

# The Silicon Valley Wire

The latest news from the electrical industry in Silicon Valley

2nd Quarter 2019

## IBEW Local 332 Wins Awards On The Way To Making Its San Jose Headquarters A Zero Net Energy Building

Pacific Ridge Electric installed a new photovoltaic system on the roof of IBEW Local 332 headquarters, where some panels are designed and mounted to spell out the name IBEW, which can be clearly seen when flying over the building.

San Jose is home to one of the only zero net energy (ZNE) union halls in California, the newly retrofitted headquarters of the International Brotherhood of Electrical Workers (IBEW) Local 332 at 2125 Canoas Garden Ave.



Pacific Ridge Electric installed nine inverters which convert energy into electricity for the building.

IBEW Local 332 recently received an entirely new energy system makeover, which replaces all the energy its uses from the grid with energy generated onsite.

Pacific Ridge Electric and Paradigm Power and Planning, worked as a "green" team with IBEW Local 332's management to retrofit the headquarters. The zero net energy makeover included several steps, such as replacing the existing solar panels on the building's rooftop, updating the existing sunshade system, and adding a new lighting control system,

LED lighting, battery storage, expansion of PV charging stations, and more.

The recently installed energy improvements generate 202.3 kW (202,300 watts) in clean and efficient heating, cooling, and lighting and save about \$140,000 dollars a year in electricity usage by recycling energy back to the grid.

Ken Spears, owner of Pacific Ridge Electric, who installed the improvements and worked as the prime contractor, said he began the \$3.2 million project in July 2017, and completed it in the summer of 2018.

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Pacific Ridge Electric added 600 new solar panels to the IBEW 332 headquarters.

Photo By SCP Digital

# IBEW Local 332 Wins Awards On The Way To Making Its San Jose Headquarters A Zero Net Energy Building

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"We removed and replaced all the old solar panels on the roof, added 600 new solar panels, and made the photovoltaic system significantly larger and more powerful," Spears said. The new solar system has a 25-year warranty.

"Downstairs in the headquarters we retrofitted new LED lighting, and converted the water heater to electric so we could utilize the energy of the solar panels to heat the water in the building," he said.

Chris Smith, President of Paradigm Power and Planning, the team's technical consultant, helped Spears plan and implement the specifics of the project. Chris, an alternative energy engineer, has degrees in energy storage design and photovoltaic design and

worked with Ken on the conceptual design, schematic design, and cost overview, as well as other elements. Dan Rodriguez, the business manager for IBEW Local 332, coordinated the project from the union side

"For a full net zero energy building, you have to look at the lighting control system, the building management system, Title 24, HVAC, etc., said Smith. "It gets very complicated, very quickly."

Smith also brought in an expanded ECAP Program (Energy Conservation and Performance Platform) to the project. ECAP was developed by the National Electrical Contractors Association to offer financing, insurance, warranties and other project management elements to NECA contractors and their clients. Smith

and his company are a premier ECAP resource partner, and work with NECA contractors to teach the ECAP model.

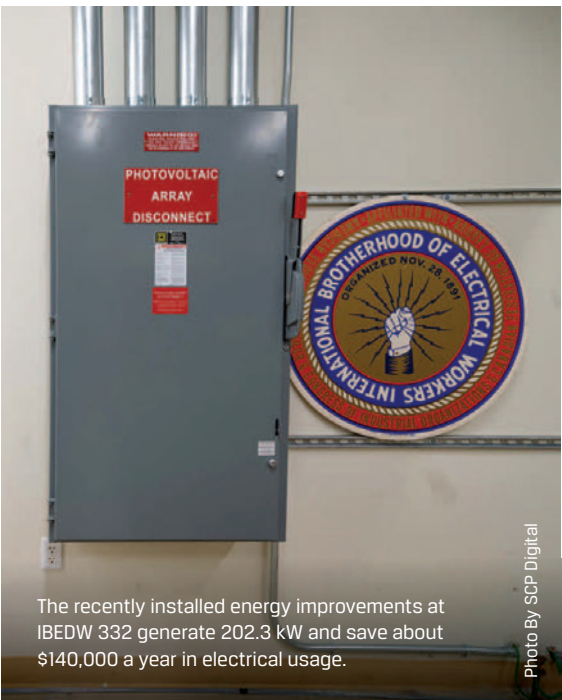
The ECAP program provided the economic model, as well as models for the conceptual design and professional design partnering. It also assisted with project budgeting, procurement and project management. It included project bonding and a \$3.2 financial equipment lease.

Local 332's new energy upgrades for its headquarters have gained national attention from several organizations, including awards from *Solar Builder* magazine (Best Design of 2018) and the National Electrical Contractors Association. (2018 Outstanding Achievement Design Award).



Pacific Ridge Electric mounted the new solar panels to the roof using an IronRidge, Inc. rail system, comprised of a series of mounts and brackets.

Photo By SCP Digital



The recently installed energy improvements at IBEDW 332 generate 202.3 kW and save about \$140,000 a year in electrical usage.

Photo By SCP Digital



Pacific Ridge Electric installed a building management system, which included AMX touch screens.

Photo By SCP Digital





Pacific Ridge Electric added six photovoltaic vehicle charging stations, joining the two that were already on site.

Photo By SCP Digital

IBEW Local 332 has long been a leader in the use of energy-saving technologies and has historically had a commitment to alternative energy. IBEW 332's management first installed solar panels on the Local's roof in 2003, making the facility San Jose's first commercial solar-powered building. These panels generated 55 kilowatts of power, which was enough to provide over 70% of the building's electrical needs

At the time, Local 332 was also the largest commercially solar powered installation west of the Mississippi.

During the recent retrofit, Pacific Ridge Electric, working with electricians from IBEW Local 332, removed all the old solar panels, and put new more efficient Seraphim® Solar USA panels (manufactured in America) in their place.

The new panels are mounted to the roof on an IronRidge, Inc. rail system, comprised of a series of mounts and

brackets. In addition to replacing the old panels, 600 additional panels were added. Pacific Ridge also updated the existing sunshade system, replacing the old solar panels and installing 72 new solar panels, as well as modernizing its mounting support system. The sunshade system keeps the building cool, and makes energy that goes into a power inverter for conversion into electricity to the building. There are nine power inverters that convert energy throughout the project.

One of the most interesting aspects of the photovoltaic system on the roof is its design. Some of the panels are designed and mounted to spell out the name IBEW, which can be clearly seen when flying over the building from the air. Future plans are to place LED lighting around the perimeters of the IBEW solar panels, so that the roof can be clearly seen at night as a plane flies over, and the acronym IBEW stands out in the darkness.

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### PACIFIC RIDGE ELECTRIC TEAM LIST ZNE CONVERSION, IBEW LOCAL 332 HEADQUARTERS

**CLIENT:**  
International Brotherhood of Electrical Workers (IBEW) Local 332; San Jose, CA  
Dan Rodriguez, Business Manager, IBEW Local 332

**PRIME CONTRACTOR:**  
Pacific Ridge Electric; Campbell, CA  
Ken Spears, Owner and Project Manager

**TECHNICAL CONSULTANT:**  
Paradigm Power and Planning, San Francisco  
Chris Smith, President

**ELECTRICIANS:**  
10 Electricians from the International Brotherhood of Electrical Workers (IBEW) Local 332; San Jose, CA

**SOLAR PANELS:**  
Seraphim Solar USA; Jackson, Miss.

**PHOTOVOLTAIC MOUNTING SYSTEM:**  
IronRidge, Inc.; Hayward, CA



Pacific Ridge Electric installed a Lutron lighting control system, and replaced a majority of lighting fixtures in the building with LED lights.

Photo By SCP Digital



PROJECT TEAM FROM LEFT TO RIGHT: Chris Smith, President, Paradigm Power & Planning; Ken Spears, Owner and Project Manager, Pacific Ridge Electric

Photo By SCP Digital





# MDE Electric, California's Leading Multi-Family Electrical Contractor, Wires The Dean And The Revela Apartments In Mountain View

The multi-family housing market continues its rapid growth in Silicon Valley and MDE Electric is growing along with it.

Over the past two decades, MDE Electric has wired over 50,000 units in the Bay Area, making it California's leading multi-family electrical contractor.

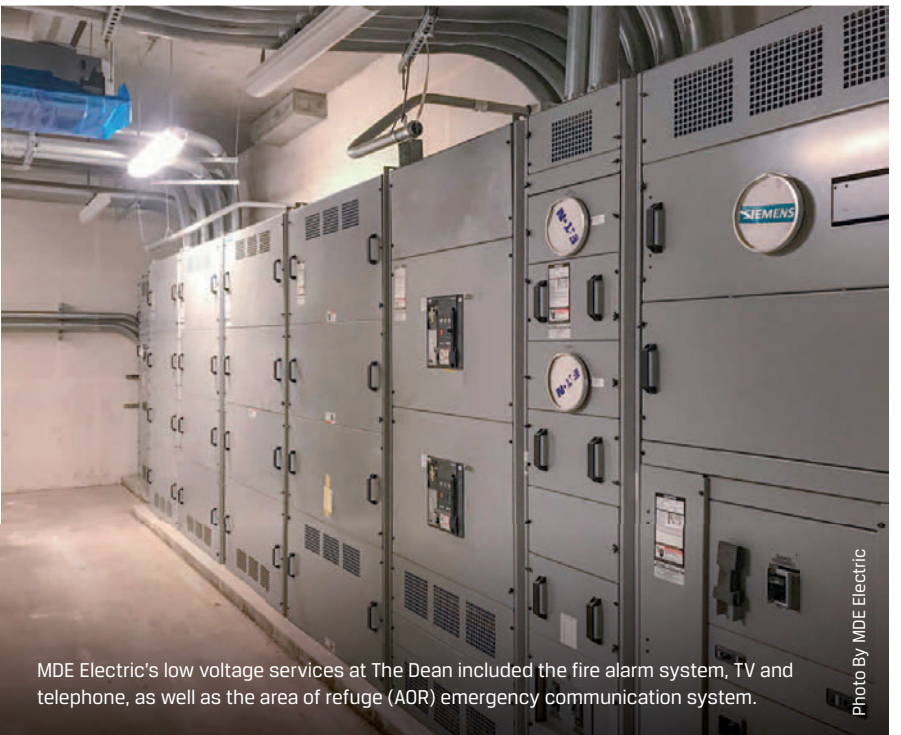
This year, MDE is in the process of wiring 5,000 apartment units across 20 projects in Silicon Valley.

Located steps away from the San

Antonio Caltrain Station in Mountain View, The Dean is one of these projects. Developed by Prometheus Real Estate Group and being built by Deacon Construction, this project consists of 583 one, two, and three-bedroom units.

Designed by BDE Architecture, in collaboration with Studio T-Square, the project consists of a podium structure

over two levels of underground garage. On the podium there are four buildings ranging from five to seven stories. The podium will feature landscaped courtyards and a paseo, ultimately connecting to a new city park. Amenities include several pools, a fitness room, clubhouse, roof deck, business center, onsite dog park and outdoor kitchen.







The design-build fire alarm system at The Dean was sectioned off into three different buildings constructed over the garage.

Photo By SCP Digital

At The Dean, MDE has been tasked with all electrical infrastructure and low voltage wiring. For the infrastructure, power comes in from the street to multiple electrical rooms. From the garage levels MDE fed the power into the individual units. The challenge MDE faced was distributing the power through the seven-acre garage and up to the four separate buildings. MDE accomplished this by running metal clad cable on basket trays throughout the garage.

On the low voltage side, MDE is providing a complete fire alarm, emergency two-way communication, television and phone systems. The design-build Farenhyt™ fire alarm

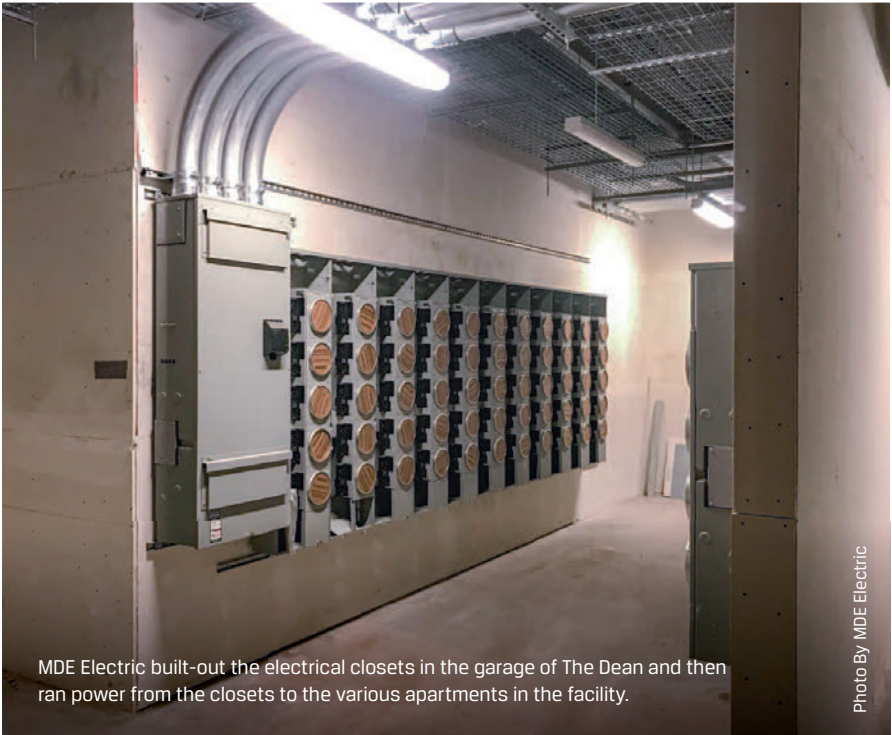
system, manufactured by Honeywell, was sectioned off into four different buildings constructed over the garage, and then wired by MDE into each building. Also installed, is a design-build emergency two-way communication system. This system, manufactured by Cornell Communications, is located at the elevator lobbies. During emergencies a tenant can push the call station button to alert first responders.

The television and phone wiring consist of conduit entering the building feeding the minimum point of entry (MPOE), and then branching off to individual IDF rooms. Risers in the IDF rooms extend upward to top

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THE DEAN APARTMENT COMMUNITY  
PROJECT TEAM:

- DEVELOPER:**  
Prometheus Real Estate Group,  
Foster City, CA
- GENERAL CONTRACTOR:**  
Deacon Construction, Sacramento, CA
- ARCHITECT:**  
BDE Architecture, San Francisco, CA;  
in collaboration with Studio T Square,  
Oakland, CA
- ELECTRICAL CONTRACTOR:**  
MDE Electric, Sunnyvale, CA  
Omar Omeragic, General Manager  
Ricardo Vargas, Superintendent  
Christopher Rafter Jr., Project Manager  
Gilbert Cortez, Foreman
- LOW VOLTAGE CONTRACTOR:**  
MDE Electric, Sunnyvale, CA  
(Fire Alarm System; Area Of Refuge  
System (AOR); Telephone and TV  
installation)
- ELECTRICIANS + TECHNICIANS:**  
50 electricians and technicians from the  
International Brotherhood of Electrical  
Workers (IBEW) Local 332, San Jose



MDE Electric built-out the electrical closets in the garage of The Dean and then ran power from the closets to the various apartments in the facility.

Photo By MDE Electric



MDE Electric installed expansion switches throughout The Dean to overcome the distance restrictions with the low voltage wiring.

Photo By MDE Electric





MDE Electric is wiring The Revela, which is being constructed as a podium structure, with two levels of underground garage, and two four-story buildings built over the parking garage.

Photo By SCP Digital

# MDE Electric, California's Leading Multi-Family Electrical Contractor, Wires The Dean And The Revela Apartments In Mountain View

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floors. From the IDF rooms, individual unit media panels are fed with micro ducts containing a fiber optic cable.

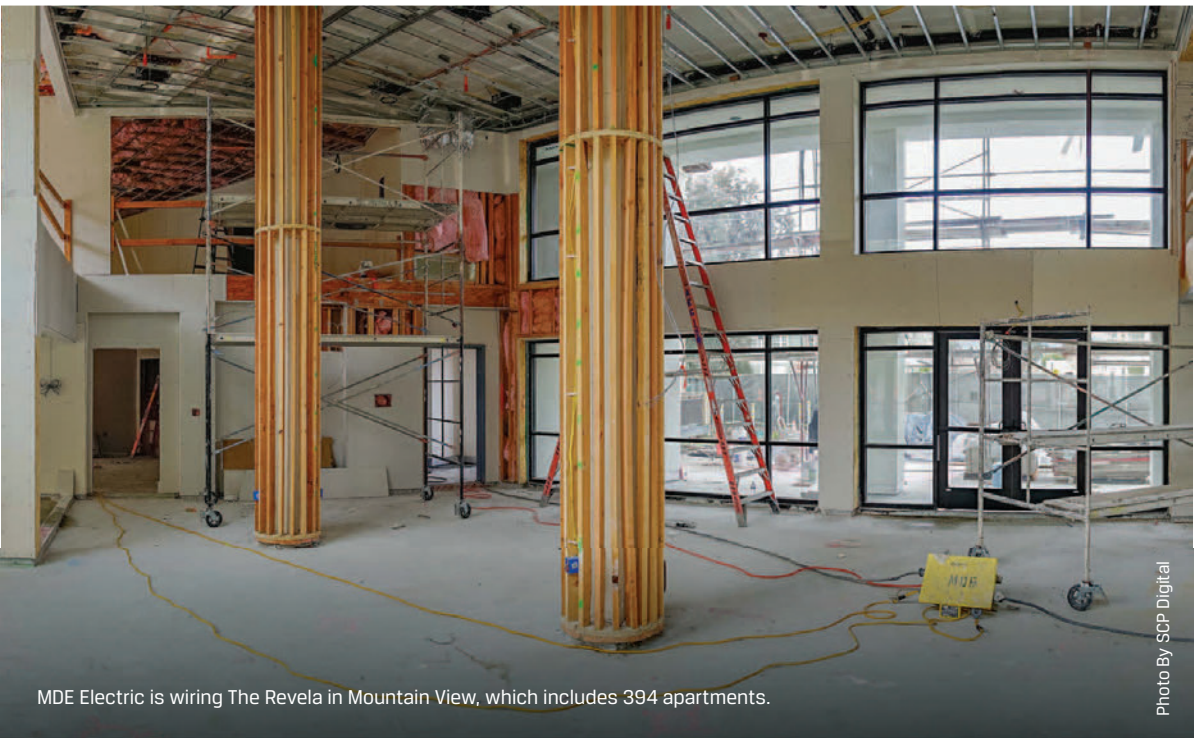
One of the challenges that MDE faced running the low voltage wiring was the distance required to run wires for the emergency two-way communication system. In order not exceed 300 feet, MDE installed expansion switches throughout the building.

Some 50 electricians and technicians from the International Brotherhood

of Electrical Workers (IBEW) Local 332 in San Jose are working on The Dean with Gilbert Cortez as the foreman. (For other project team members, see project team box).

MDE is also wiring The Revela at 500 Ferguson in Mountain View. Situated by the Whisman Park Light Rail Station, The Revela has 394 apartments plus 3,000 feet of commercial space. It is being built by Palisades Builders for the developer EFL Development Company, L.P.

The Revela is being constructed as a podium structure, with two levels of underground garage, and two four-story buildings built over the parking garage. The apartments have studio units, as well as one, two, and three-bedroom units. The Revela is split into two phases with each phase roughly encompassing 200 units, along with commercial space. Phase 1 will be complete by the end of 2019 and Phase 2 will be finished in 2020. The parking garage has 594 parking spaces



MDE Electric is wiring The Revela in Mountain View, which includes 394 apartments.

Photo By SCP Digital



MDE Electric is wiring the fire alarm system, two-way communications (AOR), and access control at The Revela.

Photo By SCP Digital





MDE wired The Revela's low voltage wiring, including running fiber through the micro ducts.

Photo By SCP Digital



MDE Electric is wiring the television, CCTV, and EERC at The Revela.

Photo By SCP Digital



The Revela is being wired by MDE Electric in two phases, each encompassing about 200 units, along with commercial space.

Photo By SCP Digital



MDE Electric is wiring the electrical infrastructure at The Revela.

Photo By SCP Digital

and a paseo between buildings.

MDE Electric is wiring the electrical infrastructure as well as all the low voltage systems. This includes the fire alarm; two-way communications (AOR); CCTV; access control; ERRC; television and phone systems. Forty technicians from the IBEW Local 332 are working on the project. Trancito Estrada is MDE's Foreman for this project (For other project team members, see The Revela project team box)

The Honeywell Farenhyt™ fire alarm system was redesigned to accommodate the phasing of the construction, which separated the structure into two buildings.

The access control system, which recognizes, authenticates and authorizes entry, is made by KeyScan, and controlled through a network. This system features integrated unit wireless doors. Only one key fob is required to open both common doors as well as a tenant's unit door. This type of integration has become popular for apartment complexes, and avoids rekeying units when a tenant moves out.

For more information about MDE Electric and its services, contact Jonathan Goldman, Director of Business Development ([jgoldman@mde-electric.com](mailto:jgoldman@mde-electric.com)) or call (408) 616-1402.

#### THE REVELA APARTMENT COMMUNITY PROJECT TEAM:

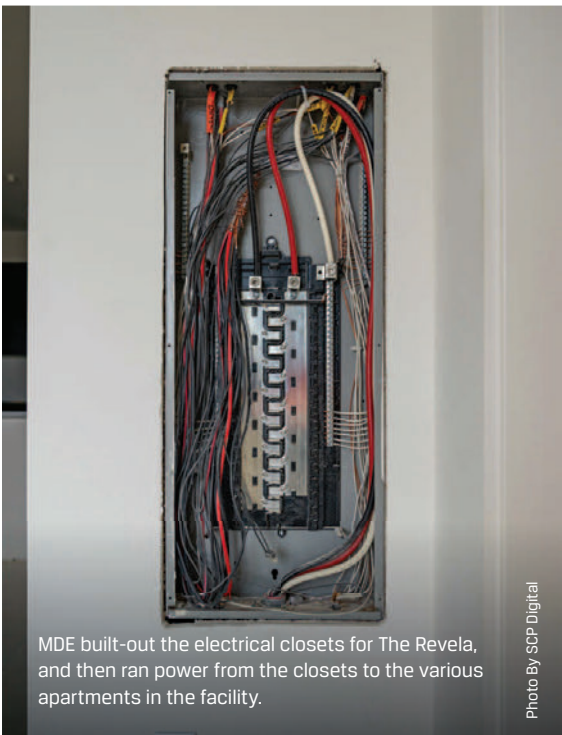
**DEVELOPER:**  
EFL Development Company, L.P., Mountain View, CA

**GENERAL CONTRACTOR:**  
Palisades Builders, Campbell, CA

**ELECTRICAL CONTRACTOR:**  
MDE Electric, Sunnyvale, CA  
Omar Omeragic, General Manager  
Ricardo Vargas, Superintendent  
Christopher Rafter Jr., Project Manager  
Trancito Estrada, Foreman

**LOW VOLTAGE CONTRACTOR:**  
MDE Electric, Sunnyvale, CA  
(Fire Alarm System; Area Of Refuge System (AOR); Telephone and TV installation; CCTV; Access Control; Emergency Responder Radio Coverage System (ERRC)

**ELECTRICIANS + TECHNICIANS:**  
40 electricians and technicians from the International Brotherhood of Electrical Workers (IBEW) Local 332, San Jose



MDE built-out the electrical closets for The Revela, and then ran power from the closets to the various apartments in the facility.

Photo By SCP Digital



The Revela is being wired by electricians from the International Brotherhood of Electrical Workers (IBEW) Local 332, San Jose.

Photo By SCP Digital





Pacific Ridge Electric upgraded the old sunshade system with 72 new solar panels.

Photo By SCP Digital

# IBEW Local 332 Wins Awards On The Way To Making Its San Jose Headquarters A Zero Net Energy Building

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In the building itself, Spears and Smith converted a 150-gallon water heater to electric, to utilize solar energy to heat the building's water. They also installed a Lutron lighting control system, and replaced a majority of lighting fixtures in the building with LED lights. The lighting control system is responsible for about 10% of the facility's energy savings. They also added a building management system. They upgraded the existing HVAC system to make it more efficient and easier on electrical usage.

Spears and Smith added 6 PV vehicle charging stations, joining the two that were already on site. They also installed a battery storage system that functions as an uninterrupted power supply, backing up the power system and keeping the server and computers on line if the power goes out.

For more information about Pacific Ridge Electric and its services or Paradigm Power and Planning and its services, email Ken Spears at Pacific Ridge Electric at [ken\\_spears@pacificridgeelectric.com](mailto:ken_spears@pacificridgeelectric.com), or email Chris Smith at Paradigm Power, at [csmith@calmcc.org](mailto:csmith@calmcc.org) or call (415) 848-9099.



Pacific Ridge Electric installed a battery storage system that functions as an uninterrupted power supply, backing up the power system and keeping the server and computers on line if the power goes out.

Photo By SCP Digital

## HOW YOU CAN BENEFIT FROM THE ECAP PROGRAM

**WHAT:** ECAP, the Energy Conservation and Performance Platform, is available to members of the National Electrical Contractors Association (NECA) and their clients for completing energy-related projects. ECAP was developed by NECA to offer financing, insurance, warranties, professional design partnering and other project management elements.

**WHO:** Paradigm Power, San Francisco, is a premier ECAP resource partner. President Chris Smith and his staff work with NECA contractors to teach the ECAP model.

**HOW:** For more information about the NECA ECAP Program, or to request a demo contact [Support@NECAECAP.com](mailto:Support@NECAECAP.com), 3 Bethesda Metro Center, Bethesda, MD 20814, 301-657-3110 or visit [www.necaecap.com](http://www.necaecap.com)

To contact Chris Smith at Paradigm Power, call 415-848-9099 or visit [www.paradigmpower.org](http://www.paradigmpower.org)