

# THE WINDS

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The David And Lucile Packard Foundation Redwood Electric Group



Peninsula Humane Society Paganini Communications



Crestron Electronics
Steve Alexander Q&A



ICS Teleconferencing Project

# And more...





A publication of the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) of Northern California.



The Peninsula Humane Society & SPCA, formally known as the Tom and Annette Lantos Center for Compassion, has obtained LEED certification.

# From Training Rooms To Digital Displays, Paganini Communications Brings The Latest Technology To Animal Adoptions

lot of happy tails are wagging at the adoption center for the Peninsula Humane Society & SPCA in Burlingame these days, thanks in part to the work of Paganini Communications, Inc. The electrical contracting company wired a unique communications project at the new animal care and rehabilitation facility at 1450 Rollins Road, which is formally known as the Tom

and Annette Lantos Center for Compassion. In addition to the Companion Animal Adoption Center, the facility also houses a Wildlife Rehabilitation program and is LEED certified.

Within the 51,000 square foot facility, Paganini Communications integrated digital displays, wired AV equipment, connected security cameras on the interior and exterior, and also wired hundreds of phone and computer drops. They brought in the copper and fiber backbone for the communication system and

wired the first floor IDF room and the third floor server room. Paganini Communications connected training rooms and conference rooms and

brought the visitor's lobby to life with four huge digital displays. (For more details, see the illustration on pages 4-5)

The big screens, a favorite stop for visitors, sometimes show Lassie reruns and other animal programs, plus feature animals available for adoption. Paganini Communication's work helped to bring in thousands of fascinated visitors, including hundreds of kids, for a record-setting year of

adoptions!

"The project was definitely a challenge," said Paganini Communications Vice President Larry Andrini. "We had to coordinate with the other trades and make sure we got our work done before the public grand opening. Having a facility which takes in eagles, falcons, hawks and allows these animals to recuperate, and then bring in the general public to see it—that's part of what made the job so rewarding."

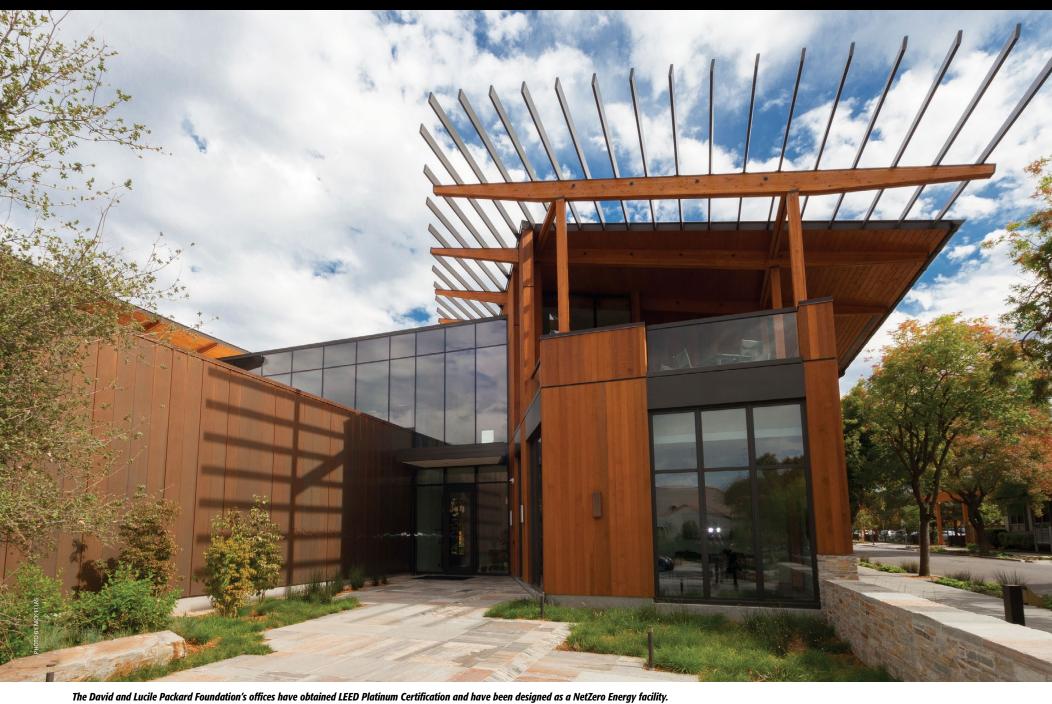
The Peninsula Humane Society & SPCA expanded to its new

facility in the fall of 2011, after operating 60 years at a small facility a few miles away in San Mateo. The new center is funded entirely by private

(Continued on Page 6)



Digital displays and AV equipment were installed by Paganini Communications, Inc. throughout the 51,000 square foot facility.



# **Redwood Electric Group Wires The David and Lucile Packard Foundation** With Energy Saving Control Systems

hanks in part to the work of Redwood Electric Group, the David and Lucile Packard Foundation has been recognized as one of California's greenest office buildings.

Redwood Electric Group dramatically minimized the overall energy footprint at the David and Lucile Packard Foundation by making aggressive reductions in plug loads through the installation of state-of-the-art building management and power monitoring controls systems.

As a result of this and other energy saving strategies such as a 292kW photovoltaic system installed by Redwood Electric Group, the Foundation's new Los Altos offices have obtained LEED Platinum Certification. They have also been designed as a NetZero Energy facility.

When the David and Lucile Packard Foundation designed their headquarters to be LEED Platinum and NetZero Energy, they were making a conscious decision to live the values they support. For maximum impact, the facility is designed to be replicated elsewhere in the country to provide a model for those looking for more sustainable building practices.

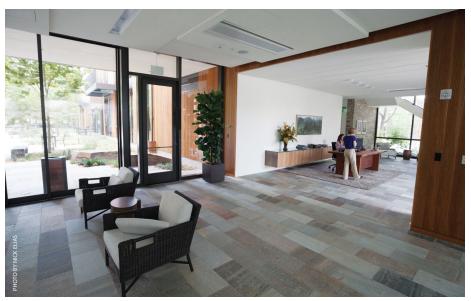
Redwood Electric Group performed all the low voltage system installation, including voice/data, fire alarm, security and sound

masking. Redwood Electric Group contracted with Integrated Communication Systems (ICS) to engineer and install the state-of-theart audio video systems. (see related story, page 8).

The Foundation's new two-story 49,000 square foot building was completed in July 2012 and is designed with many sustainable elements. However, it is the reduced plug loads, incorporated by Redwood Electric Group, along with the installation of state-of-the-art building management and power monitoring control systems that contribute to the facilities design as a NetZero Energy office. Installer Technicians for IBEW Local 332 in San Jose installed the controls systems as well as the other low voltage systems.

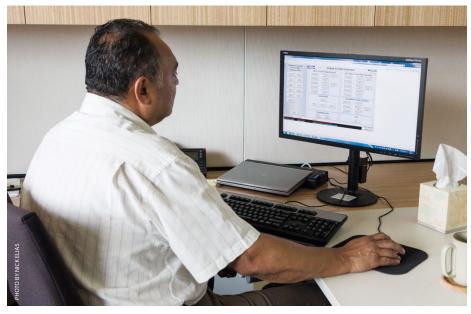
To begin the process, Redwood Electric Group utilized 3D/BIM design to layout the electric systems and coordinate with other contractors. Through BIM activity, Redwood Electric Group coordinated larger feeder conduits, light fixtures and cable tray systems with all the mechanical ducting.

Redwood Electric wired the IDF on the first floor and an MDF on the second floor. The teledata system, which connected 300 cable outlets using 250,000 feet of cable, specified shielded category 6A wiring, not commonly selected in the U.S. According to Richard Yeadon, Systems Group leader for



The lobby of the David and Lucile Packard Foundation is designed for maximum use of day lighting and is wired by Redwood Electric Group with automatic controls that regulate shades and ambient lighting.



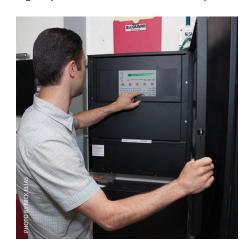


A Foundation staff member monitors energy usage through the SCADA system wired by Redwood Electric Group.



Redwood Electric Group wired control panels outside each conference room to allow Foundation staff to reserve meeting time.

Redwood Electric Group, the shielded wiring solution, often chosen in Europe, offers higher performance and better security.



Redwood Electric Group installed a Notifier fire alarm system.

To track the building's electrical load, Redwood Electric Group installed a metering service which is integrated into the building control system. The metering service tracks all branch power circuits as well as PV production.

The building control system, in turn, is integrated into the SCADA System (Supervisory Control and Data Acquisition System). SCADA monitors all energy collection and consumption, including what the building draws from PG&E and what it collects from the solar panels. It also

networks with the mechanical and electrical systems.

Redwood Electric Group wired the SCADA System into all the networks using Category 6A cabling. Foundation employees have access to a SCADA-controlled dashboard that allows them to monitor in real-time the amount of energy used during their office activities, such as printing.

Redwood Electric Group installed a lighting control system designed by Lutron Electonics, Inc. It ties back to the building management system and is wired into all the rooms by sensors. The lighting control system interfaces with the building management system to provide a display of pertinent information and maintain the most efficient levels of light.

Controls operate interior shades, automatically moving them up and down to keep the sun from directly shining into the building. This brings natural light into the building, without the heat and glare of direct sunlight. Sensors automatically dim light in the offices to efficient levels. In meeting rooms, touch pad screens with Lutron GRAFIK Eye® controllers integrate with the AV system to control light levels.

Redwood Electric Group installed a

sound masking system with 72 speakers in the open spaces above the cubicles. The masking system provides white noise, with easy adjustments available based on sound levels.

For the David and Lucile Packard Foundation, the time, expense and challenges of construction were well worth the effort. "This building is a physical manifestation of our long-term commitment to reduce greenhouse gas emissions around the world," said the Foundation.



Redwood Electric Group's team members include:

#### REAR LEFT TO RIGHT:

Tyce Wilhite, Project Manager Fire Alarm; Leon McMillian, Project Manager; Mark Keys, Partner

#### FRONT LEFT TO RIGHT:

Richard Yeadon, Group Leader Systems; Patrick Leinart, Systems Project Manager; Mike Ruiz, Superintendent

# The David And Lucile Packard Foundation Electrical Team:

#### **ELECTRICAL CONTRACTOR:**

Redwood Electric Group, Santa Clara. CA

#### **AUDIO-VISUAL CONTRACTOR:**

Integrated Communication Systems (ICS), San Jose, CA

#### **INSTALLER TECHNICIANS:**

IBEW Local 332, San Jose, CA

#### ELECTRICAL ENGINEER:

Integrated Design Associates, Inc., San Jose, CA

#### PROJECT MANAGEMENT:

Mark Keys, Project Executive Leon McMillan, Project Manager Richard Yeadon, Project Manager, Low-Voltage Systems Patrick Leinhart, Project Manager, Low-Voltage Systems

#### **SCOPE OF WORK:**

Lighting control; security access and surveillance system; sound masking system; wireless crosswalk lighting system; fire alarm system; tele/data system; metering system; SCADA and BMS system wiring

### **Redwood Electric Group: From BIM To Total Integration**



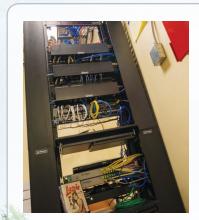
PHOTOGRAPHY BY NICK ELIAS

# Paganini Communications Wires And Security At The New Peni

The Peninsula Humane Society & SPCA, a new adoption facility for dogs, cats, reptiles, rabbits, birds and other wildlife in On the first level is a 13,847 square foot Canine Adoption Center which is connected to a renovated three stores.



The 40'x60' dog park is a large exercise area with green turf and a 15'x15' retractable skylight. A favorite with visitors, staff and volunteers exercise and work with the animals to make them more adoptable. Cement sculptures of dog heads on the wall serve as a water feature and water fountain.



Paganini
Communications
brought in the
copper and fiber
backbone into the
first floor IDF room.
The backbone is
fed from the first
floor to the third
floor.



Ducks, geese, owls, hawks, songbirds and mammals are treated and rehabilitated in the outdoor raptor enclosure. The exterior wildlife deck has large raptor enclosures and areas for small birds, along with a pond for duck rehab.



The classroom is used for conferences, classes and kids camps.



20 dog pods offer housing for up to 45 dogs. The rooms have high ceilings, great lighting, built in chairs and couches and windows for visitors to view the dogs. There are dyed concrete floors, a good flush system and optimum air exchanges and ventilation.

#### Paganini Communications, Inc. Project Team Peninsula Humane Society & SPCA:

#### PRINCIPAL:

Larry Andrini, Vice President and Project Manager

#### **PROJECT FOREMAN:**

Dave Pellegrini

#### **INSTALLER TECHNICIANS:**

IBEW Local Union 6, San Francisco IBEW Local Union 617, San Mateo

#### SCOPE OF WORK:

Integration of digital displays; AV equipment installation and wiring; CCTV installation; Voice/Data infrastructure; cable drops; wiring of communication closets



Paganini Communications wired CCTV cameras on the exterior, as well as the interior, for security and monitoring.



Staff at the adoption center also monitors the CCTV system at the main desk.



Five large digital displays in the lobby and adoption area wired by Paganini Communication offer visitors a chance to interact with touch screens to view animals available for adoption, information about the facility, old Lassie TV segments and other information.

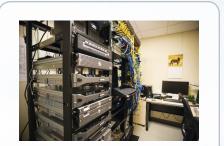
Paganini Communications made over

100 cable drops on the second floor.

ILLUSTRATION BY PAICHING WEI • PHOTOS BY NICK ELIAS

# Digital Displays, Training Rooms nsula Humane Society & SPCA

Burlingame, features interactive digital displays and other low voltage systems wired by Paganini Communications, Inc. by building that houses cats and small animal adoptions, along with the facility's wildlife rehabilitation program.



Paganini Communications connected the backbone from the first floor IDF room to the third floor server room. The central monitoring station is located



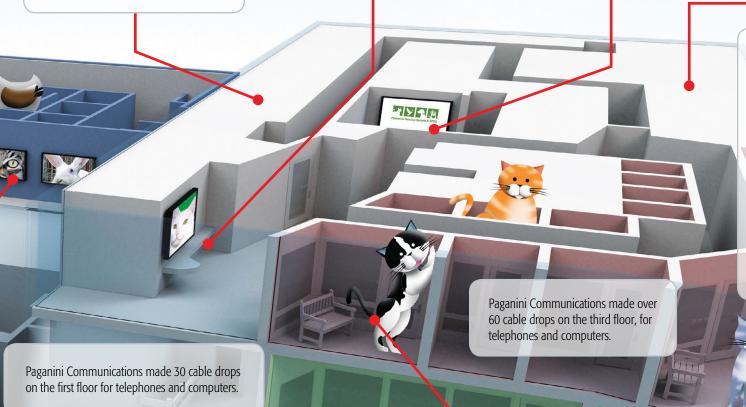
Paganini Communications also wired a digital display on the second floor in the public lobby.



Paganini Communications wired the main boardroom with AV equipment and connections.



The third floor also contains the development center and other offices.





The cat condos are on the third floor and offer cats for adoption. The rooms have windows for easy viewing for visitors, along with comfortable "furniture," good light and ventilation for the cats.

A parking garage is on the first floor of the remodeled building.

Reptiles are adopted from this area.

The second floor also contains the kitten nursery,

the Humane House (a teaching area for kids) and

the learning space in the Humane House with a digital

display and touch screen which features kids' activities.

the main veterinary surgery area. There are five veterinarians on staff. Paganini Communications wired



#### Peninsula Humane Society & SPCA Project Team:

#### PRINCIPAL:

Ken White, President

#### **CONSTRUCTION MANAGER:**

Jerry Griffin, Griffin & Sons

Griffin & Sons Construction, Inc., Woodside, CA

#### ARCHITECT:

Swatt Miers Architects, Emeryville, CA

#### GENERAL CONTRACTOR:

Swinerton Incorporated, San Francisco, CA

#### **ELECTRICAL CONTRACTOR:**

Dynaelectric, An EMCOR Company, San Francisco, CA

#### **COMMUNICATIONS CONTRACTOR:**

Paganini Communications, Inc., San Francisco, CA





# Paganini Communications Makes Wiring A Bark In The Park At The Peninsula Humane Society

#### - Continued From Page 1



The 40' x 60' dog park is a favorite with visitors and staff. Volunteers exercise and work with the animals to make them more adoptable.



20 dog pods have high ceilings, great lighting and built in furniture for the animal's comfort and security.



The cat condos are on the third floor and offer cats for adoption. The rooms have windows for easy viewing for visitors, along with comfortable "furniture," good light and ventilation for the cats.



Paganini Communications wired the third floor server room, along with its central monitoring station inside the third floor server room.



Scott Delucchi of the Peninsula Humane Society and Dave Pellegrini of Paginini Communications coordinated the unique communications project at the new animal care and rehabilitation facility.



The conference room area has been wired by Paganini Communications for meetings and training.

"We have a facility that the community deserves. It is a wonderful community with many great things; it should have an incredible animal center, and now it does."

- Scott Delucchi, Sr. VP, Community Relations Peninsula Humane Society & SPCA

donations. Its expanded square footage allows the Humane Society to adopt out more animals. The older center is currently used for intake purposes.

"The word got out about the new facility, and we were busy right away," said Scott Delucchi, Senior Vice President, Community Relations of the Humane Society. "It's a fun place for kids and families to visit. There are no chain link dog runs or cramped cages—it's all furnished dog pods and cat condos. Kids can run from one room to another to see every single dog and not miss out on any of them."

The state-of-the-art facility was designed by Swatt Miers Architects of Emeryville, nationally recognized for the design of its companion animal facilities throughout the United States and Canada. Visitors have several favorite areas; one is the gigantic interior dog park, which is covered with green turf and has a 15' x 15' retractable skylight. Other highly

visited areas include the kitten nursery on the second level and the outdoor wildlife rehabilitation area on the roof.

Paganini Communications installed a total of eight digital displays throughout the facility which are used to provide information to the public. The displays incorporate touch screens that allow visitors to view different options such as upcoming events, animals up for adoptions and a visual tour of the facility. In addition to being in the adoption lobby, the digital displays are also found on the second and third floors in the public areas. Paganini Communications also set up a live feed cam of the wildlife area that will be activated at a later date. It will allow visitors to view the raptors and birds that are rehabilitated on the roof of the new center. Paganini Communications also installed 18 CCTV cameras throughout the facility's exterior and interior for security and monitoring.

Paganini Communications, Inc. and Paganini Electric Corporation (www.pagcos.com) are headquartered in San Francisco and provide electrical construction and low voltage systems throughout the Bay Area. Vice President Larry Andrini can be reached at LarryA@pagcos.com or 415.575.3900.



# Crestron Electronics Representative Steve Alexander Outlines Crestron's Recent Focus On Building Information Systems



Steve Alexander is Branch Manager of Crestron West-Northern California in San Rafael. He has been a ©Crestron Electronics, Inc. representative for six years and has been in the industry for more than 22 years. The Crestron West-Northern California office includes a training center and showroom space. For more information on Crestron's dealers and products, contact Steve at salexander@Crestron.com, or call 415-332-2023 (office).

#### Q: How has Crestron expanded its platforms in recent years?

**A**: Crestron has shifted its focus from controlling AV to integration of building information systems. We now get involved with projects much earlier because buildings today need to be smarter and much more integrated, and our platform is the one that can help integrate the smart systems. If someone has a building management system or a building automation system, Crestron can integrate the various controls. We make shading and lighting systems, and can integrate with HVAC and building automation systems. We are becoming much more central to the MEP Specifications, not just the low voltage systems integration specifications. The way people interact with technology has also changed. We make software that users can download from iTunes, the Android Marketplace and Google Play. It allows them to turn their phone or tablet into a control interface for the Crestron system.



Crestron TPMC-4SM touch screen running Fusion RV was installed outside each conference room of the David and Lucile Packard Foundation.

# Q: ICS used Crestron products during its integration of AV and teleconferencing systems at the David and Lucile Packard Foundation Headquarters. Why was Crestron selected?

A: Crestron has designed Integrated Building Technology equipment for projects like the David and Lucile Packard Foundation Headquarters to help make rooms more responsive to the environment and allow buildings to become more energy efficient. The Foundation is one of the most energy efficient facilities that I am aware of. Everything was done with an eye towards efficiency, sustainability and longevity. The Crestron equipment specifically includes sensors that are designed to power down building and presentation systems, depending on whether people are present in a room or not. This reduces energy usage to a minimum. Motorized window shades in a room can help sense the ambient light level. We perform what we call "light harvesting" by integrating

automated lights with the window shade controls.

This integration responds to the ambient level of outside light and turns lights off when appropriate.

#### Q: What is the Crestron RoomView® system that is used at the Foundation?

- A: Crestron RoomView® is a room scheduling and management software tool. Fusion RV and the TPMC-4SM panels are part of an integrated system that the organization can use to view the room schedule and see if a room is booked or available. They can then book a room right on the touch screen if it is available.
- Q: What is the asset management component of Crestron's Fusion RV™ software platform used at the David and Lucile Packard Foundation?
- A: The CrestronFusion RV™ Remote Asset Management software functions as a help desk and a resource management application for conference room bookings. The program allows the support staff to monitor and manage rooms around the corner or around the world very easily. It acts as an online portal that looks at all conference rooms in a facility and reports what is going on in each room. The Fusion RV™ portal can alert you to a problem by email. You can take control of the work anywhere you have web access.

### Q: What is Crestron's DigitalMedia™ product, which is used at the David and Lucile Packard Foundation?

A: In the last few years, most video signals have gone to digital, and not all computers and software are compatible. A conference room must be set up to serve anyone who wants to make a presentation. No matter what laptop or program you are using, DigitalMedia™ takes all of the signals, whether they are VGA, HDMI or analogue, and turns them into HDMI putting them on a single twisted pair or fiber optic cable.

#### Q: How do you like working with IBEW/NECA contractors?

A: My experience with IBEW NECA has been very good. I can say with a lot of confidence that building integration and systems integration is complex work. The training and experience that union shops provide usually give them a leg up on folks that don't have that kind of extensive training, and don't have a pool of certified technicians and electricians to draw from.

# How can I find an Audio Video Contractor?

#### **Access Communications Inc.**

Amy Poncy aponcy@access-comm.net 976 Rincon Circle San Jose, CA 95131 (408) 970-0970 www.access-comm.net

#### Bockmon & Woody Electric Co., Inc.

Russel Shuman russel@bockmanwoody.com 1528 El Pinal Drive Stockton, CA 95205 (209) 464-4878

#### **Cal Coast Telecom**

Rick M. Radonich rick@cctcom.net 886 Faulstich Court San Jose, CA 95112 (408) 275-8888 www.cctcom.net

#### **Cbf Electric Inc.**

Nove Tejada nove.tejada@cbfelectric.com 101 Howard St. Suite E San Francisco, CA 94105 (415) 495-3085 www.cbfelectric.com

#### C.H. Reynolds Electric, Inc.

Shelly Paiva shellyp@chreynolds.com 1281 Wayne Ave. San Jose, CA 95131 (408) 436-9280 www.chreynolds.com

#### Coda Technology Group

Eric Short eshort@coda-tech.com 1370 Redwood Wy. Ste. C Petaluma, CA 94954 (707) 795-3522 www.coda-tech.com

#### Cupertino Electric, Inc.

Dave Dorcak dave\_dorcak@cei.com 1132 N. Seventh St. San Jose, CA 95112 (408) 808-8000 www.cei.com

#### **Decker Electric**

Jeffrey Bloom jbloom@deckerelectric.com 1282 Folsom St. San Francisco, CA 94103 (415) 552-1622 www.deckerelectric.com

#### Gill's Electric Co., Inc. (Alpha Electronic Systems)

Brad Gill brad@gillselectric.com 2410 Webster Street Oakland, CA 94612 (510) 451-2929 www.gillselectric.com

#### IDEX Global Services, Inc.

Sean Canon scanon@idexglobal.com 2301 Kerner Blvd. San Rafael, CA 94901 (415) 482-4242 www.idexglobal.com

#### Industrial Electronic Systems, Inc.

Jahn Blonskij jblonskij@iesi.net 3250 Monier Circle, Ste. F Rancho Cordova, CA 95742 (916) 638-1000 www.iesi.net

#### Integrated Communication Systems (ICS)

Aaron Colton aaron.colton@ics-integration.com 990 Parrott St. Suite #40 San Jose, CA 95112 (408)491-6000 www.ICS-Integration.com

#### Lunardi Electric, Inc.

Ray Lunardi jolene@lunardielectric.com 5334 Sebastopol Rd. Santa Rosa, CA 95407 (707) 823-2129 www.lunardielectric.com

#### **McMillan Electric**

Jim Murray jmurray@mcmillan.com 1515 S. Van Ness Ave. San Francisco, CA 94110 (415) 826-5100

#### **Morrow-Meadows Corporation**

James Goetz info@arcelectric.com 385 Oyster Point Blvd. Suite 2 South San Francisco, CA 94080 (650) 634-0682 www.arcelectric.com

#### O.R. Enterprises, Inc.

Dave Stoutenburg dstouten@cscabling.com PO Box 576898 Modesto, CA 95357 (209) 530-1700

#### Paganini Communications, Inc.

Larry Andrini larrya@pagcos.com 190 Hubbell St. San Francisco, CA 94107 (415) 575-3900 www.pagcos.com

#### Rosendin Electric, Inc.

Ron Clarkson busdev@rosedin.com 880 Mabury Rd. San Jose, CA 95133 (408) 534-2816 www.rosendin.com

#### Signawest Systems, Inc.

Ron Kunkel rkunkel@signawest.com 7300 Central Ave., Ste. D Newark, CA 94560 (510) 795-9999 www.signawest.com

#### Sunrise Systems LVC

John Tapia john.tapia@sslvc.biz 4319 N.Brawley Ave Fresno, CA 93722 (559) 477-4137 www.sslvc.biz

#### T&R Communications, Inc.

Pat McMurray pmcmurray@trcomm.inc.com 221 Lathrop Way, Ste. C Sacramento, CA 95815 (916) 286-3300

#### WPCS International Inc.

Tammy Evans tammy.evans@wpcs.com 521 Railroad Ave. Suisun City, CA 94585 (707) 421-1300 www.wpcs.com

#### XL Communications Inc.

Peter Choi info@xlcomm.com P.O. Box 7808 Fremont, CA 94537 (510) 857-7800 www.xlcomm.com

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of Northern California



# ICS Installs State-Of-The-Art Teleconferencing Systems At The David And Lucile Packard Foundation Headquarters



Mark Berlo and Jason Meyer of ICS, along with Marcus Krawinkler of the David and Lucile Packard Foundation, test the energy saving teleconferencing system.

s part of its mission to create a sustainable headquarters, the David and Lucile Packard Foundation wanted to lower its carbon footprint. ICS, contracted by Redwood Electric Group and General Contractor DPR, outfitted meeting rooms for remote collaboration, providing options to reduce travel-related carbon emissions.

ICS also worked towards NetZero Energy status by installing energy-saving AV systems, including a control system integrated with multiple disciplines to maximize the building's usability and minimize its energy use.

"The David and Lucile Packard Foundation is one of the most sustainable buildings in the U.S., and ICS was excited to contribute to the building's LEED Platinum Certification and NetZero Energy status," said Mark Berlo, ICS project manager.

#### LEED PLATINUM

The ICS scope included outfitting numerous large and small meeting rooms, and assembly spaces with state-of-the-art audio visual systems for both presentations and video teleconferencing. Signal routing throughout the space was accomplished using Crestron DigitalMedia<sup>™</sup> products, which provide an ability to accommodate both analog and digital video, although HDMI is predominate among the David and Lucile Packard Foundation users.

#### **AUDIO**

ICS also used a HARMAN BSS Audio Soundweb<sup>™</sup> London conferencing system, which provides superior sound quality.

ICS used Crestron again for AV system control. Wall-mounted touch panels were installed throughout the space, which provide the users an ability to launch presentations and adapt systems to extend AV coverage into overflow spaces or to change a room set up when the space needs to be divided into two separate presentations. For ease of use, ICS installed wireless touch panels that could be removed from their normal wall mounted position and placed conveniently near a presenter.

The control system program was structured to efficiently manage devices that consume electrical power. When room occupancy sensors indicate that rooms are vacant, the AV system automatically goes into

a power-save mode. Likewise, the ICS control system manipulates shades and lighting based on room usage and occupancy.

#### RoomView®

In addition, ICS also installed a room scheduling system from Crestron called RoomView®, which makes it easy for users to view scheduled meetings or reserve rooms using Outlook via a Microsoft Exchange server. Each conference room was equipped with a wall-mounted display device that details the committed room schedule or usage.

Users can go to any scheduling panel outside a conference room to check for room availability or schedule drop-in meetings. A software program by Crestron called Fusion RV™ Remote Asset Management tracks room usage statistics. Help desk requests were also installed.

For more information, contact Aaron Colton at aaron.colton@ics-integration.com or Mark Berlo at mark.berlo@ics-integration.com or call 408.491.6000.

# The David And Lucile Packard Foundation AV Project Team Snapshot:

#### AV CONTRACTOR:

Integrated Communication Systems (ICS), San Jose, CA

#### **AV PROJECT MANAGER:**

Mark Berlo, ICS

#### TECHNICIANS:

IBEW Local 332, San Jose, CA

#### SIGNAL ROUTING:

Crestron DigitalMedia™

#### **AV SYSTEM CONTROL:**

©Crestron Electronics, Inc.

#### AUDIO DSP AND AUDIO CONFERENCING SYSTEM:

HARMAN BSS Audio Soundweb™

#### **VIDEO CONFERENCING:**

Cisco TelePresence Codec C90 and Cisco TelePresence Camera PrecisionHD 1080p

#### FLAT PANEL DISPLAYS:

Sharp and NEC Display Solutions

#### **PROJECTORS:**

Projection Designs and Panasonic

Union Contractors (IBEW/NECA) in Sound & Communications combine a skilled and trained work force with world class technology. For the best installations in voice/data/cabling, network systems, data center facilities, audio/video systems, sound systems, fiber optics, wireless, security systems, fire/life safety systems and CATV, call a union contractor or visit www.norcalvdv.org.

