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SOUND AND COMMUNICATIONS
of Northern California

THE VOICE

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VOLUME ONE

LATEST SOUND & COMMUNICATIONS TECHNOLOGY NEWS

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NORCAL VDV Sound & Communications–

Training and Experience Make the Difference

Most non-union VDV contractors don't participate in a formal training program

Contractors that employ non-union VDV workers, by contrast, usually never participate in a formal industry-based program. Some non-union workers receive as little as 40 hours of training.

To contact an IBEW/NECA union contractor, visit www.norcalvdv.org

Why should you hire an IBEW/NECA contractor to handle your VDV project?

The answer, says Chris Payne, Division Manager of Contra Costa Electric, is training, training, and training. "There is a higher bar set for union technicians in terms of training, education and expectation out in the field," he adds.

Customers that hire IBEW/NECA contractors are getting the best value, best quality, and best training out there, says Payne. "There are a lot of non-union companies that could do it for a nickel or a dollar less, and I think that a lot of clients have experienced saving a dime, but having it cost them a dollar down the road.

Current IBEW/NECA training requirements for apprentices include 3 years of classroom and laboratory training (450 hours), plus 4,800 hours of on the job training. If apprentices successfully graduate from the program, they become installers.

"The IBEW/NECA workforce has a 3-year apprenticeship training program that is very effective," says Payne. "The program not only offers three years of consistent schooling. It's coupled with hands-on work in the field, along with laboratory work inside the training center. You have classroom, laboratory, and on-site work, and that is the combination that makes it a far stronger program than most other places."

According to Nicole Graham, the IBEW/NECA Certification Program Coordinator, this training also contributes to a safer environment. "The union contractors' number one concern is safety–safety in the field for their employees and all parties involved. The jobs are not only completed more quickly and efficiently, but also with less safety-related accidents."

COURTESY OF FRANK GARCIA

COURTESY OF FRANK GARCIA

Apprentices in class at the Santa Clara Joint Apprentice Training Center learn the basic skills needed to become expert IBEW technicians of the future.

IBEW/NECA Contractors Help Fund Training

Participation in the three-year apprenticeship training program is mandatory for all IBEW/NECA signatory contractors, who contribute funds to the training program and oversee the program, along with educational association, usually a junior college.

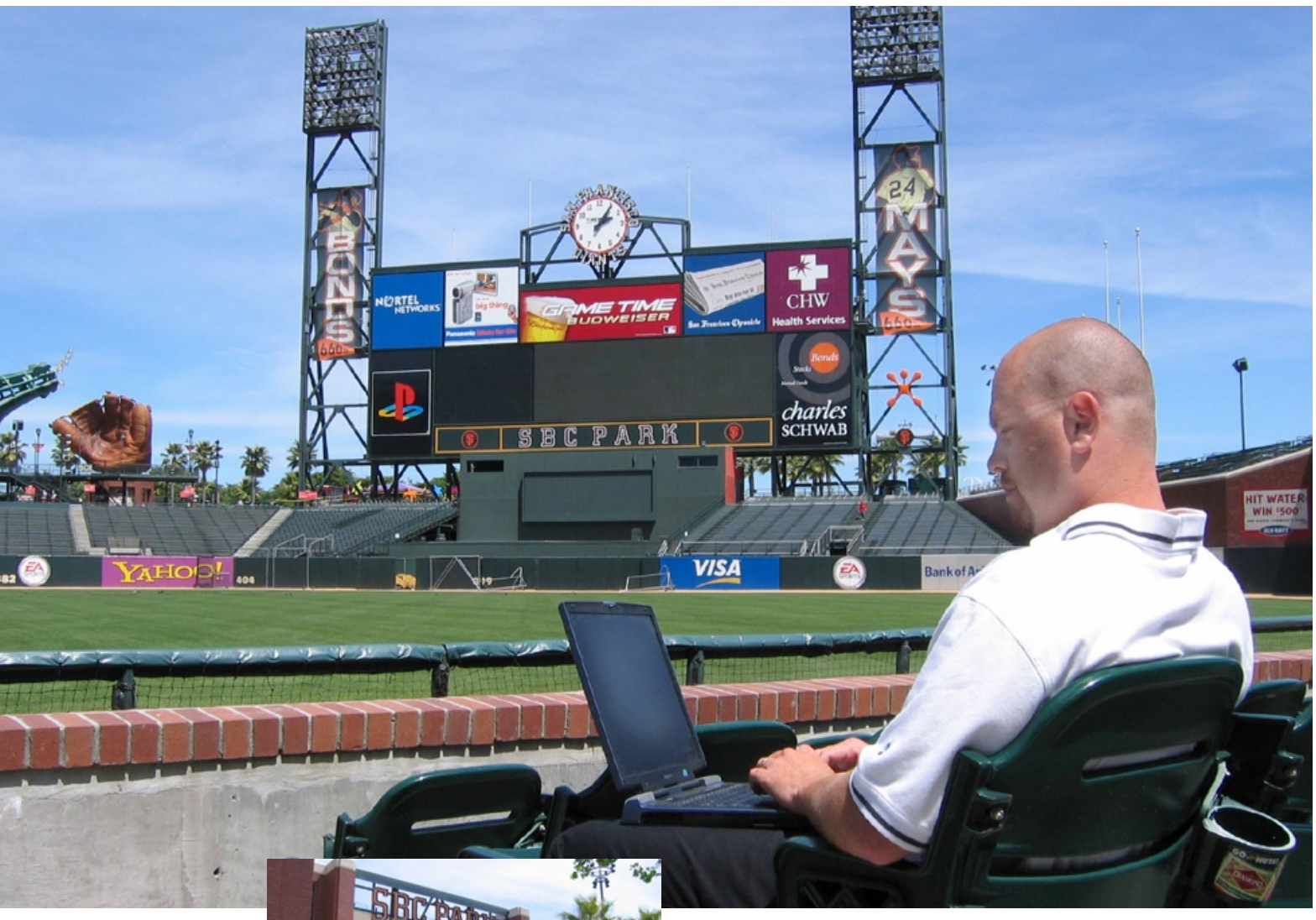
Payne adds that the depth of the training, the quality of the workmanship that gets produced, and the professionalism of the crews–including how they respond to the customer in critical environments–brings a full package to a customer. He says that a well-trained work force gives each contractor more options to serve the client.

"From any geographical area in Northern California, NECA/IBEW contractors have access to a significant amount of man power," says Payne. "This means we can go into any county, and in the

continued on page 7

A publication of the National Electrical Contractors Association and the International Brotherhood of Electrical Workers of Northern California.

From SBC Park to the Monterey Bay State-of-the-Art Communication Syst



Shane Brown of Semans Communications checks out the wireless system the company installed at SBC Park.

Most of the high-profile buildings in the Bay Area are wired by NORCAL VDV contractors and their IBEW technicians

Who transformed SBC Park into a Wi-Fi hotspot, making it the first 100% wireless sports facility in the world?

Who wired the San Jose Shark's new stadium and installed other state-of-the-art technology systems at HP Pavilion? Who rerouted and rewired the security and fire alarms systems to make Monterey Bay Aquarium, a popular destination point for hundreds of thousands of visitors each year, safer for crowds?

Who installed communication systems at the Northern California headquarters of such corporate giants as E-Bay, Microsoft, Cisco Systems, Yahoo, Oracle, and Sun Microsystems? The answer is simple–the communication systems wiring of all these icons was completed by a select group of electrical contractors--NORCAL VDV contractors–known for doing work that represents the best in the industry.

From the Asian Art Museum to the Oakland Coliseum, NORCAL VDV projects are prominently on display everywhere in the Bay Area–anywhere the best in telecommunications, training, and experience is demanded. Whether it's a museum, hotel, hospital, office building, school, destination spot or theater (see back cover), most of the high profile buildings in the Bay Area are wired by NORCAL VDV contractors and their IBEW technicians.

NORCAL VDV contractors represent NECA/IBEW partnerships in the sound and communications

arena, the area that encompasses technologies such as structured cabling, telecom, wireless, security systems, fire alarm systems, presentation systems, sound systems, access control and CCTV. Designing, engineering, installing, integrating and maintaining these systems is the work of local NECA contractors and IBEW trained and certified technicians.

Over 130 NORCAL VDV contractors work throughout Northern California **(for a list by county, zip, or specialty, go to www.norcalvdv.org.)** The projects they install meet guidelines adopted by BICSI (Building Industry Consulting Service International). The technicians who work on them are graduates of the curriculum of the NORCAL JATC (Northern California Joint Apprenticeship Training Committee), which promotes standardization and technical excellence through education.

Wi-Fi at SBC Park

The NECA/IBEW difference is apparent in some of the Bay Area's most high-profile facilities. When SBC and the San Francisco Giants wanted to make SBC Park the nation's first wireless sports stadium, they brought in Semans Communications of San Carlos, a NORCAL VDV contractor. Semans worked with technicians from IBEW Local 617 in San Mateo to complete the project.

With SBC Park's new wireless system, fans anywhere within the stadium (or outside around the border of the stadium) have access to the Internet, as long as they have a laptop, cell phone or PDA device with Internet access. Through the network, fans can receive player updates, real time statistics, and can even shop for hats and jerseys from their seats.

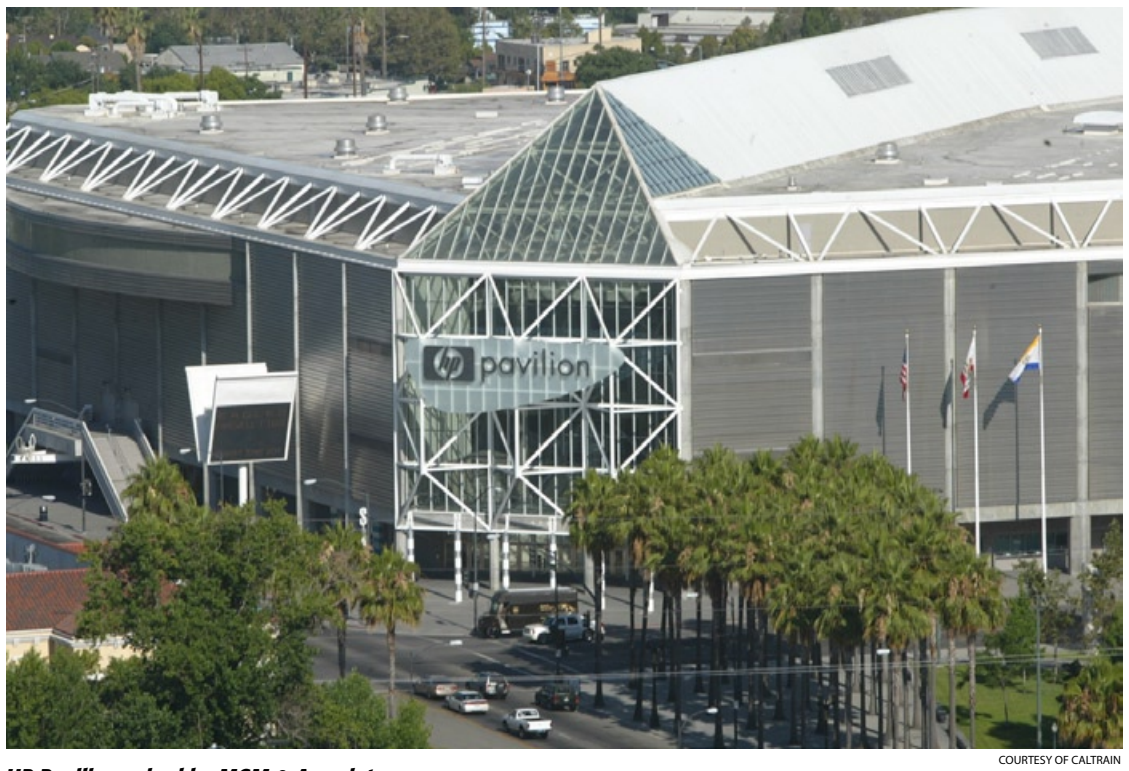
Semans provided Cat 5 cabling that reached from the patch panels out to each one of the respective wireless hot points, pulling about 10.5 miles of cable to complete the wireless project.

"We had to rely on the conduit placement to be in place for a pathway before we could get the cabling in there," said Shane Brown, Project Manager for

Semans Communication. "Getting everything done within the timeframe was the biggest challenge, because they needed to have things in place, and live and tested on the first day of spring training in the stadium."

The Giants, for their part, are very happy with the system. "This initiative has been a huge win for the Giants and our wirelessly-enabled fans, and has provided numerous benefits that we never could have imagined," said Bill

Aquarium, IBEW/NECA Contractors Install ems Throughout Northern California



COURTESY OF CALTRAIN

HP Pavilion, wired by MCM & Associates

Schlough, Vice President and CIO of the San Francisco Giants. "The service has been extremely stable, connection speed has exceeded all of our expectations, and support (on-site and remote) has been responsive and professional."

HP Pavilion Wired

Another Bay area sports facility, HP Pavilion, home to the San Jose Sharks, was wired by MCM & Associates of Mountain View. MCM's work included fiber installation, cabling upgrade, and A/V. IBEW Local 332 in San Jose supplied technicians for the project.

MCM installed a new fiber backbone in the stadium's infrastructure, and ran all new fiber to the scoreboard and to a new exterior sign. MCM also upgraded the cabling in the facility to bring it up to Cat 5 standards. In addition to installing new satellite dishes and receivers, MCM also added DMX controls to the signage. MCM provided the Pavilion with a turnkey cable record database, including installing a new software system so that the Pavilion staff could manage all the new cable.

"We faced numerous challenges," said Rudy Biscaino, General Manager of the Communications Division of MCM. "Access was a big one. We had to get riggers to get over to the scoreboard because of the height. We also had to remove a ton of cable in the cat walk area."

Monterey Bay Aquarium

When the Monterey Bay Aquarium recently decided to expand their facility, they called in two NORCAL contractors, Ceitronics of San Jose and Netversant of Milpitas to do the communications work. Ceitronics upgraded the facility's security, fire life safety and CCTV systems, while Netversant re-located the Aquarium's telephone room. Ceitronics upgraded the life safety system to a voice evacuation system, so that an evacuation alarm would go on throughout the building in case of an emergency.

Going live with the new security system upgrades had to be done overnight, when no visitors were at the Aquarium.

"We put intercepting cabling networks in place so when we shut down the Aquarium after the last visitor left at the end of the day, we knew where our intercept points were," said Joe Gann, general foreman for Ceitronics. "We disconnected, removed, and rerouted the cables, tied everything in, relocated all the equipment, brought it back online, retested everything and had it ready to go."

COURTESY OF SASCO

SASCO installed 2 million ft. of Cat 6 cabling at E-Bay's new campus

E-Bay

When one of the Bay Area's most successful Internet companies, E-Bay, built a new corporate North Campus, the company asked Sasco Electric, a NORCAL VDV electrical contractor in San Jose, to complete the sound and communications work. The total project included 250,000 square feet in 2 four-story office buildings, a conference center, and a 5,000 square foot data center.

Sasco installed the wireless, voice data, and cellular systems throughout the campus, and also wired the data center and the network operational center. Sasco also ran fiber and copper connections among the buildings to connect them. IBEW technicians from Local 332 worked with Sasco.

"The whole building is Cat 6," said Randy Garcia, Group President of Sasco's Data Division. "It was one of the first Cat 6 implementations that we've done. The voice data system was extensive, about 8,800 cables worth, or roughly two million feet of Cat 6 cable. We used fiber optics to connect the buildings, closets and data center. The cellular is a totally separate system that is shielded so that you can use a cell phone throughout the building and not lose the signal."

Ceitronics, Netversant, MCM, Sasco and Semans are only a few of the IBEW/NECA sound and communications contractors available in Northern California. Training and experience does make a difference in getting it right the first time.

How can I find a contractor?

Visit the Northern California Voice-Data-Video website at www.norcalvdv.org to view over 125 qualified contractors in the Sound and Communications industry. The large number of companies can be narrowed down to fit your specific needs by utilizing the search options, which are available alphabetically, by county, by specialty, and by zip code.

IMAGE COURTESY OF MONTEREY BAY AQUARIUM

Ceitronics and Netversant completed communications work for the newly expanded Monterey Bay Aquarium.

NorCal VDV Contractors Provide End

NECA-IBEW contractors design, install, integrate, and maintain all the information delivery systems that keep your building or office operating efficiently and cost effectively. These systems include fire/safety, security systems, door access control and camera surveillance, conference room audio-video, teledata, and computer networking. When these systems are integrated seamlessly with existing power and control systems, they help provide a work environment that promotes productivity, communication, and safety.

NECA-IBEW electrical contractors are uniquely qualified to install and maintain these systems–they and their workforce have received years of special training in each of the disciplines. This training can make a critical difference, because system technology evolves frequently and various systems must be properly integrated to avoid redundancy and error.

Every NECA-IBEW technician who installs or integrates an information delivery system project has met stringent training requirements. Each NECA-IBEW VDV technician has completed three years of rigorous classroom training, as well as on-the-job apprentice training. In addition, most technicians hold special certifications in one or more technical disciplines including hours of additional classroom work. Training requirements for non-union contractors, by contrast,

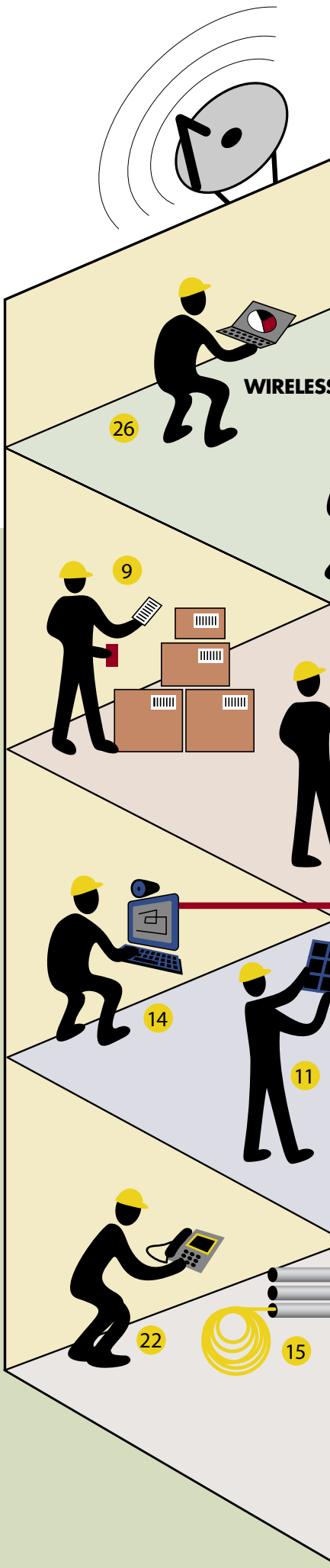
COURTESY OF HOME ELECTRIC

Services

Design & C.A.D.
Installations
Installation Management
Integration
Inspections
Maintenance

Specialties

IT Consulting
IT Services
Systems Integration and A/V
Network Cabling and Design
Fire/Life/Safety
Security Systems
Teledata
CCTV/Access Control
Wireless



IT Consulting

1 Consult on network design and optimum operating system software

2 Provide network architecture, plans and engineering

3 Project-manage the design and installation of IT infrastructure

IT Services

4 Connect PCs and workstations to the LAN/WAN and the Internet

5 Install network software and operating systems for PC workstations, including individual email; reboot systems

6 Provide managed services for IT systems, including network operations and system administration

7 Monitor and maintain customer network

8 Manage IT assets: barcode each PC, server, peripheral, etc., and maintain updated inventory

9 Pack computer workstation components in anti-static wrap for safe shipping to new location or floor

10 Relocate computer workstations from building to building

Systems Integration and A/V

11 Install public address systems

12 Install A/V and presentation devices for boardrooms, conference rooms and training centers

13 Install A/V and presentation device control systems

14 Install and connect videoconferencing systems

15 Install fiber optics

16 Install copper cabling

Network Cabling & Design

17 Pull cable for LAN/WAN networks

18 Install network server racks, servers and routers

19 Connect servers to LAN/WAN and the Internet

Fire/Life/Safety

20 Install campus-wide fire-life-safety systems, connect to control systems, and integrate with network

Security Systems

21 Install access/security devices including biometric scanners or card access systems, connect them to network

Teledata

22 Telephone system cabling and installation

CCTV/Access Control

23 Install closed-circuit television systems

24 Outside plant Infrastructure Cable Systems

Wireless

25 Install wireless network

VOICE DATA VIDEO
SOUND AND COMMUNICATIONS
of Northern California

-to-End Voice/Data/Video Solutions

are not standardized, and expertise can and does vary widely.

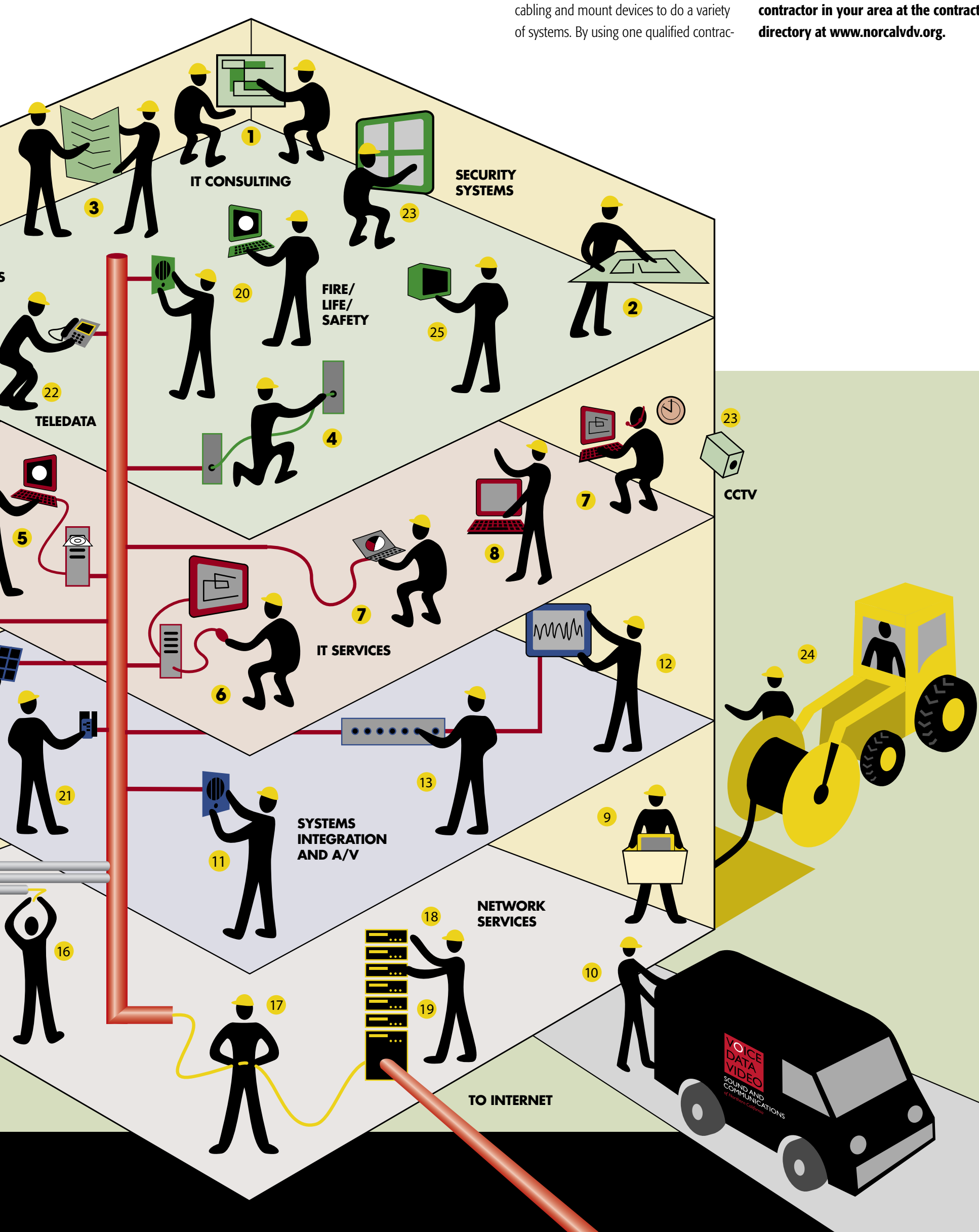
Many NECA-IBEW electrical contractors install all the VDV systems; others focus only on a few specialized systems, such as security and fire/life safety. Most properly trained contractors handle multiple disciplines. For the client, there are economies of scale and efficiency that are built in by using one qualified NECA-IBEW contractor.

With the trained work force of the NECA- IBEW, you have a composite profile of trained technicians that have expertise in fire alarm, access control, surveillance, A/V, fiber optics, etc. Most IBEW technicians at a senior level migrate to a specialty. By hiring a NECA-IBEW contractor, you have access to a resume pool of trained technicians with various expertise, who can work together to perform complex installation and integration when the job requires it.

Instead of having one team pull cable from point A to point B to support one system, and having another team come in to travel the same path to do another system, you can organize systems so that one NECA-IBEW contractor can pull in cabling and mount devices to do a variety of systems. By using one qualified contractor, you bring the overall cost on the project down and promote system compatibility.

Taking advantage of economies of scale is another benefit to using an IBEW/NECA contractor–if you look at the architecture of all the systems, it is likely that you can take advantage of systems components to make the systems more efficient or eliminate redundancy.

You can find a qualified NECA-IBEW contractor in your area at the contractor directory at www.norcalvdv.org.



New Protective Measures Fuel Security System Upgrades In Bay Area

Security systems are finding a red hot market in Northern California.

Facility managers and building owners are upgrading security systems at a record pace since 9/11, installing protective measures propelled by heightened security awareness. "Security upgrade is occurring everywhere," says Aaron Colton, President of Integrated Communication Systems (ICS) of San Jose, one of IBEW's signatory contractors. ICS recently designed a notification alert system for the Herbert C. Hoover Building, which covers 5 city blocks in Washington, D.C. The EVAC system is part of the Homeland Security Department's requirement that federal buildings have an internal mechanism to alert employees in case of an emergency event or terrorist attack.

"In the public domain, security for facilities like airports and libraries has changed dramatically," said Colton. "In the corporate world we are also seeing changes, such as more camera coverage of lobbies and entry areas into buildings."

Colton says that part of the upgrade for office buildings includes more installations that integrate alarms into an existing system such that alarms or access control entries create a prompt for CCTV camera surveillance call up.

"This technology has been around for a long time, but now we are seeing more cases with a true integration between card access system, alarm and camera call up," he said.

"You can now record and archive transaction history (door ingress, egress)—you can look back and know who came into the building and when. If, at a future date, you see something in your building which causes you concern, you can now look at a transaction history. That feature has always been there, but people are now paying more attention."

Colton says building owners or managers who decide to upgrade their existing systems need an access control system that can produce an output compatible with a CCTV surveillance camera.

In addition to CCTV and video surveillance, Colton says biometrics, or the use of fingerprint, hand or eye-retinal scanning devices, (see related story) is also a growing trend in Bay Area buildings.

"The U.S. security equipment market shows U.S. sales of security products and systems forecast to advance to 7.9% per annum through 2006 to $16.4 billion."

–Electrical Contractor Magazine, February 2004

New "Biometric" Security Technologies

Providing Access with the Lift of a Finger or the Blink of an Eye!

Soon, the eye will be the thing in security—or the finger, the hand image, or the shape of the face. With the new biometric security technology, all an employee needs to access the workplace is an eye, finger or hand. These technologies are expected to become the norm for corporate security systems within the next few years.

Initially developed in the mid-1970s, biometric devices have increased in capability and dropped in cost. The four most common biometric technologies, fingerprint scanners, hand geometry readers, face geometry scanners and retina or iris readers, are now becoming more affordable and technologically sophisticated. They can make entering a building easier than ever before for authorized workers and visitors.

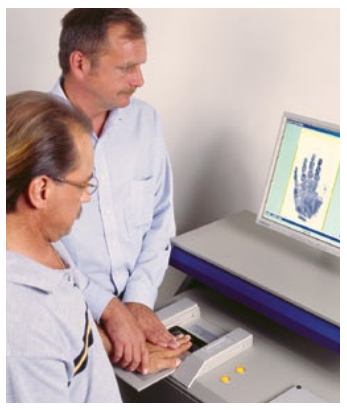
How biometrics works

Employees create an initial biometric finger, hand or eye scan when they join a company that uses biometric devices. The technology records an individual's unique characteristics and stores them as a pattern on a database, which is connected to a network by security software.

Then, every time workers want to open a door, they scan their fingerprint, hand, face or eye and wait just seconds while the system checks the database for verification and authorization.

COURTESY OF ALMEX LTD.

Fingerprint scanner
This is the most widely installed biometric system, popular with users because it's familiar and considered non-obtrusive. It examines an individual finger or thumb print.



COURTESY OF IDENTIX, INC.

Hand geometry readers
A reader with pegs guides the hand into position, and the whole hand and fingers are scanned in three dimensions.

COURTESY OF MIROS, A DIVISION OF ETRUE.COM, INC.

Face geometry scanners
These devices scan the overall contours and proportions of the face and compare the reading to stored data.

COURTESY OF LG ELECTRONICS

Eye scanners
These highly accurate readers measure vascular shapes on the retina inside the eye, or look at patterns on the iris. These patterns are more complex than a fingerprint. Eye scanners are generally reserved for government and high-security facilities.

How can I find a security systems contractor?

Briggs Electric Inc.
Contact: Greg Dye
Gregdye@briggselectric.com
5138 Metric Way
Carson City, NV 89706
(775) 887-9901

CaL Communication Service Co.
Contact: Randall J. Weber
randy@calcsc.com
525 Second St.
Rodeo, CA 94572
(510) 799-0300

Ceitronics
Contact: Ignacio del Rio
Ignacio_delRio@cei.com
550 Parrott St.
San Jose, CA 95112
(408) 452-5000
www.ceitronics.com

Cochran, Inc.
Contact: Kurt Dickerson
info@cochraninc.com
12500 Aurora Ave. North
Seattle, WA 98133
(206) 367-1900
www.cochraninc.com

Contra Costa Electric Inc

Contact: Neal Ratner
neal_ratner@emcorgroup.com
3208 Land Co Drive
Bakersfield, CA 93308
(661) 322-4036
www.ccelectric.com

Contact: Chris Payne
chris_payne@emcorgroup.com
825 Howe Road
Martinez, CA 94553
(925) 229-4250
www.ccelectric.com

Contact: Chris Payne
chris_payne@emcorgroup.com
364 14th St. Suite 400
Oakland, ca 94612
www.ccelectric.com

Contact: Matt Furrer
matt_furrer@emcorgroup.com
4277 W Richert #108
Fresno, CA 93277
(559) 271-3264
www.ccelectric.com

Eilbacher Electric
Contact: William Eilbacher
Lectrospec@aol.com
41794 Vargas Rd
Fremont, CA 94539
(510) 490-5530

The Facilities Group
Contact: Thomas Ward
Tward@facilitiesgroup-sf.com
400 Brannan St, Ste. 7
San Francisco, CA 94107
(415) 284-1500
www.facilitiesgroup-sf.com

Groseclose Electric
Company Inc.
Contact: George Yeager
Gyeager@redshift.com
231 Commission St
Salinas, CA 93901
(831) 424-2791

Idex Global Services
230 California St #600
San Francisco, ca 94111
(415) 249-3400
www.idexglobal.com

Integrated Communication Systems
1719 Little Orchard St.
San Jose, CA 95125
(408) 491-6000
www.ICS-Integration.com

McMillan Security Systems
Contact: Mike Schimm
1515 S Van Ness Ave
San Francisco, CA 94110

Netversant Northern California
Contact: Russell Hayslip
Rhayslip@netversant.com
1411 S Milpitas Blvd.
Milpitas, CA 95035
(408) 945-5700
www.netversant.com

Semans Communications Inc
Contact: Roland Valtierra
Email: Roland@semans.com
1300 Industrial Rd #15
San Carlos, CA 94070
(650) 591-1481
www.Semans.com

Steiny and Company Inc.
Email: Ssteiny@steinyco.com
PO Box 3008
Vallejo, CA 94590
www.steinyco.com

W Bradley Electric
Contact: Darrel Kirschner
90 Hill Rd.
Novato, CA 94945
(415) 898-1400

W Bradley Electric
Contact: Robert Bourdet
90 Hill Rd.
Novato, CA 94945
(415) 898-1400
www.wbeinc.com

Walker Comm Inc.
Contact: Gary and Donald Walker
Email: donaldw@walkercomm.com
521 Railroad Ave.
Fairfield, CA 94533
(707) 421-1300
www.walkercomm.com

Young Electric Co Inc
Contact: James Young
Email: Jpy@youngelec.com
3317 26th St.
San Francisco, CA 94110
(415) 649-3355
www.youngelec.com

To search over 125 qualified contractors by specialty, visit the Northern California Voice-Data-Video website at www.norcalvdv.org

Training Excellence *(Continued from page 1)*

union hall there, have access to man power nearby. We can also call out for workers trained and certified in specific manufacturer products, or trained and certified in security, for example."

Training requirements for IBEW/NECA workers (see chart below) are stringently regulated by the Joint Apprenticeship and Training Committee (JATC), which operates nine training facilities in Northern California where VDV technicians receive classroom and laboratory instruction. At the JATCS, technicians are trained in all different communication systems, from structured cabling to fire alarm systems to security systems.

Four of the NORCAL JATC facilities have fully equipped BICSI labs. (BICSI is a professional telecommunications association that helps to set standards in the industry, and offers certifications in the VDV area called RCDD or Registered Communications Distribution Designer).

Vince Cosentino, Regional Training Director of the Northern California Sound & Communication Joint Apprenticeship and Training Committee says about 300 students are currently in the program, with 79 instructors and staff. Class size varies from 8 to 20 students.

"The advantage of hiring union is to get a knowledgeable and dependable work force," says Cosentino.

How Do VDV Workers Learn, Maintain, & Upgrade Their Skills?

PROGRAM	NECA/IBEW	NON-UNION
Structured, performance-based classroom and on-the-job training	A 3 year program, depending on specialty, is the benchmark for all NECA-IBEW VDV workers	Most never participate in a formal industry-based program
VDV training for certification	480 hours in class and 4,800 hours on the job	Some workers receive as little as 40 hours of training
Skills upgrading for journeymen	Over 50,000 return to NJATC-sponsored classes annually	Reliable information not available
Training for managers	NJATC National Training Institute NECA Management Education Institute	Reliable information not available
Safety training	NECA Web-based learning Mandatory for apprentices OSHA Training: tens of thousands so far	Reliable information not available
Commitment to training	Over $90 million invested annually	Reliable information not available

Information courtesy of www.thequalityconnection.org

Where can I learn more?

Extensive information regarding the rapidly-changing VDV industry is available at www.norcalvdv.org. Special sections are available for customers, union contractors, IBEW members, and those interested in a career as a union technician. Other features include a contractor directory, an overview of the training program, a glossary of industry terms, an overview of available services, and an industry outlook.

Established in 2002, www.norcalvdv.org is sponsored by the Labor Management Cooperation Committee (LMCC) of Northern California. The website received a 2002 Crystal Award of Excellence from the Communicator Awards, an international competition that recognizes outstanding work in the communications field.

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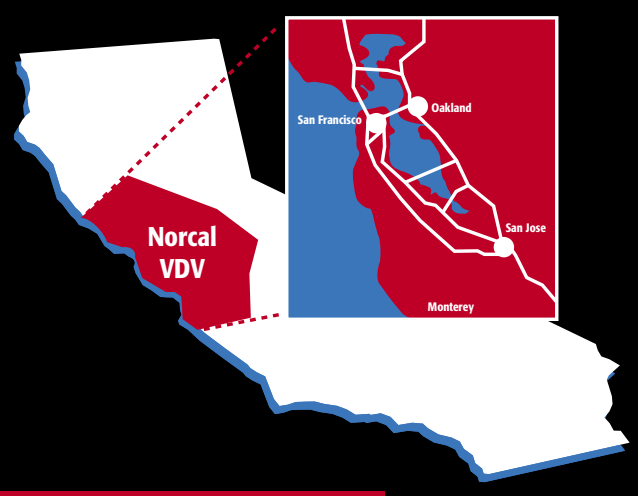

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