

San Diego Community College District

**ENERGY SAVING PROJECTS  
2007-2000**

YEAR	DISTRICT FACILITY
2007-2008	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• L-100: Heater/Boiler Replacement.</li> <li>• Parking Structure: Lighting Replaced.</li> <li>• Energy Management System (EMS): Upgraded to Web-based energy management control so technicians can access systems District wide from office or home computer.</li> <li>• L Building: Boiler/Chiller Replacement.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• LRC: Replaced roof with white reflective material called "cool roof" which reduces heat gain in the building.</li> <li>• I-100: Replaced roof with white reflective material called "cool roof" which reduces heat gain in the building.</li> <li>• D-100: Replaced roof with white reflective material called "cool roof" which reduces heat gain in the building.</li> <li>• LRC: Replaced chiller with more energy efficient unit.</li> <li>• G Building: Replaced chiller with more energy efficient unit.</li> <li>• LRC &amp; G Building: Replaced air conditioning compressors with more energy efficient models.</li> </ul> <p><u>Miramar College</u></p> <ul style="list-style-type: none"> <li>• A-100: Replaced Chiller with more energy efficient unit.</li> <li>• Central Plant: Replaced water pump motors with more efficient motors.</li> <li>• A-100: Replaced boiler and air conditioning compressor with more energy efficient models.</li> </ul> <p><u>ECC</u></p> <ul style="list-style-type: none"> <li>• Grid Welding System: Replaced with more energy efficient system.</li> <li>• Energy Management System: Upgraded to large heating, ventilation and air conditioning unit.</li> </ul> <p><u>Mid-City</u></p> <ul style="list-style-type: none"> <li>• HVAC/Energy Management System: Upgrade for entire campus improving temperature control and energy efficiency.</li> </ul> <p><u>District wide</u></p> <ul style="list-style-type: none"> <li>• Exterior Parking Lot: New lighting controls which reduces energy usage.</li> </ul>

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2006-2007	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• Replaced old 10Hp electric motor in D-134 air handler with new energy-efficient motor.</li> </ul> <p><u>ECC</u></p> <ul style="list-style-type: none"> <li>• Upgraded to Web-based energy management control so technician can access systems District wide from office or home computer.</li> </ul> <p><u>Miramar College</u></p> <ul style="list-style-type: none"> <li>• D-200, D-300, D-400, F-200 &amp; I-100: Upgraded to Web-based energy management control so technician can access systems District wide from office or home computer.</li> </ul> <p><u>Mid-City</u></p> <ul style="list-style-type: none"> <li>• EMS: Upgraded to Web-based energy management control that included demand lighting so technician can access systems District wide from office or home computer.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• L-100: Replaced Boiler with more efficient unit.</li> <li>• L-100: Replaced inefficient heaters with energy saving units.</li> </ul> <p><u>Miramar College</u></p> <ul style="list-style-type: none"> <li>• D-300: Replaced roof with white reflective material called "cool roof" which reduces heat gain in the building.</li> </ul>
2005-2006	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• LRC: Made program changes to energy management control points in cooling system fan coils and economizers to allow them to operate more efficiently.</li> <li>• C Building: Replaced old 40 ton chiller with new energy-efficient Trane unit.</li> <li>• IT Rooms &amp; Photo Labs: Installed new more energy-efficient air conditioning units.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• Cogeneration 60kW: Installed to heat pool and provide electricity to campus.</li> </ul> <p><u>Miramar College</u></p> <ul style="list-style-type: none"> <li>• Caterpillar Cogeneration 550kW and Absorption Chiller: Installed to heat the pool, provide electricity to campus, and cool the campus.</li> <li>• Science Building: Changed two air handlers for more energy-efficient units.</li> </ul>

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2004-2005	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• P-100: Installed Energy Management System Controls.</li> <li>• E Building: Replaced old air conditioning units with new energy efficient units and installed Energy Management System Controls.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• A-200, B-200, C-300, D-100, D-200, &amp; F-200 Buildings: Replaced old air conditioning units with more energy-efficient units.</li> <li>• B-100, C-100, C-200 K-200, K-300, K-400, &amp; H-100 Buildings: Replaced old air conditioning units with more energy efficient units.</li> <li>• Energy Management System Software: Installed to implement demand limiting on various buildings which shuts off air conditioning units when not needed.</li> </ul> <p><u>Miramar College</u></p> <ul style="list-style-type: none"> <li>• A-200, B-200, C-300, D-100, D-200 &amp; F-200 Buildings: Replaced air conditioning units with more energy-efficient units.</li> </ul> <p><u>Centre City</u></p> <ul style="list-style-type: none"> <li>• Chiller/Boiler/Energy Management System Controls: Installed during remodel.</li> </ul> <p><u>District wide</u></p> <ul style="list-style-type: none"> <li>• Investigated the possibility of installing Sarnafel photovoltaic (PV) units and cool roofs on large flat roofs needing replacement. District roofs were generally in good repair; investigated installing photovoltaic units on the large flat roofs that were in good condition. We identified 230,000 sq. ft. which was 270,000 sq. ft. short of the amount necessary to make the project cost-effective.</li> <li>• Contracted with independent vendors to audit our campuses to determine what we could do to reduce energy and water use. The District implemented their recommendations.</li> </ul>
2003-2004	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• A-114: Replaced two old air handlers with one new energy efficient unit.</li> <li>• LRC: Upgraded Energy Management System.</li> <li>• A-13: Installed new pumps and three-way valve to improve efficiency of system.</li> <li>• E Building: Replaced old air conditioning units with new energy efficient units and Energy Management System Controls.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• B-100, C-100, C-200 K-200, K-300, K-400, &amp; H-100: Replaced old air conditioning units with new energy-efficient units.</li> </ul> <p><u>Miramar College</u></p> <ul style="list-style-type: none"> <li>• Hot Water/Chilled Water System: By upgrading system and removing booster pumps and three-way valves the system is more efficient.</li> </ul> <p><u>District wide</u></p> <ul style="list-style-type: none"> <li>• Replaced old outdoor light timers with new electronic programmable timers.</li> </ul>

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2002-2003	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• C &amp; L Buildings/Theatre: Replaced old pneumatic controls with direct digital Energy Management System Controls.</li> <li>• D-109: Replaced Air Handlers with energy-efficient units.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• Pool Boiler replaced with more efficient unit.</li> <li>• B-100, C-100, C-200 K-200, K-300, K-400, &amp; H-100 Buildings: Replaced old air conditioning units with new energy efficient units.</li> </ul> <p><u>District Office</u></p> <ul style="list-style-type: none"> <li>• Changed heating, ventilation and air conditioning system from a constant volume to a variable air volume system and added to variable air volume and added variable frequency drive automated controls which improves system operation and reduces energy use.</li> </ul> <p><u>District Wide</u></p> <ul style="list-style-type: none"> <li>• Implemented mixed paper recycling.</li> <li>• Replaced old thermostats on all stand alone units with new electronic programmable thermostats which can be programmed to prevent the heating, ventilation and air conditioning operation when there is no occupancy.</li> <li>• Collaborated with SDG&amp;E on several projects. Replaced all magnetic (PCB) ballast and T-12 lamps with electronic ballast and T-8 lamps; also added motion sensors to rooms resulting in lighting energy savings.</li> </ul>
2001-2002	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• A &amp; T Buildings: Various air handlers upgraded to more energy-efficient units.</li> </ul> <p><u>Mesa College</u></p> <ul style="list-style-type: none"> <li>• LRC: Installed two new energy efficient a/c units on first floor computer room and three units on fourth floor.</li> </ul> <p><u>ECC</u></p> <ul style="list-style-type: none"> <li>• Chiller/Boiler: Replaced old inefficient chiller/boiler with 10 energy-efficient package units and Boiler.</li> </ul> <p><u>District Wide</u></p> <ul style="list-style-type: none"> <li>• City, Mesa, Miramar and ECC: Installed variable speed drives on HVAC systems to reduce energy consumption.</li> </ul>
2000-2001	<p><u>City College</u></p> <ul style="list-style-type: none"> <li>• Energy-efficient York Chillers installed.</li> </ul> <p><u>District Wide</u></p> <ul style="list-style-type: none"> <li>• Implemented programs to shut down HVAC systems during breaks.</li> <li>• Changed lighting in all mechanical and electrical rooms from T-12 to T-8 lamps to save energy.</li> </ul>

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1999-2000	<p data-bbox="345 243 483 275"><u>City College</u></p> <ul data-bbox="345 281 1040 312" style="list-style-type: none"> <li data-bbox="345 281 1040 312">• A &amp; T Buildings: Installed energy-efficient Air Handlers.</li> </ul> <p data-bbox="345 348 496 380"><u>District Wide</u></p> <ul data-bbox="345 386 1336 554" style="list-style-type: none"> <li data-bbox="345 386 1336 447">• Began installations of new energy management system on HVAC and some lighting systems District wide.</li> <li data-bbox="345 453 1336 554">• Collaborated with SDG&amp;E on several projects. Replaced all magnetic (PCB) ballast and T-12 lamps with electronic ballast and T-8 lamps; also added motion sensors to rooms resulting in lighting energy savings.</li> </ul>

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**ENERGY SAVING PROJECTS**

**Possible Future Projects**

DISTRICT FACILITY	PROJECT
CITY	<ul style="list-style-type: none"><li>• A-119: Replace air handler with more energy efficient unit.</li></ul>
MESA	<ul style="list-style-type: none"><li>• Gym fan motor replacements.</li><li>• I-300/I-400: Chiller/Boiler Replacement.</li><li>• Replace 48 self-contained HVAC units in bungalows and modular buildings.</li></ul>
MIRAMAR	<ul style="list-style-type: none"><li>• Aviation Compressor Replacement.</li><li>• Replace 47 self-contained HVAC units in bungalows and modular buildings.</li></ul>
ECC	<ul style="list-style-type: none"><li>• Replace old Energy Management System with more efficient system.</li></ul>
DISTRICT WIDE	<ul style="list-style-type: none"><li>• Replacement of Cathode ray tube (CRT) with flat screen monitors</li><li>• Automatic Computer Monitor Shutdown.</li></ul>