CITY OF BEVERLY HILLS

PUBLIC WORKS SERVICES DEPARTMENT

MEMORANDUM

TO: PUBLIC WORKS COMMISSION

FROM: Daniel E. Cartagena, Senior Management Analyst

DATE: May 11, 2015

SUBJECT: CLIMATEC Update

ATTACHMENT: 1. City Council Staff Report – April 21, 2015

The attached report was presented to the City Council at its April 21, 2015 Study Session.

Staff will present an update during the May 11th Public Works Commission meeting.

STAFF REPORT

Meeting Date: April 21, 2015

To: Honorable Mayor & City Council

From: Chad Lynn, Assistant Director of Public Works Services
Donielle Kahikina, Deputy Director of Operational Support

Subject: Progress report on energy efficiency projects with Climatec Technologies Group

Attachments:
1. Scope of work Matrix
2. Municipal Case Studies

INTRODUCTION

In 2009 the City published its "City Sustainability Plan." The plan set forth goals of becoming sustainable and stated that it is both a necessity and an opportunity. The first of the Plan's Energy goals is to:

> "Develop and implement a comprehensive Energy Conservation Program for City operations that maximizes energy efficiency and the use of renewable energy sources in all City facilities, equipment and operations. When making capital decisions, utilize a lifecycle assessment, which incorporates initial purchase price and projected energy and other costs over each purchase's expected life. Use third party financing where appropriate."

In order to sustain the City's commitment to reducing costs and increasing efficiency in our facilities, staff has been investigating ways to further reduce facility electric expenditures, reduce water usage, and increase efficiency with the help of new technology. The City regularly engages in sustainable energy projects and infrastructure upgrades, including partial interior and exterior lighting retrofits, LED installations and photovoltaic and renewable solar energy generating systems for new construction and upgrades for City facilities. Even with these many projects, new technologies and aging building systems continue to provide opportunities for the City to engage in self-funding energy efficiency upgrades.

In September 2013, the City entered into a 'No Fee' agreement with Climatec Building Technologies Group to perform an Energy Efficiency Study in an effort to identify and implement energy and operational savings under a self-funding, guaranteed savings program. Since that time, Climatec has provided significant investment in the surveying and engineering work to develop and provide specific recommended projects which will meet the City's needs and achieve both improved efficiency and guaranteed savings in an amount equal to or greater than the cost of such projects. These services were

provided at no cost, and with no expectation of future compensation. In consideration for this work, the City agreed, in good faith, to not engage any other company during this assessment period, and to provide access to the City's energy, gas and water bills for City facilities.

Climatec has delivered a summary of projects which total approximately $2.9 million in one-time capital costs and a guaranteed savings to fund such projects with an estimated savings of $5.4 over the life of the new equipment.

The next step in the process is for Climatec to develop and deliver a detailed scope of work, engineering documents, and detailed project specifications. Prior to escalating Climatec's investment in this project, staff wishes to inform the City Council of the intent to bring forward a formal contract for consideration after the completion of the current budget process and start of the new Fiscal Year (FY) (2015/2016) based on these documents and including a formal guarantee of savings. Funding for the capital investment outlined by the Study will be included in FY 15/16 Capital Improvement Program budget for the Council's consideration.

DISCUSSION

Climatec has conducted detailed surveys of specific infrastructure within the City. After surveys were completed, Climatec engaged City staff from multiple departments to make specific recommendations for work and products to meet the City's need, ensure energy efficiency and deliver long-term savings.

The Scope of Work Matrix (Attachment 1) identifies Climatec's summary of building and facility system recommendations in the areas of Lighting, Building Automation Systems (BAS), Heating & Air-Conditioning, Battery Storage and Irrigation systems. These recommendations will provide the following benefits to the City:

- Remedy approx. $2.9M in city improvement needs
- Decrease operating expenses of approximately $300,000 in the first year and ongoing
- Save over $5.4M over the equipment life
- Reduce 3,000,000 lbs./yr. of the City's greenhouse gas emissions
- Broaden the City of Beverly Hills leadership in environmental stewardship

In addition to the benefits listed above, the following green environmental equivalents have been calculated on an annual basis:

- 38,071 trees planted
- 267 cars removed from the road
- 190 homes powered

To help the City achieve its savings and sustainability goals, Climatec has agreed to the following:

- Complete an on-site review of multi-technology energy efficiency opportunities/measures for all City facilities
- Develop a scope of work, engineering, analysis of options, and specifications with estimated savings and rebates for each measure
- Determine the estimated cost to perform each measure from the scope of work.

- Provide City with a scope of work, formal project completion pricing, and savings analysis of each project for approval to proceed with installation
- Complete and file the necessary pre-installation documentation with SCE to secure the project's rebate commitment
- Arrange with contractors for completion of installation of approved projects.
- Arrange for and manage SCE pre-installation inspection for authorization to proceed with projects
- Conduct installation planning meetings with appropriate City staff.
- Perform project installation and oversight
- Complete post-installation verification that all work was completed according to specifications and that all systems are operating properly
- Arrange for and manage SCE post-installation inspections
- Complete and file SCE post-installation documentation to secure rebates
- Provide, as requested, information regarding ongoing project savings and emissions reductions, to help substantiate "City Sustainability Plan" goals
- Provide a savings and performance guarantee that shall make the City whole if there is a savings shortfall

Upon production of the specific scope of work, engineering documents and detailed specifications, staff intends to bring forward an agreement for consideration in the 2015/2016 Fiscal Year pursuant to Section 4217.10 and 4217.12 of the California Government Code. These code sections provide the authority to enter into an agreement for the specified work, if the City finds that this is in the best interest of the City and that the anticipated costs of the work will be less than the anticipated cost to the City for utility costs absent these projects; simply stated, the projects are self-funded by producing savings that are greater than the cost of the project.

FISCAL IMPACT

At this time there is no cost to the City, and no expectation on the part of Climatec of future compensation. If the project is awarded at a future date, the estimated project cost of $2,998,161 will be entirely recovered by the savings and utility incentives created by the implementation of the recommended measures. Total project savings over the life of the new equipment is estimated to be $5,493,381.

Additionally, Climatec has agreed to provide a written financial guarantee that the savings will pay for 100% of the cost of the improvements or Climatec will pay the shortfall to the City.

RECOMMENDATION

This item is for informational purposes only. Unless otherwise directed by the City Council, staff will proceed with this project with Climatec, direct Climatec to create the formal documentation for this project, including the detailed scope of work, engineering and specification documents. Staff will return to the City Council at a future date for consideration of a formal agreement to implement the project.

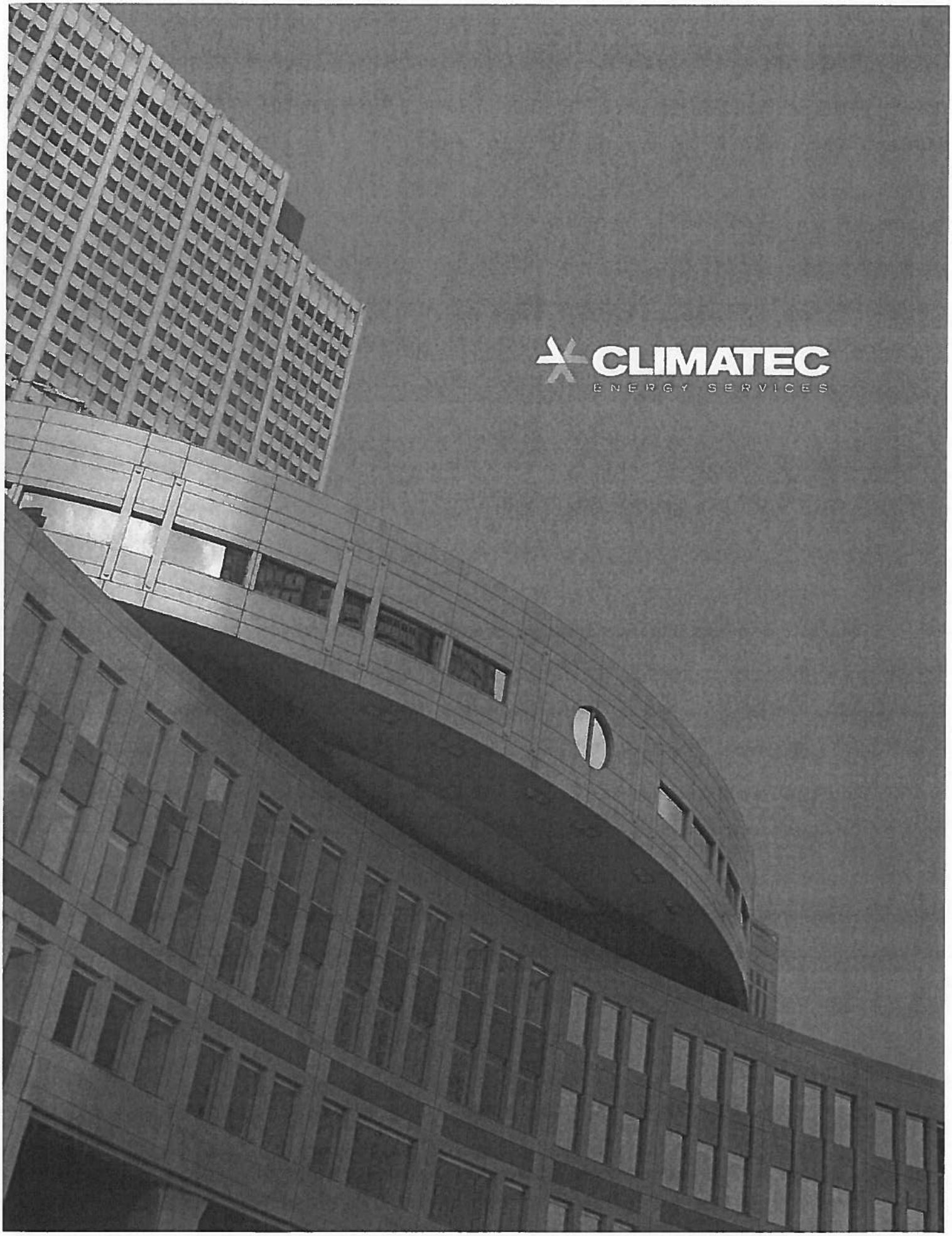
George Chavez
Approved By

Attachment 1

Scope of Work Matrix

	SITE LIGHTING				BAS		HVAC			ADDITIONAL ECMs			
	Interior Lighting Upgrades	Exterior LED Lighting Upgrades	Fixture Mounted Occupancy Sensors	LED Parking Structure Upgrades	Enhance Economizer Controls	Install/ Expand Honeywell BAS	Cooling Tower	New High-Efficiency HVAC Units	CHW Tank Drain & Evaluate	Battery Energy Storage	Carbon Monoxide Monitoring System	Weather Based Smart Irrigation Controls	Install Master Valve & Flow Meters
Fire Dept. Headquarters	✓	✓											
Fire Station #2	✓	✓	✓					1					
Foothill Office Building										✓			
La Cienega Community Center													
La Cienega Tennis Center								6					
Library/ I.T.										✓			
Police Dept.	✓	✓	✓		✓	✓	3		✓	✓			
Public Works Facility	✓	✓								✓			
Bedford Parking											✓		
Beverly Dr. North Parking											✓		
Camden Parking		✓	✓	✓									
Crescent North Parking		✓	✓	✓							✓		
Crescent South Parking		✓	✓	✓							✓		
Montage / Gardens Parking		✓	✓	✓									
Santa Monica 5's Parking		✓	✓	✓									
Third St. Parking											✓		
Various Parks*		✓										✓	✓

Attachment 2


CLIMATEC
ENERGY SERVICES

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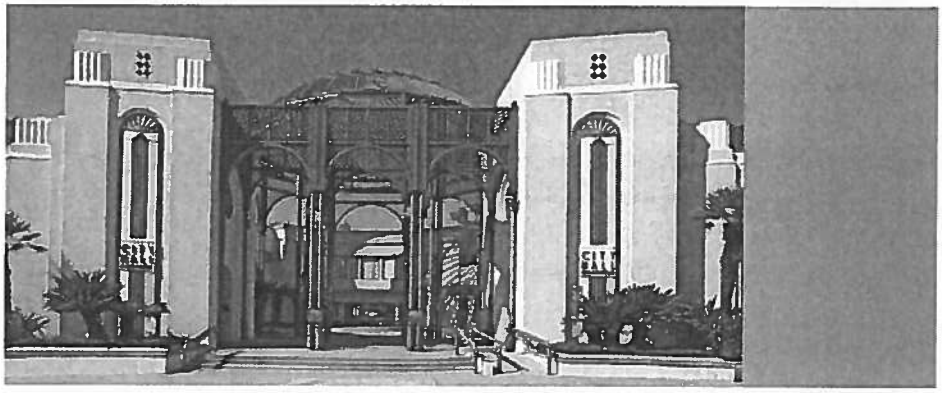
PROJECT REFERENCES

April 2, 2015



THE CITY OF ESCONDIDO

BACKGROUND

Serving 143,000 residents and covering 36 square miles, The City of Escondido needed a budget neutral solution to contain energy costs and reduce its carbon footprint. Two Escondido community centers had antiquated HVAC units and severe temperature control issues with thermostats running 24 hours per day. The roof at East Valley Community Center needed major repairs as well. Interior and exterior lighting fixtures at four City facilities were outdated and substantially contributing to sky high utility bills. The Washington Park Recreation Center & Pool had an inefficient boiler heating system that was depleting natural resources.

SOLUTION

City of Escondido chose Climatec to design and implement a turnkey energy management solution that could be funded through guaranteed energy savings. To reduce natural gas usage and incorporate renewable energy, Climatec designed a solar thermal heating system for the Washington Park Pool. Interior and exterior lighting fixtures were retrofitted to the latest generation high efficiency standards, and occupancy sensors were installed to achieve energy savings during unoccupied hours. The Building Automation System (BAS) was expanded to the Senior and East Valley Community Centers along with new high efficiency HVAC units. The roof of East Valley Community Center was re-constructed further to increase the site's overall efficiency.

RESULTS

Climatec helped the City secure 0% on-bill financing from SDG&E and numerous prescriptive and custom utility rebates. Climatec's energy efficiency framework helped the City change energy consuming behavior across all levels of staff and facility personnel. To date, Climatec has achieved 285% of the projected energy savings. City of Escondido has received statewide recognition for environmental stewardship with many other cities following their lead. The environmental impact of this energy savings project includes a 1.1 million pound reduction in greenhouse gases and 58,000 gallon reduction in gasoline.

AT A GLANCE

Project Type
Energy Performance Contract (Guaranteed Savings)

Location
Escondido, California

Total Project
$1.1 million

Projected Program Savings
$1.2 million

Annual Environmental Benefits
- 1.1 million lb. reduction in greenhouse gases
- 58k gallons of gasoline saved
- 15k trees preserved from deforestation
- 107 cars removed from the road
- 76 Escondido homes powered

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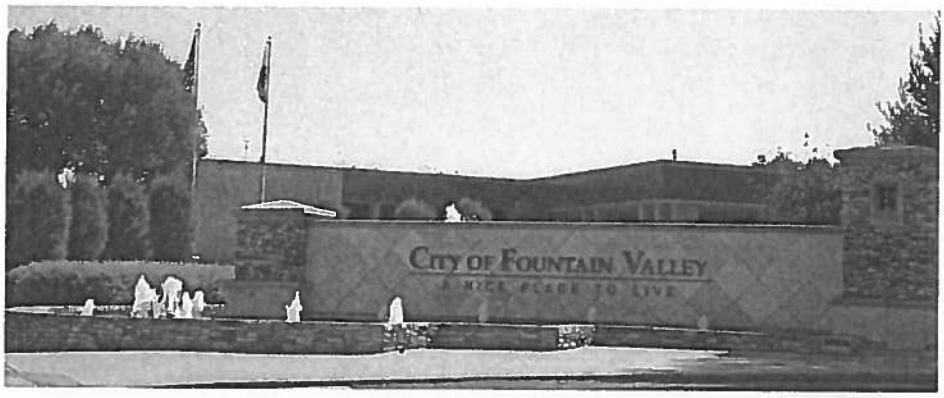

CITY OF FOUNTAIN VALLEY

BACKGROUND

Located in Orange County, the City of Fountain Valley covers nine square miles and is home to over 55,000 residents. The City requested a design/build energy upgrade project to help manage future budgets, improve facility infrastructure, and reduce their carbon footprint. Seven city sites were selected for this project and include: City Hall, Police Department, Recreation Center, Community Center, Field Services, and two fire stations. These sites had HVAC units past their useful life, antiquated lighting, and severe control issues. The City was forced to turn off its landmark fountain to save on sky-high utility bills. Additionally, lighting at various traffic intersections and community parks did not meet today's high efficiency standards.

SOLUTION

Through a competitive RFP process, Climatec was selected to develop a comprehensive energy solution. High efficiency lighting systems were installed at each location with motion sensors to maximize energy savings during unoccupied times. Building Automation Systems and HVAC upgrades were implemented at City Hall, Police Department, Field Services, and Recreation Center, which allowed facilities personnel to optimize runtimes and scheduling. Additionally, a 30kW solar photovoltaic generation system was designed and installed by Climatec's renewable energy team to offset the demand of the water fountain at City Hall and resume its operations.

RESULTS

Climatec's budget neutral solution positioned the City to set an example for environmental stewardship in California Municipal Market. The City drastically reduced CO_2 emissions, cut energy and operational costs by $230k annually, and is saving 90,000 gallons of gasoline each year. City employees are relieved to finally experience the comfort of maintained room temperatures and improved indoor air quality at major buildings like City Hall and Police Headquarters. Thanks to Climatec's renewable energy solution, the City is now able to run the fountain during daylight hours.

AT A GLANCE

Project Type
Energy Performance Contract (Guaranteed Savings)

Location
Fountain Valley, California

Total Project
$2.5 million

Projected Program Savings
$4.3 million

Annual Environmental Benefits
- 1.5 million lb. reduction in greenhouse gases
- 90k gallons of gasoline saved
- 25k trees preserved from deforestation
- 160 cars removed from the road
- 115 Fountain Valley homes powered

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CASE STUDY | ENERGY

SAN JOAQUIN COUNTY

BACKGROUND

San Joaquin County spans over 1.4 million square miles of the Central Valley of California and is home to 685,000 residents. The County's Administration Building and Downtown Parking Garage were plagued with controls and lighting issues, which in turn led to higher than normal energy costs. Both sites contained outdated, standard efficiency lighting systems that were costly to operate and maintain. Despite recent mechanical renovations, the Administration Building was controlled by an antiquated pneumatic system that could not maintain proper air circulation or adequate comfort for the tenants.

SOLUTION

Climatec was selected to perform this energy efficiency project, reduce maintenance costs, and generate positive cash flow for the County. The old control system was removed and replaced with a new Alerton Building Automation System (BAS) that substantially improves control and monitoring capabilities for the tenants. New VFDs, CO_2 sensors, and outside air economizers were also installed and integrated with the BAS to further improve comfort and building efficiency. New interior lighting at both sites and exterior lighting upgrades for the parking garage include the latest technology for improved lighting quality and longer life expectancy.

RESULTS

This performance contract is managed by a dedicated project manager who completed facility upgrades on time and on budget. Over the lifecycle of the equipment, this project will allow the county to redirect almost $1.1 million for important municipal needs and future planning through Climatec's budget neutral solution. To date, Climatec has exceeded savings projections and helped the County to drastically reduce its carbon footprint. The County's energy savings translate to an annual reduction of over 2.3 million pounds of greenhouse gases and 107,000 gallons of gasoline.

AT A GLANCE

Project Type
Energy Performance Contract (Guaranteed Savings)

Location
San Joaquin, California

Total Project
$1.2 million

Projected Program Savings
$1.1 million

Annual Environmental Benefits
- 2.3 million lb. reduction in greenhouse gases
- 107k gallons of gasoline saved
- 28k trees preserved from deforestation
- 197 cars removed from the road
- 141 San Joaquin homes powered

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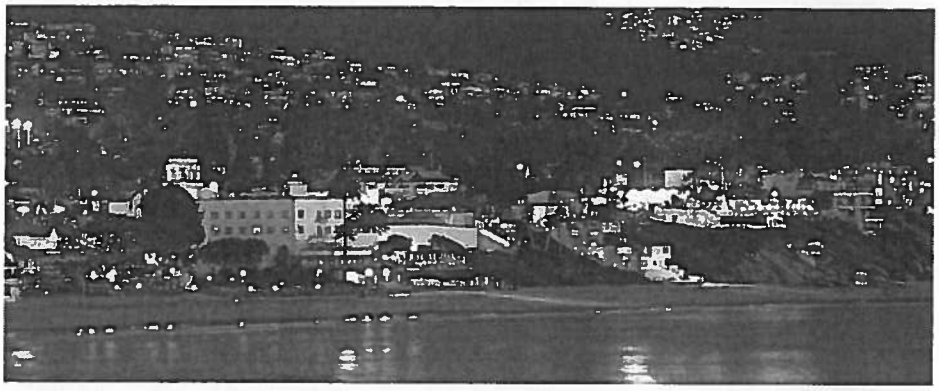

CITY OF LAGUNA BEACH

BACKGROUND

The City of Laguna Beach spans over nine square miles and is home to 23,000 residents. With rising utility bills and M&O budget constraints, the City needed capital improvements at major City-owned buildings to help contain energy costs. City Hall was in need of a roof replacement, major HVAC upgrades, and interior & exterior lighting upgrades. Lighting upgrades were also needed at two fire stations, two parking garages, the community center, and corporate yard.

SOLUTION

The City issued a competitive RFP and awarded Climatec the energy efficiency upgrade contract. Climatec performed a robust preliminary analysis and a comprehensive energy engineering study to identify and prioritize building needs. The latest generation high efficiency interior and exterior lighting fixtures were installed at nine locations. Climatec also incorporated motion sensors to maximize lighting energy savings during unoccupied times of the day. The 19 antiquated and inefficient HVAC systems at City Hall were replaced with high efficiency heat pumps to not only drastically reduce energy consumption, but also improve occupant comfort. Climatec offered extended warranties for the replaced HVAC equipment and onsite operator training for the City's facility team.

RESULTS

Climatec helped the City secure a Department of Energy ARRA grant that helped minimize capital expenditures for the project. The energy efficiency upgrades were installed on-time and under budget thanks to Climatec's dedicated project manager. Climatec's energy solution helped the City create a more sustainable community for Laguna Beach residents and also set an example for environmental stewardship. The City drastically reduced CO_2 emissions and reliance on natural gas resources while freeing up M&O dollars for other important municipal needs.

AT A GLANCE

Project Type
Energy Efficiency Upgrade

Location
Laguna Beach, California

Total Project
$470,000

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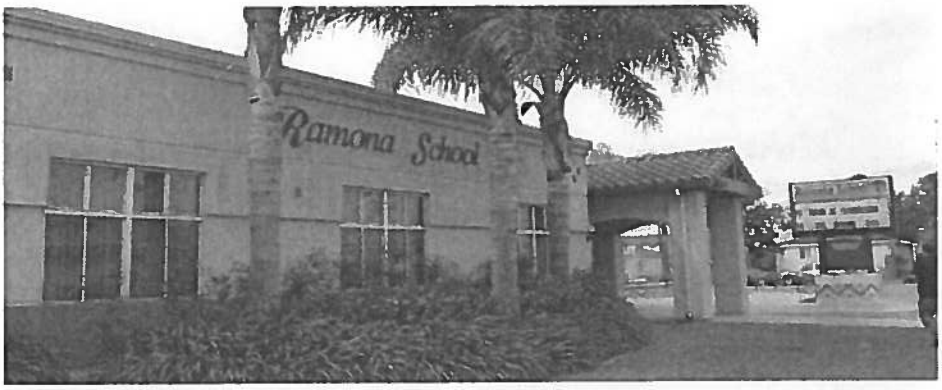

OXNARD SCHOOL DISTRICT

BACKGROUND

Like many similar Districts in the region, Oxnard School District was caught between rising energy costs and a diminishing budget. A collection of mismatched control systems, antiquated HVAC equipment, and inefficient lighting systems only added to the budgetary pressures. The District desired to reduce their $1.5M annual utility expenditure, upgrade aging equipment, and demonstrate environmental stewardship.

SOLUTION

Climatec partnered with Oxnard School District to customize a comprehensive energy savings project that alleviated unnecessary energy consumption and freed up cash flow for important educational needs. The energy project included an Alerton building automation system (BAS) at all 23 sites, high efficiency chiller retrofits, new air handling units, variable frequency drives, substantial lighting upgrades at 19 sites, and multiple other energy conservation measures.

RESULTS

Through an energy performance contract with Climatec, the District was able to remedy $4.8 million in unfunded building upgrades while reducing energy consumption by 30%. In addition to drastically reducing CO_2 emissions, the District is savings enough energy to power 215 Oxnard households for the next 15 years and remove 300 cars from California freeways every year.

In addition to the environmental benefits, the district-wide BAS greatly reduced a growing maintenance burden by allowing full monitoring and control of the District's HVAC through a web-based platform. Paired with a comprehensive energy management plan, Oxnard School District is now able to allocate existing utility funds to hire more teachers and improve the learning environment.

AT A GLANCE

Project Type
Energy Performance Contract (Guaranteed Savings)

Location
Oxnard, California

Total Project
$4.8 million

Projected Program Savings
$7.2 million

Annual Environmental Benefits
- 3.3 million lb. reduction in greenhouse gases
- 165k gallons of gasoline saved
- 45k trees preserved from deforestation
- 300 cars removed from the road
- 215 homes powered

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Project Dates
Oct. 2013-Present

Contact
Grant Eklund
760.397.4018

Number of Sites
13 Buildings & 7 Parks

Project Value
$860,000

Total Program Savings
$1.6 Million

Procurement
California Code-Section 4217

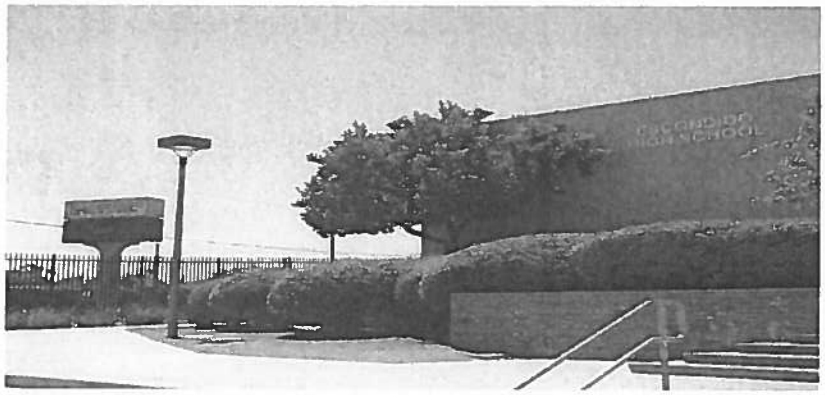
Funding Sources
Municipal Lease

City of Indio

PROJECT OVERVIEW

- Install/expand new Building Automation System for 6 sites
- Interior and exterior lighting upgrades at 10 locations
- Motion sensor control of lighting at 3 sites
- Comprehensive HVAC upgrades/replacements at 2 locations
- Irrigation controls upgrade at 7 city parks

Escondido Union High School District



PROJECT OVERVIEW

- Retro-commission existing Building Automation System (BAS)
- Install key locks at 5 sites
- Comprehensive HVAC upgrades/replacements at 3 locations
- Motion sensor control of lighting at 3 sites
- Occupancy based control of HVAC systems at 3 sites
- Interior lighting upgrades at 5 sites
- Exterior lighting upgrades a 4 sites

Project Dates
April 2013 - Present

Contact
Mike Simonson
760.291.3210

Number of Sites
5

Project Value
$2.9 Million (2 Phases)

Total Program Savings
$4 Million

Procurement
California Code-Section 4217, RFP

Funding Sources
On-Bill Financing, Prop 39

Escondido Union High School District

District Service Center

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H. Steven Boyle, Superintendent

BOARD OF EDUCATION

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OCTOBER 6, 2014

TO WHOM IT MAY CONCERN,

Climatec has been an exceptional partner in the District's mission to improve sustainable practices and achieve greater energy efficiency. In 2012, the District teamed up with Climatec to take a holistic look at our energy infrastructure and explore all possible funding vehicles for improvements. Through the use of On-Bill utility financing and Proposition 39 funding we were able to fund upgrades that will achieve over four million dollars in net saving.

Since 2012, the District has undergone retro-commissioning of our existing energy management system, comprehensive HVAC upgrades with new occupancy based control, and interior/exterior lighting upgrades throughout the district.

After two phases of working with Climatec and the entire Energy Services team, I personally recommend Climatec for any of your upcoming energy projects ranging from small to large.

Sincerely,

Michael Simonson
Assistant Superintendent, Business Services
msimonson@euhsd.k12.ca.us
Phone: 760-291-3210

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