Experiment Station's Texas Center for Applied Technology (TCAT) and The Texas A&M AgriLife Extension Service's Texas Water Resource Institute (TWRI) have collaborated to establish the Water Conservation and Technology Center (WCTC). The partnership between the two A&M System sister agencies is vital to the WCTC's efforts to accelerate development and adoption of new and innovative technologies to solve emerging water problems and meet future water supply needs. The WCTC is currently located within the TCAT San Antonio office with plans to move to the new Texas A&M University – San Antonio Campus in the near future.

The WCTC currently focuses on four significant issues. Each topic includes a program of applied research and development; testing and validation; and technology transfer through training and education. This operating model provides WCTC's clients with the opportunity to focus their resources on those thematic areas that are most important to their interests. These themes are

1. Water Reuse Technology and Adoption
2. Water Conservation
3. Brackish Groundwater Desalination
4. Energy Development and Water Use

The WCTC accomplishes its goals for its clients by

- supporting the advances in water conservation and technology development required to implement the Texas State Water Plan
- assessing new technologies for efficiency of water use for agriculture and municipal irrigation
- providing research and development of best management practices for water reuse, desalination, rainwater capture, graywater, and other advances for optimizing water use
- developing and testing new technologies for meeting wastewater standards and water use efficiency associated with energy development
- conducting research on the ways to reduce water demand in the production of energy, and conversely, water's dependency on energy
- conducting research on decentralized water systems as part of net zero water systems
- providing outreach, extension, and policy analysis for innovations in water conservation and emerging technologies.
- organizing and monitoring water conservation programs for regions and communities.

When proposing the development of the WCTC, TCAT and TWRI put together a projects portfolio that included TCAT's recently completed technology demonstration for 50,000 gal/day Advanced Vapor Compression and Evaporation Desalination funded by the City of Laredo and TWRI's five year collaborative, consensus-based stakeholder process (Edwards Aquifer Recovery Implementation Program – EARIP) that protects the Edwards Aquifer, the major groundwater system serving two million people. Both projects were used as the basis for creating the WCTC as they demonstrated both TCAT and TWRI's success in solving today's water problems and the country's future water needs. Therefore, it made perfect sense for the two Center's to combine their resources and knowledge to work on the demands of today's water conservation efforts together.

Some current projects underway by the WCTC include Best Practices Evaluation for Life Cycle Assessments for Water Use in Electric Power Generation sponsored by Electric Power Research Institute; Energy and Conservation for San Antonio Water System (SAWS) Infrastructure sponsored by SAWS; Water Efficiency Standards in State Buildings sponsored by the State Energy Conservation Office; and Regional Water Conservation Program as part of the Edwards AquiferHabitat Conservation Plan.

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.

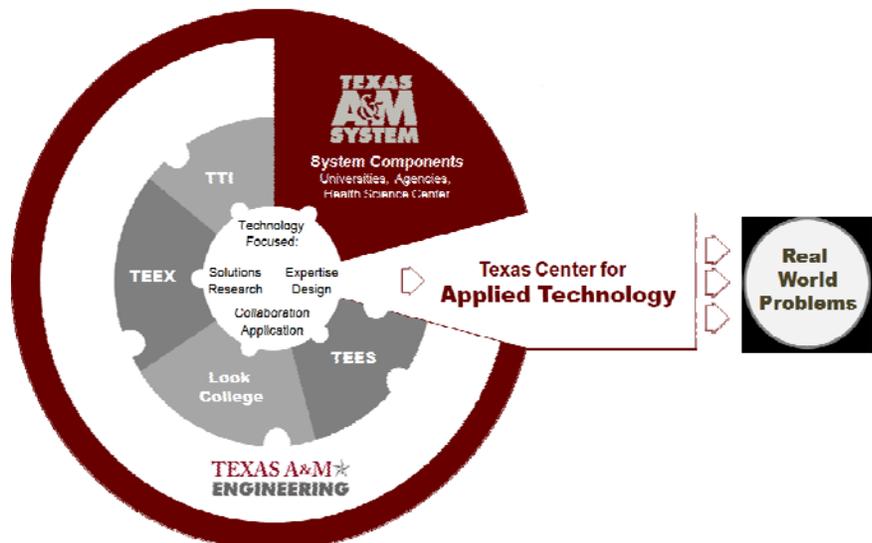
TCAT is part of the Texas A&M Engineering Experiment Station (TEES), a member of The Texas A&M University System. The A&M System is one of the largest and most comprehensive systems of higher education in the United States. Through a statewide network of eleven university campuses, seven state agencies, 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.



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