

Case Study



Cinco Solar, Inc. – University of Texas at Austin, Norman Hackerman Building – Austin, Texas

Cinco Solar's award winning solar thermal system at the University of Texas Norman Hackerman Building is a state-of-the-art installation that provides practical, meaningful results toward the sustainability efforts of the University. Cinco Solar's system will serve as a primary source of heat for the building's HVAC dehumidification reheat process and, in cooler months, will supplement building heat. The application drastically cuts energy expenses for the facility. This unconventional example of clean technology in action will put the power of the sun to beneficial use for years to come. Cinco Solar's solar water heating system was awarded the Association of Energy Engineers (Region IV) Renewable Energy Project of the Year Award for 2011.

Dehumidification in a conventional HVAC system is accomplished by chilling incoming air to a temperature low enough to condense the moisture out of the air before it is delivered into a building. To remove the right amount of moisture, incoming air often must be chilled to a temperature well below the desired set point in the occupied space; this over-chilled air must then be *reheated* to achieve the desired usable temperature. Even in the hottest seasons of the year, there is a heat demand for this HVAC application. Solar thermal technology, which produces maximum results during the intense solar radiation of the summer season, is a perfect application to provide the heat source for this otherwise inefficient process. As an added bonus, heat from Cinco's solar thermal system can be used during cool months to provide building heat for the facility.

"This system provides us with the additional capabilities we need to reduce our building steam consumption during the summer cooling months," said Dan Costello, Associate Director for Facilities Maintenance at The University of Texas at Austin. "We have a strong desire to do this because it enables our campus's Combined Heat and Power Plant to continue to operate at a very high efficiency during summer maintenance activities. As an added bonus, the system will supplement the building's heating system in cooler winter months."

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Facts about Cinco Solar's system:

- 185 evacuated tube collectors installed
- One of the largest evacuated tube solar water heating systems in the United States
- Produces hot water used for air-conditioning dehumidification and reheat application
- Solar energy supports 256,000 square feet of conditioned space
- Expected annual production of more than 2 billion BTUs
- Solar thermal system contributes towards LEED status of the new building
- Custom control system interfaces with Siemens automated building management system (BMS)



Cinco Solar, Inc., was founded in 2007 and is based in San Antonio, Texas. Cinco Solar uses state-of-the-art evacuated tube technology to provide solar water heating solutions on a commercial, industrial, or institutional scale. Solar thermal systems are a natural fit to provide hot water for any facility or process that uses large amounts of hot water. Applications include, but are not limited to, domestic hot water, process heat, building heating and AC dehumidification and reheat. Properly sized, Cinco Solar's solar thermal systems can typically eliminate 80% of the energy costs associated with producing hot water.

The University of Texas Norman Hackerman Building is the newest science building on The University of Texas at Austin campus and will be named in honor and memory of Dr. Norman Hackerman, chemist, professor and President Emeritus. The Hackerman Building will house state-of-the-art classrooms and teaching labs for organic chemistry, research labs for faculty from the Department of Chemistry and Biochemistry, the Center for Learning and Memory and the Institute for Neuroscience and administrative offices for the School of Biological Sciences.

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