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A.B. 398 examples of actual projects

Presented by Jason Geddes, Ph.D., Washoe District 24
April 11, 2003

Attached on the following pages are examples of how this program will work and the details involved.

City of Caldwell, Idaho audit every government building and had **$120,000** worth of retrofits that save the town **$30,000** per year.

Auroroa Higher Education Center spent **$2,100,000** in upgrades and are realizing **$268,000** per year.

Stratton School District in Colorado spent **$400,000** in upgrades and are guaranteed $22,000 per year in gas, electricity and water; $3,600 in operational savings and $24,000 in capital cost avoidance for a total of **$49,600** per year that can go to other educational activities. ***All contracts were in state.***

LaCenter High School in Washington spent **$210,269** in upgrades and are realizing **$21,535** per year.

Louisiana State University spent **$18,650,000** from 1989 to 1994 with a projected annually savings of **$4,334,993** per year and are realizing **$4,672,049**. **Ten** year payback contract that was bought out in **five**.

Northern Nevada Correctional Center prepared a bid for an upgrade as is detailed below. These are actual costs based on what they are spending. An outside agency would finance the project and it would be paid back in 2.9 years.

Year	Electric savings	Gas savings	Water Savings	Guaranteed Savings	Avoided CAP costs
1	$29,437	$13,074	$15,448	$59,355	$64,000
5	$143,123	$63,564	$69,546	$275,426	$0
10	$182,665	$81,125	$80,623	$336,043	$0
Total	$1,564,744	$689,512	$737,398	$2,923,608	$279, 514

Upgrades include

- Water Management System and low flow shower heads
- Lamp and ballast replacement
- Replacing lights and fixtures, replacing water pumps and motors, and replacing steam and hot water boiler (All of which would have to come out of CAP budget)

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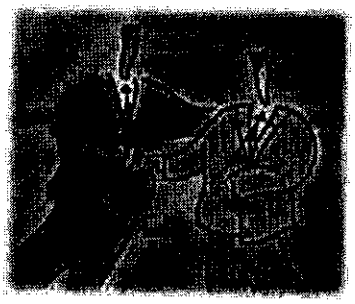


Success Stories

If you have a success story to share, please click here.

K-12 Schools

- Stratton School District, Colorado
- Platte Canyon School District, Colorado
- Hernando County School, Florida
- Marietta Public Schools, Oklahoma
- Prague Public Schools, Oklahoma
- Talequah Public Schools, Oklahoma
- Chambersburg Area School District, Pennsylvania
- Corpus Christi Independent School District, Texas
- Houston Independent School District, Texas
- LaMarque Independent School District, Texas
- Longview Independent School District, Texas
- Sweetwater Independent School District, Texas
- LaCenter High School, Washington

Colleges and Universities

- Auraria Higher Education Center, Colorado
- Western State College, Colorado
- Colorado State Agencies and Colleges, Colorado
- University of Hawaii at Hilo and Hawaii Community College, Hawaii
- Louisiana State University, Louisiana
- Ohio University, Ohio
- Portland State University, Urban Center, Portland, Oregon
- Baylor University, Texas
- Texas Southern University, Texas
- University of Utah, Utah

Government Buildings and Facilities

- Alameda County's Santa Rita Jail - A Solar Photovoltaic Project, California
- City of Boulder's Housing Authority, Colorado

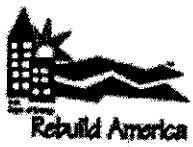
- Colorado State Agencies and Colleges, Colorado
- Fort Polk, Louisiana
- Housing Authority of the City of Pittsburgh, Pennsylvania
- Harris County Central Plant, Texas
- U.S. Army Depot, Texas
- Hill AFB, Utah

Hospitals and Health Care Facilities

- Centura Health -- St. Mary-Corwin Medical Center in Pueblo, Colorado
- All Saints Healthcare System, Texas
- Baylor University Medical Center, Texas

Commercial Buildings and Facilities

- Austin Airport Central Plant, Texas



Energy Services Coalition is a Strategic Partner of Rebuild America, a program of the U.S. Department of Energy.

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Colorado State Agencies and Colleges

Through a joint effort between the State Buildings Programs and OEMC, Rebu Colorado's services are available to state agencies. Five state agencies are already finding out first-hand how performance contracting can enable them to have better, more energy-efficient buildings. The agencies are getting more th $8 million in energy-saving retrofits, and paying for the retrofits with the energy savings that result.

- **The Department of Military Affairs** (DMA) selected an ESCO to perfo an audit of its Englewood headquarters in January 1995. A year and a h later, DMA signed a performance contract for $167,000 worth of new energy-efficient equipment in a two-story and three-story office building. The retrofits included new lighting, a new controls system and repairs o leaky ducts. The ESCO provided financing at 6.75% with a ten year financing term. Actual energy savings measured for the first six months following installation are ahead of the guaranteed savings of $26,000 pe year, which are used to cover the lease payments.

- **Adams State College** (ASC) in Alamosa hired an ESCO to audit its facilities in 1995. In May 1996, ASC signed a performance contract to upgrade lighting systems throughout the campus and to install standalo gas-fired boilers for five buildings. The total project cost was over $500, but ASC supplied $80,000 up front and received over $120,000 in grant and rebates. ASC financed the remainder at 6.75% with a ten-year term The project was completed in April 1997 and is expected to generate savings of $121,000 per year. In November 1997, ASC increased the sc of the contract by another $800,000 to include new boilers in the remair auxiliary buildings. Once this second phase is completed, ASC will be a to abandon the old steam plant and will save at least the guaranteed amount of $125,000 per year, in addition to guaranteed savings from th first phase.

- **Western State College** (WSC) of Gunnison hired an ESCO to audit its facilities in 1996. Just four months later, WSC signed a performance contract for $3.3 million worth of energy saving retrofits. In addition to th typical lighting upgrades and control system, WSC's contract included $ million to decentralize the heating plant by installing new individual boile all auxiliary buildings. The project was financed through a local financin institution at 5.9% with a ten-year term. The total estimated annual savi of $275,000 per year are now beginning to accrue, since installation wa completed during the summer of 1997 and are guaranteed to by the ES in order to cover all project costs.

- **University of Southern Colorado** (USC) of Pueblo hired an ESCO to a its facilities in September 1996. One year later, USC signed a $1.1 milli performance contract. A significant benefit of the contract is that it inclu replacement of USC's existing, failed energy management and controls system. The project also includes lighting retrofits, steam trap replacements, and automated irrigation water controls. The project was financed at 6.1% with a ten-year term. The retrofits are expected to generate $167,000 in guaranteed annual energy savings.

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- **Auraria Higher Education Center** (AHEC) in Denver hired an ESCO t perform an energy audit of a portion of the campus in May 1995. Just o year later, AHEC signed a ten-year performance contract for $2.1 millio worth of new equipment. The retrofits include new chillers and a cooling tower, lighting upgrades, controls, heat recovery and improvements to t fume hood systems. AHEC received $215,000 in grants and rebates to reduce the amount to be financed. Although AHEC chose to provide its financing (through Certificates of Participation at 4.9%), it used the ESC manage the project and used the ESCO's guarantee of energy savings secure the funding. The installation is now complete and energy saving measured for the construction period indicate that the first year's saving will be ahead of the projected savings of $268,000 per year, which were guaranteed by the ESCO to cover all project costs.

Rebuild America

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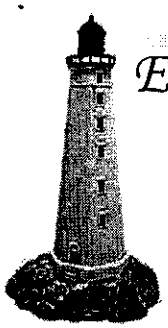
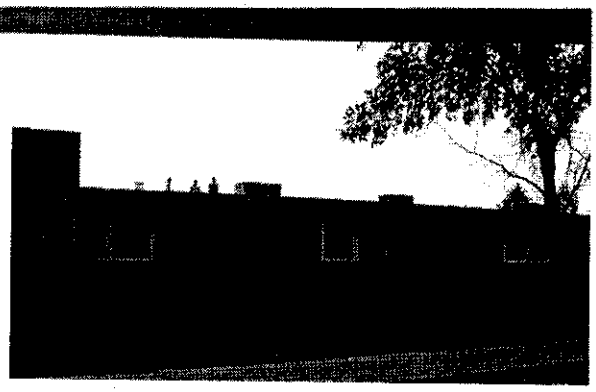


Ennovate Corporation

Project Summary

Energy Savings Performance Contract
Stratton School District R-4



ENERGY SAVINGS PERFORMANCE CONTRACT

Ennovate Corporation, a Colorado-based ESCo, completed construction on a successful ESPC project on September 29th, 2001 for Stratton School District R-4 in eastern Colorado. This project was initiated by Rebuild Colorado, a focused program established by the Colorado Office of Energy Management & Conservation (OEMC) to promote Energy Saving Performance Contracting (ESPC) as a method to save energy in public facilities within Colorado.

Due to hot temperatures in the fall and spring, Stratton School District had identified a need to air condition their Middle/High School facility. As a funding mechanism Stratton Schools researched the ESPC process sponsored by Rebuild Colorado to help offset the additional cost of air conditioning with utility and operational cost reductions. Ennovate Corporation was selected among seven (7) respondents to the RFP solicitation to implement and ESPC with the Stratton School District.

One week after selection, Ennovate had outlined a preliminary scope that was presented to the school board for approval. After approval of the preliminary scope: 1) Ennovate diligently tested and data-logged equipment to assess existing equipment efficiencies; 2) Developed the final scope; 3) Solicited bids from local subcontractors; and 4) Developed a final ESPC agreement. All of these tasks were accomplished within one month of approval on the preliminary scope. The project was then implemented throughout the summer and substantively completed before school started on August 22, 2001.

Project Scope

- Replaced old, inefficient lights with high-efficiency lamp/ballast systems
- Increased light fixtures in under-lit areas
- Sixteen (16) new rooftop air conditioning/heating units
- Replacement of single-pane, steel-frame windows with double-pane, vinyl-frame windows
- Twelve (12) instantaneous-demand hot water heaters
- Replacement of an old, electric pizza oven with a new natural gas convection oven
- Radiant gas heat system in gymnasium
- An Internet-accessible HVAC control system
- Energy monitoring electric and gas meters
- Electric radiant heating panels
- Removal & demolition of hot water heaters, boiler, baseboard heating & other old & energy-wasting systems
- Replacement of old, leaky pneumatic control system with electronic controls
- Installation of occupancy sensors for lighting systems
- New expanded electric service for school
- Solar Photovoltaic traffic safety signal signs

ENERGY SAVINGS GUARANTEE

This project cost Stratton School District $400,000 that was financed by 1st National Bank of Stratton over a ten-year period. The school district is guaranteed by Ennovate to save $22,000 per year in gas, electricity and water costs, $3,600 in operational savings and $24,000 in capital cost avoidance for a total of $49,600 per year. The guaranteed savings identified in the ESPC will be used to pay back the $400,000 in capital and interest needed to make all of the improvements over a ten-year period. If for some reason, the savings does not materialize, as guaranteed, Ennovate will compensate the school district for the difference. In addition, Stratton Schools received a grant from the Colorado Department of Education to offset $245,460 of the $400,000 in capital required.

LOCAL CONTRACTORS UTILIZED

Ennovate focused on hiring local contractors from Stratton, Burlington, Limon, Elizabeth, Nederland, Denver and Ft. Collins. 75% of the subcontracts on this project were awarded to contractors within a 50-mile radius of Stratton, Colorado. All contracts were awarded to Colorado companies.

CLASSROOM INVOLVEMENT

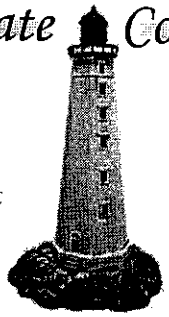
In addition to performing the work described in the ESPC, Ennovate has also taken an active role with Stratton School's classroom activity. Ennovate Corporation participates in classroom lectures on renewable energy and energy-related issues to Stratton High School students. In addition, Ennovate is funding an Internet Web development contest for Stratton High School students to make a web page for the Stratton School District. Furthermore, Ennovate Corporation has agreed to compensate the school district to conserve energy by paying an annual bonus to the school if they exceed energy savings guaranteed in the contract.

IMPROVED LEARNING ENVIRONMENT

Before the ESPC was implemented, Stratton Middle/High School was a stuffy, overheated and energy-inefficient facility. Now that the ESPC project is complete, Stratton

Project Summary

Energy Savings Performance Contract
Stratton School District R-4



....Energy Innovation

Middle/High School is a well-ventilated, comfortable and energy-efficient facility. With the ESPC funding mechanism encouraged by the State of Colorado, Stratton Schools used annually appropriated lease payments to pay for improvements, offset by energy savings.

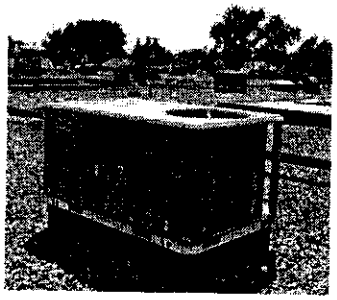
ENERGY INFORMATION NETWORK

A key unique feature with the Ennovate ESPC is that the school district can easily keep tabs on their energy savings progress without complicated, proprietary energy auditing programs. They simply go to the Ennovate web site and review their energy use vs what it would have been had the ESPC not been implemented. These web charts show electricity and natural gas savings by building; a display of comfort settings in all classrooms; and a summary of guaranteed energy savings status. There is no utility bill collection necessary as utilities are electronically submetered and automatically directed to the web site. This way Ennovate can quickly access guarantee shortcomings (if any) and the school district can monitor performance with objective metering equipment.

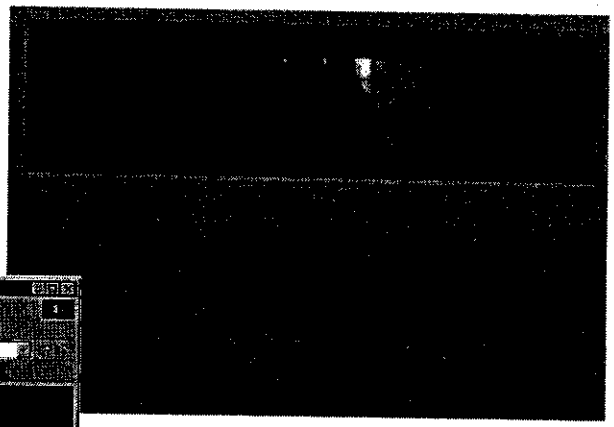
OUR WEB SITE HAS MORE DETAILS

For more information on the Stratton School ESPC, please click on the Ennovate Corporation web site www.energyexpertise.com and select "Stratton School District". There you can see pictures of the implemented improvements (before & after) and even see how Ennovate is doing on its energy guarantee by reviewing utility charts.

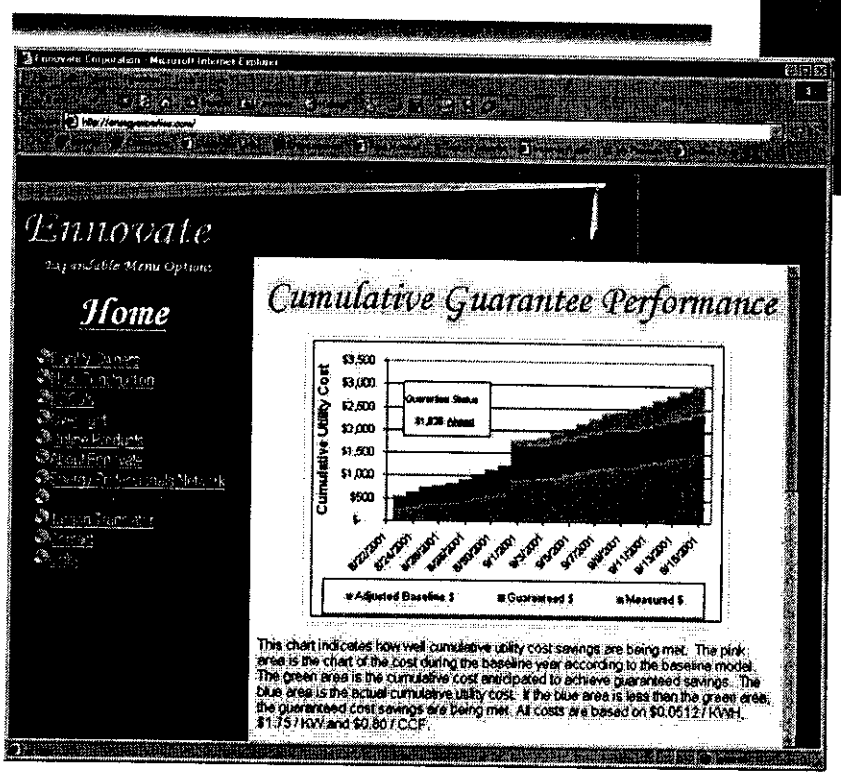
HVAC CONTROL



The replacement zoned rooftop air conditioning and heating units permit individual room scheduling, so that proper ventilation, heating, and air conditioning may now be controlled classroom by classroom. Energy savings are maintained by closely controlling the units to operate only when the various classroom zones are occupied. The Media Center and Administration areas are now served by variable volume controls that permit one unit to serve several diverse zone needs, and can vary their output to meet changing occupancy through the day.



Controls strategies, such as reset and night setback are handled within networked, digital thermostats that control each new heating and air conditioning zone. This information is continuously routed to a password-protected Internet server, permitting Ennovate Corporation to keep close tabs on the day to day system performance and be sure that the guaranteed savings obligations for the project are being met.



Ennovate Corporation

Jeff L. Schuster, President
Tel: (303) 471-0755
Schusterjl@EnergyExpertise.com

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LaCenter High School, Washington

LaCenter High School in Southwest Washington was experiencing chronic HVAC comfort and equipment control problems due to a failing Energy Management Control System. In addition, the lack of reliable electric service from the local utility was damaging their motor equipment. Using Energy Performance Contracting means, the High School was able to replace their existing control system, replace heating control valves, and add power monitoring and control capability. A commissioning of the entire HVAC system also uncovered and corrected several existing deficiencies.

Project details

Facility: LaCenter High School

Facility Type: High school

Project Savings:

Annual Electrical Savings:	364,500 KWh	$ 8,675
Annual Natural Gas Savings:	3,274 Therms	$1,860
Annual Operational Savings:		$11,000
Total Annual Avoided Cost:		**$21,535**

Project Benefits: The result was a dramatic improvement in comfort for the students and staff and a reduction in operational costs to the district for repair of damaged equipment.

Environmental Benefits:

- Reduction in CO2 of 183,984 pounds per year
- Reduction in SO2 of 1 pound per year
- Reduction in NOx of 157 pounds per year

Energy Services Company: Siemens Building Technologies, Inc., Bellevue, Washington

Initial Project Cost: $210,269

Funding Source(s): Washington State Treasurer Lease/Purchase Program $210,269

Loan Repayment: Insurance Settlement 29% Energy Conservation Savings 71%

Project Managers: Brett Blechschmidt, Fiscal Officer, ESD 112,

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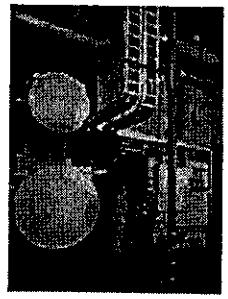
Louisiana State University, Louisiana



Project details

Location: Baton Rouge, Louisiana

Size/description: Multi-facility University Campus, largest Energy Savings Performance Contract completed in the U.S. to that date; 100 Buildings linked to a Central Chilled Water and Steam Plant

Project Cost: $18,650,000

Project Start/End dates: November 1989 – June 1994 (contract buyout by client

Client Contact: Mr. Joe Kelley, Executive Director 225.388.5603

Type/Term of Contract: 10 Year Guaranteed Savings Plan

Financing:

Type: Tax exempt certificates of participation taken down by the Stephens Co. of Little Rock, Arkansas and remarketed to the traditional investment community.
Terms: 10 Years (refinanced to LSU to 20 years).
Contact at Financial: David Blumhard, Vice President
Organization: Stephens Co. 800.643.9691

Sempra Energy Solutions' (formerly CES/Way) Role: Developer, General Contractor, Energy Auditing, Design Engineering, Financing, Project Managemen Commissioning

CMS Implemented:

- A 5,000-HP, gas fired turbine was installed to drive a 6,300-ton chiller and produce steam with a heat recovery boiler
- Over four (4.5) miles of underground piping along with 8,000-tons of coolin tower capacity were installed and 2.25 miles of fiber optic cable (for EMS)
- Twenty-two (22) new pumps and variable speed drives were needed to modify and control the flow of chilled water to the campus buildings
- A new, computerized energy control system was installed to optimize the use of the chiller plant
- Boiler controls were relocated from separate control rooms into the new plant

- CES/Way controlled 12,000-tons of chillers from the new central plant and distributed chilled water to the campus utilizing variable volume pumping loops, *without* the use of building booster pumps.

Annual Energy Savings:

Projected: $4,334,992
Achieved: $4,672,049

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Baylor University Medical Center

Project details

Location: Dallas, Texas

Size/description: Central Plant and Professional Office Buildings. 3.8 millior square feet, 1,200 hospital beds

Project Cost: $6,000,000

Project Start/End dates: September 1997 - September 2007

Client Contact: Mr. Charles Dorrell, 214.820.2173

Type/Term of Contract: 10 Year Guaranteed Savings

Financing:

Type: Tax Exempt Bond issued by the University
Organization: Not Applicable

Sempra Energy Solutions' (formerly CES/Way) Role: Auditing, Engineering/Design, Construction Management, Training, M&V

CMS Implemented:

- Lighting retrofit
- Thermal Storage – 15,000-ton/hr. Ice Storage System
- Variable speed drives
- Replace 2,000 ton centrifugal chiller
- Automation/control system expansion

Annual Energy Savings: $628,000

Projected: In commissioning
Achieved:

Caldwell, Idaho: Leading Idaho in Energy Efficiency

With just 29,000 residents, The **City of Caldwell**, ID, is a model for saving energy, preserving the environment and protecting the integrity of its citizens' tax dollars. Caldwell, located 27 miles from Boise in southwestern Treasure Valley, was the first municipality to join **Rebuild Idaho**.

After learning about Rebuild America from Rebuild Idaho's Sue Seifert and Ken Baker (who is now with the Idaho governor's office), Mayor **Garret Nancolas** formed a partnership with Rebuild Idaho and began a five-year plan to retrofit government buildings in the town. First steps included teaming up with **CMS Viron**, a Rebuild America Business Partner, to perform audits on all local government buildings and identify the best retrofit measures to take. Two years later, the City of Caldwell is nearing its goals. Every government building has been audited, and retrofits now underway will cost $120,000, yet save the town $30,000 annually.

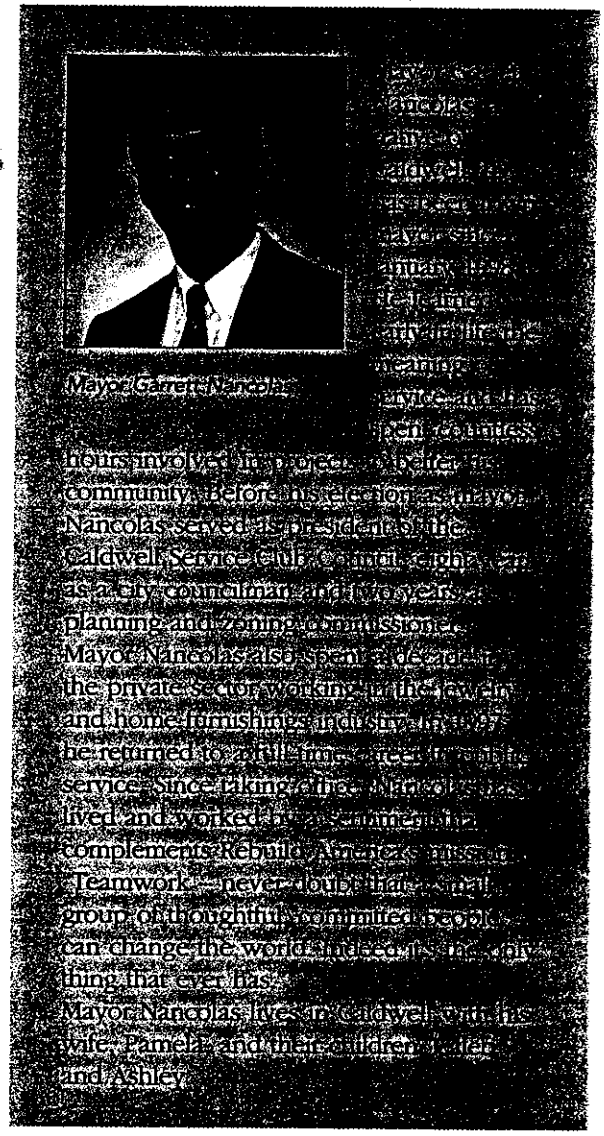
Nancolas is impressed with the project's steady progress, and he's working to share Caldwell's success with the wider Idaho community. Working with Seifert and Baker, Nancolas helped spread the Rebuild Idaho partnership to more of Treasure Valley, a scenic desert home to 45 percent of Idaho's residents. Treasure Valley leadership is working to extend the benefits of performance contracting to all local government buildings, as well as K-12 schools and colleges and universities.

"This is a great example of a small town really affecting a big town rather than the other way around," said Nancolas.

According to the mayor, prior to joining Rebuild America, Idaho had never explored performance contracting, and some state legislation even prohibited its practice. Caldwell and Treasure Valley leaders worked to change that legislation in Idaho and neighboring Washington state. Subsequently, Boise State University and the University of Washington are undergoing energy audits and plan to retrofit accordingly. Audits also are currently underway in many Idaho school districts. What's more, those participating in performance contracting upgrades will reinvest 2 percent of their total energy savings into the Treasure Valley partnership fund. The fund will be used for future upgrades in state government buildings.

"We are stewards of our environment and of residents' tax dollars," Nancolas said. "We want to take what we believe and spread the message."

For more information, contact the Mayor's office at 208-455-3011.



Mayor Garret Nancolas

Continued from page 4

Fuel Cells: 21st Century Energy

You're Ready to Buy

If you consider yourself an early adopter of technology, you can certainly buy a fuel cell today. A typical residence needs about a 7-kilowatt unit. Plan to spend about $11,000 for the fuel cell and another $2,000 in related cost. But, if you're anxious, wait. A better choice will be the first production units scheduled for 2003.

Not matter your interest now, when you build or purchase your next home, perform a major building remodel or plan a new building, plan for a fuel cell. Fuel cells are here today, and you will want one sooner than you think.

For more information on fuel cell technology, contact Chip Larson with Pacific Northwest National Laboratory at 509-372-4286 or Chip.Larson@pnl.gov.

Or contact the U.S. Department of Energy's Fuel Cell Power for a Cleaner Future at www.pnl.gov/fuelcells/index.htm.

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