

The Silicon Valley Wire

The latest news from the electrical industry in Silicon Valley

1st Quarter 2018



Radiant Electric Wires Two New 'Frog' Buildings For Cedar Grove Elementary School

Radiant Electric completed the wiring of two new 'Frog' buildings at Cedar Grove Elementary School, which serves 400 students.

Photo By Nick Elias

Radiant Electric recently wired two new 'Frog' buildings at Cedar Grove Elementary School in San Jose, a K-6 school serving 400 students in the Evergreen School District.



Radiant Electric wired the ballasts in each of the Lutron dimming cabinets, which are located above the entry way door in each classroom.

Cedar Grove Elementary is updating its entire campus through the Measure M bond, and replaced several buildings with Project Frog components. Project Frog is a 21st century take on the traditional concept of portable classrooms that dot California's K-12 educational system.

Project Frog buildings feature a spacious learning environment with many flexible options and meet the most stringent green certification criteria, including LEED.

Radiant Electric, which specializes in educational remodeling work, completed the \$4.1 million electrical contracting project for the two Frog Buildings (A and C) with the assistance of 20 electricians from the International Brotherhood of Electrical Workers (IBEW), Local 332, San Jose.

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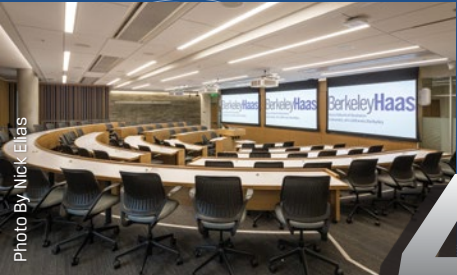


Radiant Electric Project Team (Left To Right): Reinhard Gross, President; Anthony Gonzalez, General Foreman

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ICS-Integrated Communication Systems Installs AV At UC Berkeley Haas School Of Business To Support Digital Learning



CH Reynolds Wires Low Voltage Structured Cabling For BOX Headquarters And Data Centers



Radiant Electric wired the classrooms which measure about 1,200 sq. ft. and feature teaching walls, open acoustically-treated ceilings, and ample daylight.

Photo By Nick Elias

Radiant Electric Wires Two New 'Frog' Buildings For Cedar Grove Elementary School

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Fred Zobel was the project manager for Radiant Electric; the general foreman was Anthony Gonzales.

Building C is a two-story classroom building and Building A is a two-story office/classroom facility, with offices on the first floor and classrooms on the 1st and 2nd floors. Each of the 22,800-sq.-ft. buildings have 12 classrooms and take about 10 weeks to assemble.

Radiant Electric's services including wiring the electrical infrastructure of buildings A and C, as well as installing the Lutron lighting controls for the classrooms, offices and corridors. Radiant Electric also installed underground power and communications utilities, emergency

power inverters, as well as a new switch gear and service for the site.

Radiant Electric also wired the photovoltaic solar system, and connected the data center electrical room for each building. Swenson and Associates is the general contractor. Aedis Architects designed the buildings' configuration.

The oversize classrooms measure about 1,200 sq. ft. and feature teaching walls, open acoustically-treated ceilings, and ample daylight. Classrooms have tackable wall panels, dry-erase wall finish at the end walls, a wet area, cubbies and motorized louvers to control the window shades.

In addition to wiring the two new Frog buildings, Radiant Electric is making other

electrical renovations on the site. Radiant Electric is wiring a former 'POD' building, that is still used as a library, as well as installing electrical infrastructure in a new Enviroplex portable kindergarten building made by America Modular Systems.

Reinhard Gross, President of Radiant Electric, said that the project was challenging because of the aggressive timeline and also because the prebuilt nature of the buildings requires more manpower and resources to keep up with the electrical installation.

"The classrooms have open ceilings," said Reinhard. "There are beams everywhere. T-bar ceiling are only in the corridors where we hid some of the wiring. We also installed wire mold raceways going from the



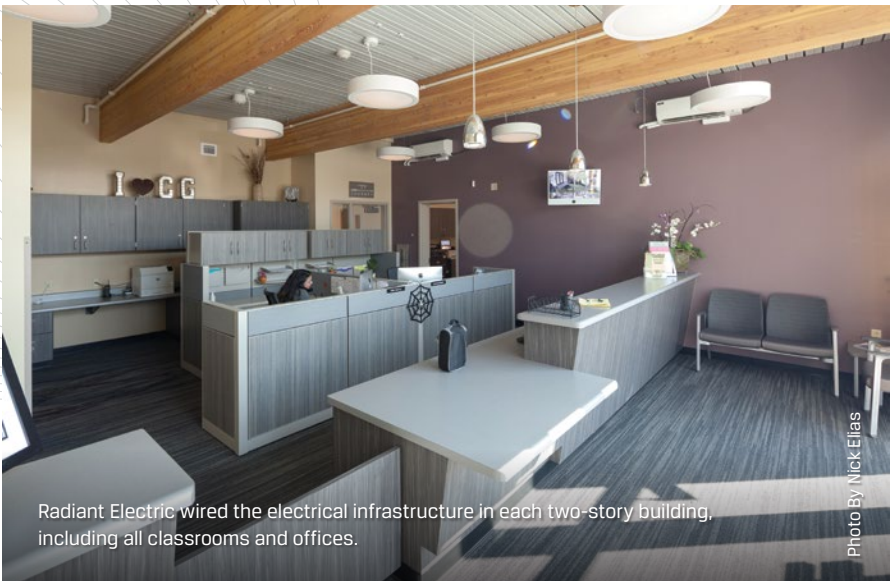
Radiant Electric installed the underground power and communications utilities, emergency power inverters, as well as a new switch gear and service for the site.

Photo By Nick Elias



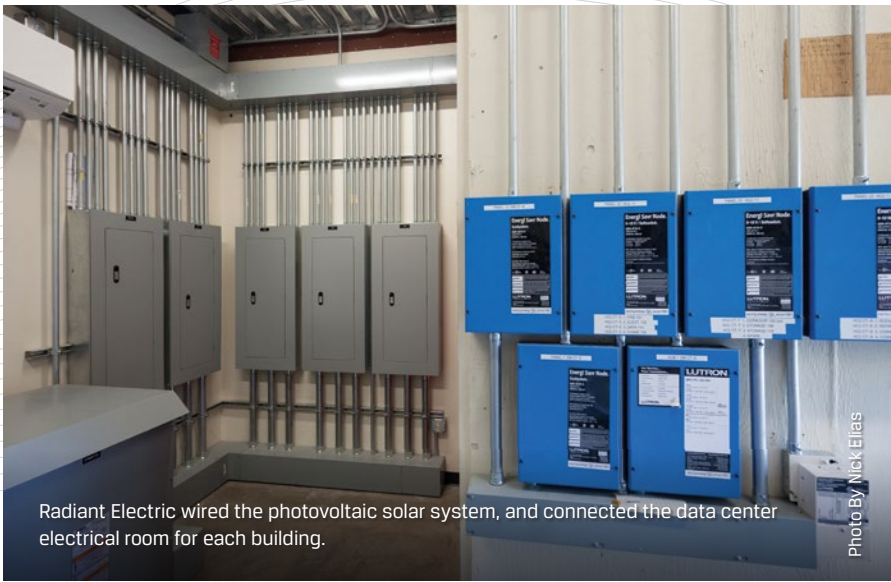
All the low voltage controls, as well as the wiring, are tied back to the building's data center, a combined IDF/MDF room which is on the 2nd floor of each of the two Frog buildings.

Photo By Nick Elias



Radiant Electric wired the electrical infrastructure in each two-story building, including all classrooms and offices.

Photo By Nick Elias



Radiant Electric wired the photovoltaic solar system, and connected the data center electrical room for each building.

Photo By Nick Elias



Radiant Electric installed the electrical infrastructure in a new Enviroplex portable kindergarten building made by America Modular Systems.

Photo By Nick Elias

corridors along the walls to contain the low voltage wiring."

In addition, Radiant Electric wired the ballasts in each of the Lutron dimming cabinets, which are located above the entry way door in the classrooms. The cabinets house the Lutron lighting control for each classroom, with the wiring controlling each individual ballast. The cabinet wiring is tied into the wire mold raceways in each classroom.

All the controls, as well as the wiring, are tied back to the data center, a combined IDF/MDF room which is on the 1st floor of each of the two Frog buildings. Each electrical room features an inverter for emergency power as well as room controllers that are wired to the Lutron ballasts. The system is controlled online, with each room tied into the system for individual access.

Radiant Electric has over 30 years of experience in school remodeling projects, including wiring projects for the Santa Clara Unified School District, Scott Valley Middle School, Peterson School, West Valley College, Mission College, and Evergreen College.

For more information about Radiant Electric and its services, contact Reinhard Gross, President, (reinhardg@radiantelectric.com) or call (408) 977-0100.

RADIANT ELECTRIC TEAM LIST CEDAR GROVE ELEMENTARY SCHOOL:

CLIENT:

Evergreen School District,
San Jose
Dave Sinclair, Director of
Facilities
Rick Navarro, Director of
Operations

ARCHITECT:

Aedis Architects, San Jose

GENERAL CONTRACTOR:

Swenson and Associates
Principals – Frank Burrell
and Tom Pond

FROG BUILDINGS:

FROG Group, San Francisco
Keiron Ryan, Senior Project
Manager

ENVIROPLEX BUILDINGS:

Provided by America Modular
Systems, Manteca

ELECTRICAL CONTRACTOR:

Radiant Electric, San Jose
Reinhard Gross, President
Fred Zobel, Project Manager
Anthony Gonzales, General
Foreman

SOLAR:

Solar Technologies,
San Ramon

AV AND DATA:

Cal Coast Telecom,
San Jose

FIRE ALARM, CLOCK, PA:

Sound and Signal Inc.,
Livermore

ELECTRICIANS:

20 members from IBEW Local
332, San Jose

ABOUT PROJECT FROG



Project FROG, founded in 2006 in San Francisco, engineers advanced building platforms delivered in configurable building kits that are assembled onsite. Project FROG (Flexible Response to Ongoing Growth) gives architects and builders a fast and cost-effective way to deliver custom buildings that meet modern construction standards.

In the educational arena, FROG buildings are replacing the old portable classrooms, many of which lack energy efficiency. Many of these inefficient units have uninsulated roofs and

poorly ventilated metal-box construction, and tend to be cooled by wall-mounted air-conditioning units in the summers.

Project FROG buildings, by contrast, are much more energy efficient, faster to build, and cheaper per square foot than a traditionally built structure. A project FROG building is designed to be eligible for a LEED-Silver USGBC green building rating, out of the box. Project FROG buildings are constructed from pre-engineered components in shapes that can be put together in different ways to meet the needs of the owners, like LEGOs.



ICS-Integrated Communication Systems Installs AV At UC Berkeley Haas School Of Business To Support Digital Learning

ICS installed all of the audio visual in the tiered classrooms, including projectors, speakers, video conference capability, as well as lecture capture and screen sharing technology.

Photo By Nick Elias

ICS-Integrated Communication Systems recently completed the installation of innovative AV technology for a new building on the Haas School of Business Campus at UC Berkeley.



ICS installed the innovative AV technology for a new building on the Haas School of Business Campus at UC Berkeley.



ICS wired the event control room, which enables the AV system and facilitates the transfer of content to any other lecture space within the building.

The installation for the Connie & Kevin Chou Hall, a just-built student-centered academic building, is designed to enhance learning and foster collaboration and demonstrates how technology can work to support digital learning. The new academic building will serve as a learning laboratory featuring state-of-the-art technology and flexible spaces aimed at transforming the student experience.

The six-story AV project includes an ICS-installed 10g fiber network which handles all video, audio, and control. The AV systems supports eight tiered lecture spaces; seven flex classrooms; 31 breakout rooms (for impromptu collaboration); a café and a large event space that seats 180. The building is located on the northeast edge of the Haas campus.

"ICS is proud to support Berkeley-Haas in its focus to advance the learning environment for higher education through these forward-thinking AV installations," said Aaron Colton, CEO of ICS-Integrated Communication Systems. "This project has been identified as a technology and learning model for other business schools on the UC and Cal State campuses."

The project architect is Perkins+Will. TEECOM is the technology consultant. The ICS project manager is Mark Berlo.

ICS expedited collaboration among

students and faculty members through the installation of a Solstice wireless presentation system in all the classrooms and breakout rooms (used for group study). Solstice, manufactured by Mersive Technologies Inc., enables multiple users operating a range of devices to connect simultaneously to a shared display over a Wi-Fi or Ethernet network by entering their access code.

With a Solstice-enabled display in the room, up to eight simultaneous users can instantly connect, share, and control the display, which fosters collaboration and decision making. The content is projected onto the screen and microphones (equipped with touch LED rings) capture student interaction as well as the entire classroom's feedback.

The system incorporates an Optex® Redscan tracking device, an infrared laser system that uses cameras in two corners of the room to track teachers recording their interactions with students during lectures. The Evertz® IP video records the lecture, using the new HDMI IP switching and distribution system.

The tiered lecture spaces are also equipped with video conference capability and lecture capture technology. A feature rich Panopto® video conference system is installed in the tiered lecture spaces. It has the ability for students



The event space is equipped with a 22' x 9.5' Primeview LED video wall, which uses LED video tiles.

Photo By Nick Elias

to remotely access past and present lecture content. The Panopto records all of the metadata information for the video capture automatically, based on the teacher log in, the scheduling of the room, and the content for the class. The students can then go back and review the lecture online at their own convenience.

The event space, located on the top floor, is equipped with a 22' x 9.5' LED video wall manufactured by Primeview that transmits clear, crisp bright images. This large format display was created using LED video tiles. The space is designed to accommodate a variety of uses, such as student meetings, presentations, and entertainment.

The video wall features an RGB Spectrum windowing processor, which can receive multiple live video streams in different formats, and convert them to be seen on the video wall in any one of four

different windows that can be created.

Most of the video wall operations are set up through presets on a Crestron touch panel. The event space uses the Evertz® video transmission/distribution system, which is patched into the control room.

ICS installed a QSC QSYS audio redundant Core DSP system using Dante IP audio for transport. The entire AV system is interconnected to a matrix of centralized control rooms which facilitates the ability to transmit the activities in any teaching space to any other lecture spaces within the building.

For more information about ICS-Integrated Communication Systems (ICS) and its audio video services, contact Justin Gamble, Director of the AV Division (justin.gamble@ics-integration.com) or call (408) 491-6000.

ICS-INTEGRATED COMMUNICATION SYSTEMS TEAM LIST

HAAS SCHOOL OF BUSINESS CAMPUS, CONNIE & KEVIN CHOU HALL, UC BERKELEY:

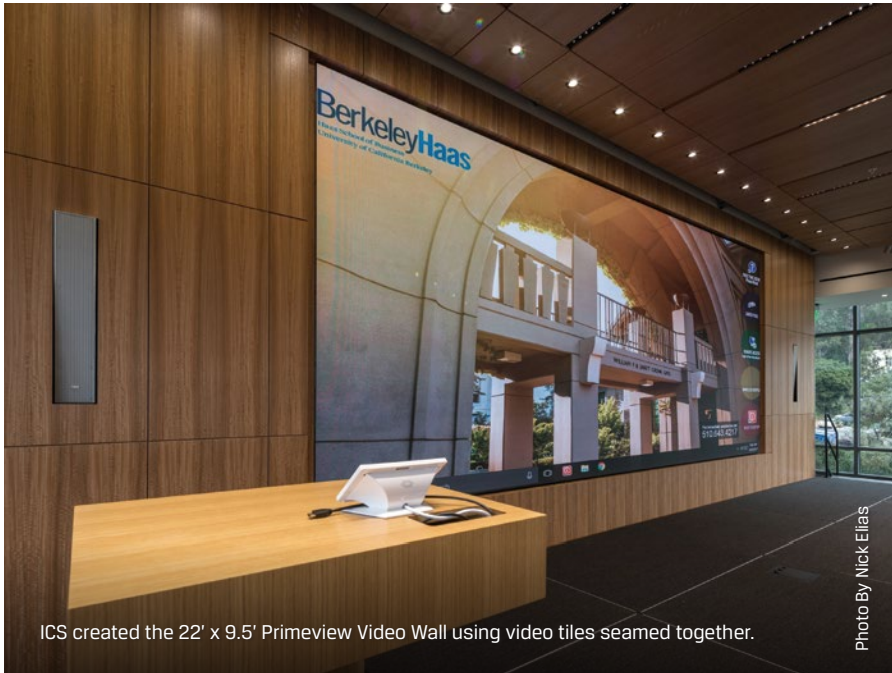
OWNER:
University of California, Berkeley, gifted from the Partnership for HAAS Preeminence

ARCHITECT:
Perkins+Will

GENERAL CONTRACTOR:
Vance Brown Builders

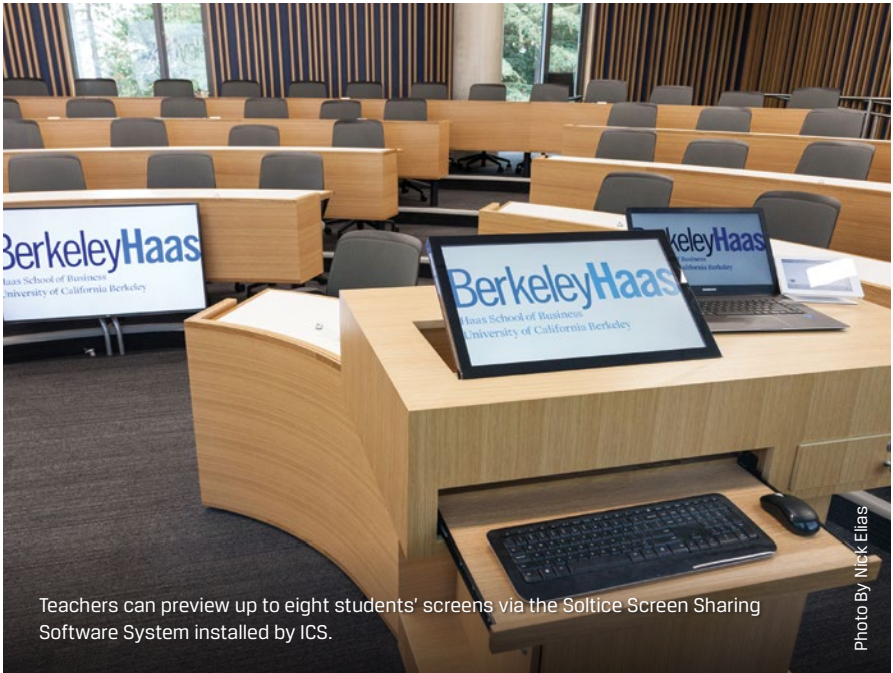
AUDIO VIDEO CONTRACTOR:
ICS-Integrated Communication Systems, San Jose
Mark Berlo, Project Manager

AV TECHNICIANS-INSTALLERS:
Members of the International Brotherhood of Electrical Workers (IBEW) Local 332, San Jose
David McKinnon, Lead Senior Technician
Jarod Fontaine, Co-Lead Senior Technician



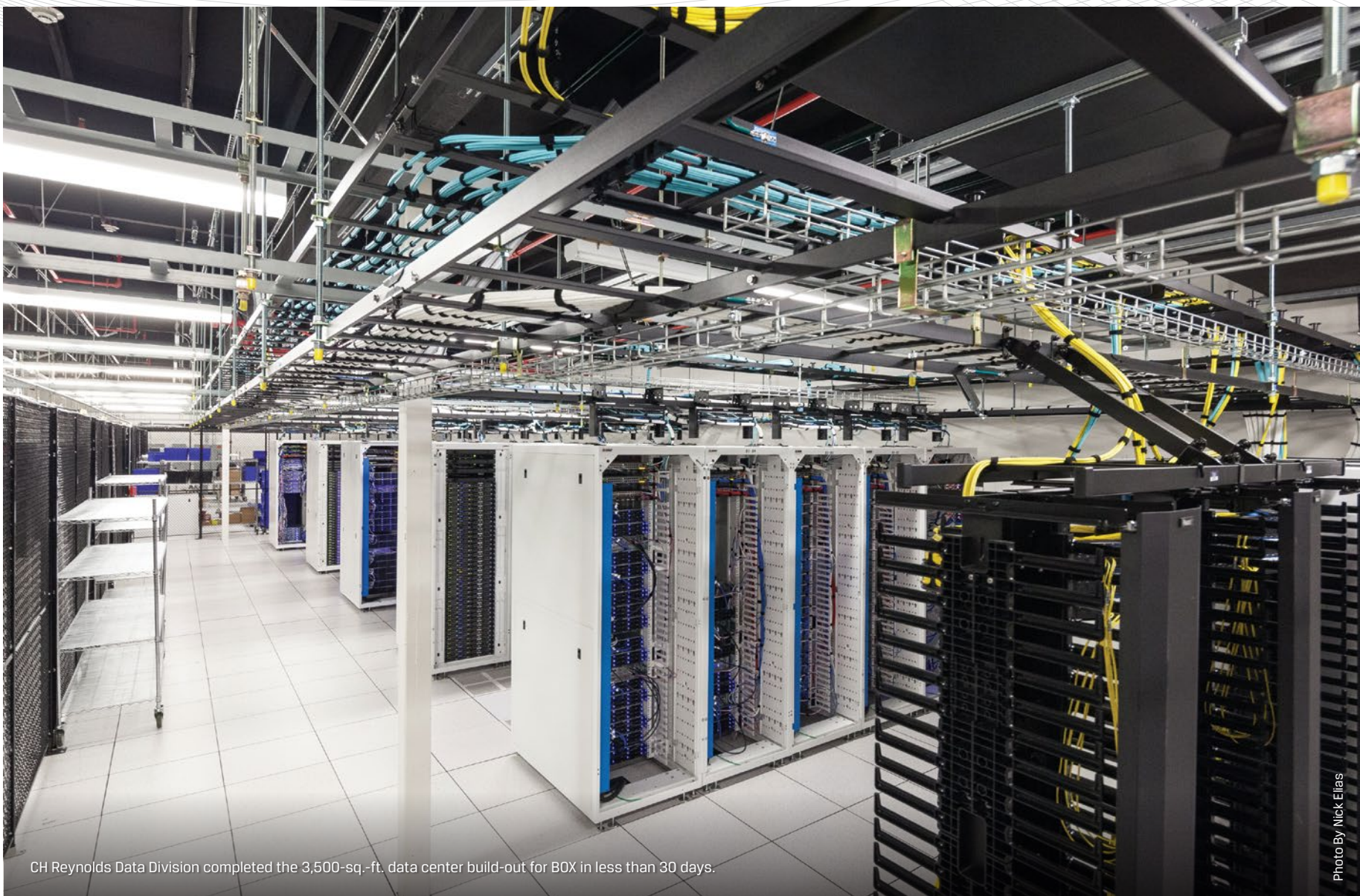
ICS created the 22' x 9.5' Primeview Video Wall using video tiles seamed together.

Photo By Nick Elias



Teachers can preview up to eight students' screens via the Soltice Screen Sharing Software System installed by ICS.

Photo By Nick Elias



CH Reynolds Data Division completed the 3,500-sq.-ft. data center build-out for BOX in less than 30 days.

Photo By Nick Elias

Data Construction Electrical Contractor CH Reynolds Builds Out The New BOX Data Center In Santa Clara

CH Reynolds Electric, known for its end-to-end data center support services, recently completed its fourth data center build-out for BOX® at the company's new co-location in CoreSite, Santa Clara.



CH Reynolds wired the Horizontal Distribution Areas (HDA) with quick connect racks that are prewired, allowing for each of the cabinet locations to be easily replaced.

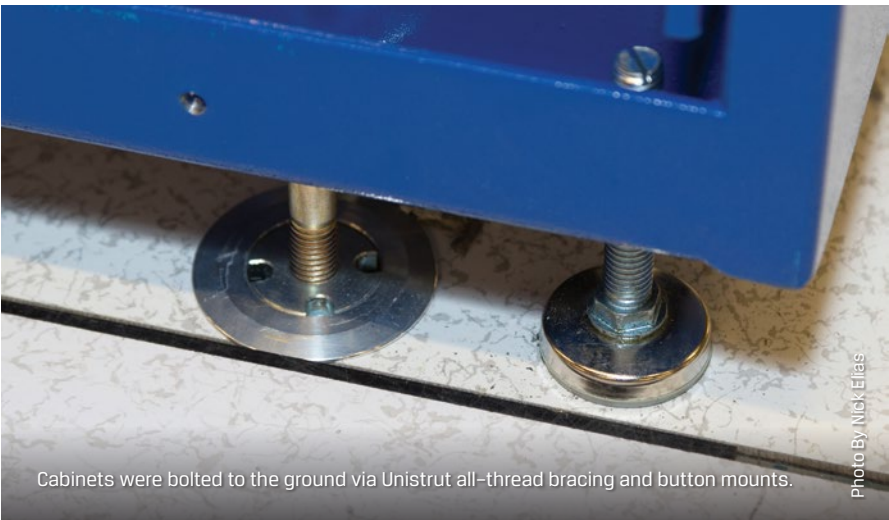
Photo By Nick Elias

BOX is one of the leading cloud-based storage, file sharing and collaboration providers, and maintains multiple sites in North America. CH Reynolds performs all Data Center work for BOX, including complete installations in Santa Clara, Los Angeles and Ashburn, VA.

CH Reynolds Data Division finished BOX's 3,500-sq.-ft. Data Center build-out in less than 30 days. This included cabling the main distribution area, the horizontal distribution area, and the equipment distribution area. The solution involved CAT 6A copper, OM4 and Single-mode

fiber for backbone and horizontal cabling. CH Reynolds used a Panduit connectivity solution for the network cabling system and Anixter as a distribution partner.

The Data Center's design included installation of cabinets, ladder racks, and seismic bracing in addition to a complete structured cabling system. With the fast-track nature of this job, the International Brotherhood of Electrical Workers (IBEW) Local 332 in San Jose played a critical role in supplying technicians for the project who were instrumental in its completion.



Cabinets were bolted to the ground via Unistrut all-thread bracing and button mounts.

Photo By Nick Elias



CH Reynolds built out seismic bracing for the entire data center, including 45-degree angle support to the ceiling throughout the entire grid system.

Photo By Nick Elias



The new BOX headquarters includes low voltage cabling and data drops that can support over 3,000 users

Photo By Nick Elias

"We excel at data center work like this," said Gary Slater, Data Superintendent for the CH Reynolds Data Division. "We use only the latest technology for the BOX projects. The data center is all in one area, so the environment is easy to manage, but the intense pace of the schedule can be a challenge with its time constraints. In this case we had less than 30 days to complete the project."

In BOX's Main Distribution Area (MDA) of the CoreSite co-location center, CH Reynolds installed routers, Core LAN switches, SAN switches, and the SAN storage arrays along with cabinets and supporting hardware. Additionally, this is where CH Reynolds connected BOX's space to the CoreSite's meet-me-room.

In the Horizontal Distribution Area (HDA), where the transition occurs from backbone to horizontal cabling, CH Reynolds deployed fiber and copper to

support the network. They also included installation of the active components, LAN, SAN, KVM switches. CH Reynolds placed OS2 fiber trunks and CAT 6A copper from the HDA to the MDA to provide the highest level of connectivity.

The cabinets were anchored with a quick connect system, so that each can be easily replaced. MPO fiber cable assemblies were installed, allowing for greater deployment flexibility. The MPO trunks feature 12 strands of glass so that instead of running 12 individual cables, technicians can run a single MPO cable and break it out into 8 port or 12 port cassettes or use the MPO connectors.

In the Equipment Distribution Area (EDA), which houses cabinets that hold computing and storage modules, CH Reynolds installed OM4 Multimode fiber MPO trunks and CAT 6A horizontal cabling terminated in high density patch panels.

CH REYNOLDS ELECTRIC PROJECT TEAM BOX DATA CENTER BUILD OUT

OWNER:
BOX, Inc, CoreSite Co-location; Santa Clara

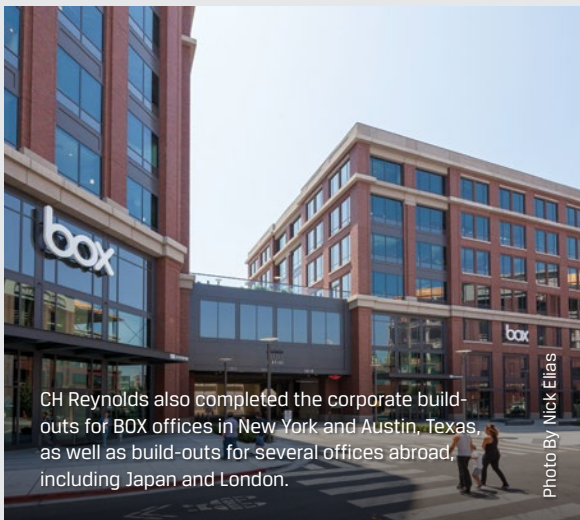
ELECTRICAL CONTRACTOR:
CH Reynolds Electric, Data Division; San Jose

CH REYNOLDS MANAGEMENT TEAM:
John Anderson, Sr. Vice President Data Division, RCDD;
Jason E. Bright, Sr. Vice President Operations

CH REYNOLDS PROJECT TEAM:
Gary Slater, Data Superintendent
Dan Stolpe, Project Engineer
Larry Duarte, Foreman

PROJECT TECHNICIANS:
International Brotherhood of Electrical Workers, Local 332, San Jose
Arnulfo Tamez, Installer;
Jonathan Kennedy, Installer;
Gus Arias, Installer;
Joseph Garcia, Installer;
Rocky Cao, Apprentice

CH Reynolds Completes Build-Out Of New Box Corporate Office In Redwood City



CH Reynolds also completed the corporate build-outs for BOX offices in New York and Austin, Texas, as well as build-outs for several offices abroad, including Japan and London.

Photo By Nick Elias

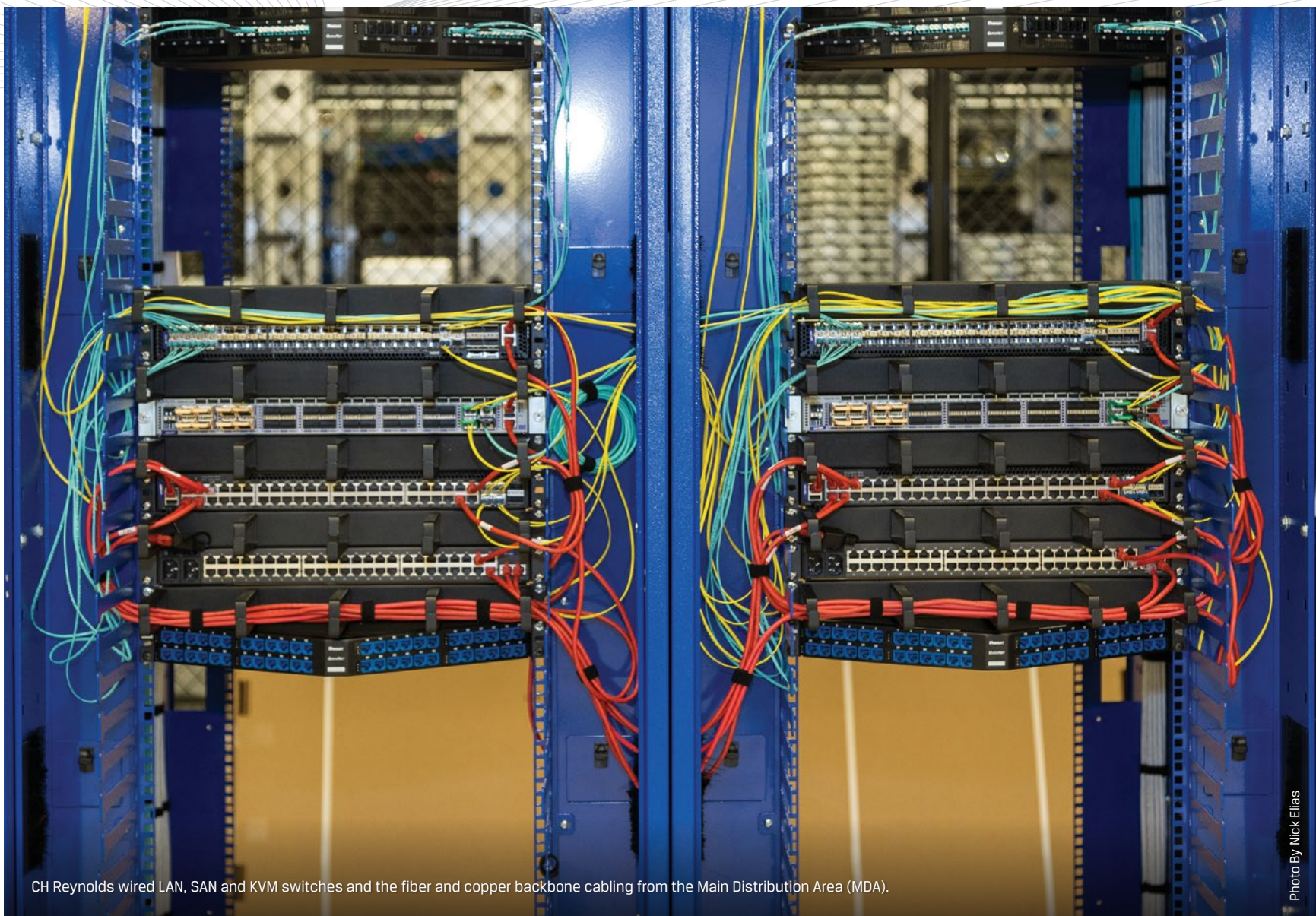
When BOX recently opened its new corporate headquarters in Redwood City, it called on CH Reynolds Electric to complete the cabling build-out.

The Data Division of CH Reynolds completed the structured cabling for BOX's downtown corporate center. The headquarters includes a two-building complex which covers eight floors.

The build-out of the new BOX headquarters includes low voltage

cabling and data drops that can support over 3,000 users. CH Reynolds also provides electrical maintenance and service work to the building.

In addition to completing the buildout for the new BOX corporate office in Redwood City, CH Reynolds also completed the corporate build-outs for BOX offices in New York and Austin, Texas, as well as build-outs for several offices abroad, including Japan and London.



Data Construction Electrical Contractor CH Reynolds Builds Out The New BOX Data Center In Santa Clara

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With California's newly implemented bracing laws for earthquakes, CH Reynolds built out seismic bracing for the entire data center, including 45-degree angle support to the ceiling throughout the entire grid system. Eight points of seismic bracing were added in either direction so that the cabinets and ladder racks do not sway, complying with the new California Zone 4 bracing laws. Cabinets are also bolted to the ground via Unistrut all-thread bracing and button mounts, which maintains appropriate support while allowing for some movement with the building.

The seismic bracing is a free-standing system, allowing the cabinets to be rolled in and out of the raised floor grid without needing to be there for initial installation. If a cabinet requires removal for whatever reason, it can be released and rolled back out, while a new one is rolled in.

BOX relies on CH Reynolds for its Data Center work throughout every step of the process. CH Reynolds ensures that BOX's data communications needs will be met or exceeded today, and will also serve their rapidly growing and evolving business cycles of the future.

For more information about CH Reynolds and its services visit www.chreynolds.com, or contact Don Chipley, Business Development, (donc@chreynolds.com) or call (408) 436-9280.

