



BUILDING DESCRIPTION

The Cantor Arts Center (Cantor) was constructed as part of the original Stanford campus in 1891. The historic museum was expanded and renamed in 1999 for lead donors Iris and B.Gerald Cantor. The Cantor’s encyclopedic collection spans 5,000 years and includes 32,000 artworks within 24 galleries. The building requires a highly controlled environment for preservation of the valuable art collection.

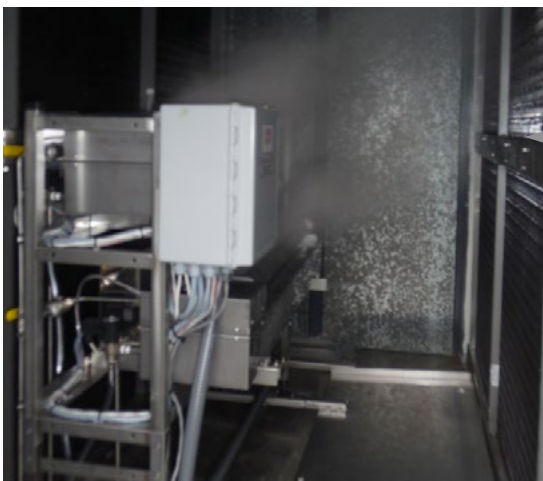


Humidity and temperature are maintained within tight ranges. The museum is open to the public and houses a café.

Building Number	07-100
Gross Square Feet	122,509
Building Type	Museum
Year Constructed	1891
Last Major Renovation	1999

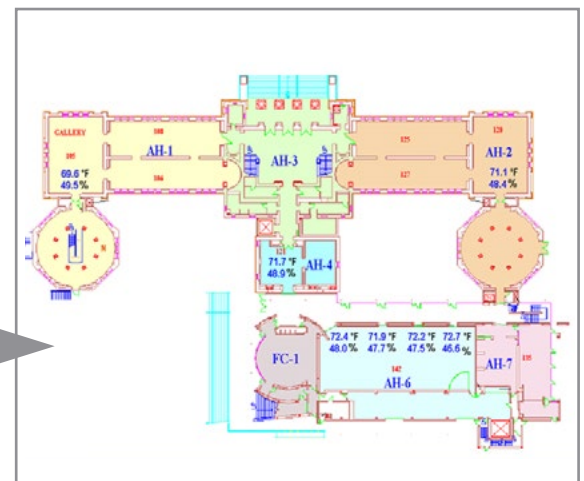
PROJECT OVERVIEW

Stanford made multiple improvements in the HVAC system that reduced energy use. Electrode humidifiers were replaced with more efficient ultrasonic humidifiers, and further savings were achieved by relocating humidity sensors and enhancing the building’s energy management system (EMS). In addition, the project included reenabling economizer function on air handler unit 7 (AHU- 7) and adding a variable frequency drive (VFD) to exhaust fan 7 (EF-7). The project has reduced energy costs in the building by 30 percent.



New ultrasonic humidifiers replace old less efficient electrode humidifiers

Enhancement to the EMS have improved the building performance



MORE INFORMATION

FACILITIES ENERGY MANAGEMENT

Leslie Kramer, Energy Retrofit Programs Manager, 650.725.5388, lkramer@stanford.edu



SUSTAINABLE
STANFORD

KEY PROJECT METRICS

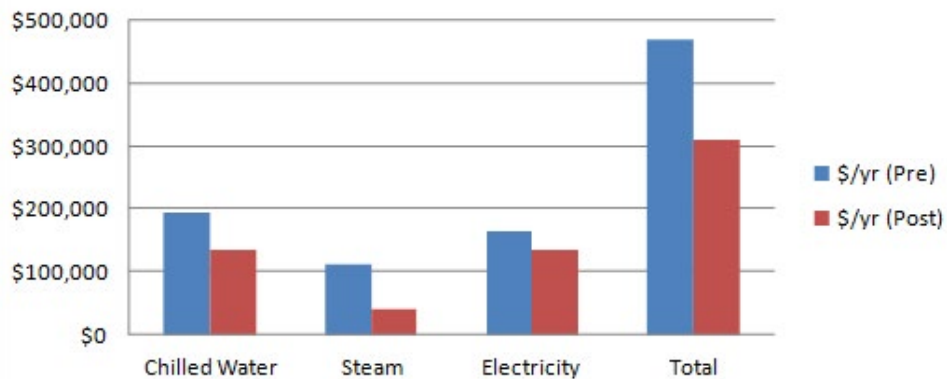
Online Date	February 11
Project Cost	\$524,257
PG&E Rebate	\$122,794
Simple Payback	1.6 years
CO2 Savings	1,933 tons/yr
Baseline Energy Use*	
Chilled Water	982,198 ton-hrs/yr
Steam	9,336,132 lbs/yr
Electricity	2,158,110 kWh/yr
Cost (2013 rates)	\$846,681/yr
Energy Savings**	
Chilled Water	303,104 ton-hrs/yr (31%)
Steam	1,108,298 lbs/yr (12%)
Electricity	919,224 kWh/yr (43%)
Avoided Cost(2013 rates)	\$250,581/yr (30%)

* Average 2007-2009

** Savings based on usage in 2012

PROJECT TEAM	
Stanford Team Member	Role
Scott Gould/Shalani Singh	WBERP manager
Marc Epstein/Jim Perrizo	Facilities Energy Systems Operations ("EMCS")
Daragh Conway	Zone B Manager
Kevin Hutcherson	Zone Construction Project Manager
Steven Green	Building Manager
Non-Stanford Team Member	Role
Salas Obrien	Energy Study and Design consultant
Therma/ACCO	Contractors

Annual Energy Costs Pre and Post Retrofit



*Pre- and post-retrofit costs normalized by applying FY 2013 rates to pre- and post-retrofit energy usage.

MORE INFORMATION

FACILITIES ENERGY MANAGEMENT

Leslie Kramer, Energy Retrofit Programs Manager, 650.725.5388, lfkramer@stanford.edu

