

# BUILDING & CONSTRUCTION

WEST

BUILDING A STRONGER REGION

## EXCELLENCE *at Every Level*

California West Communities is a boutique homebuilder delivering flexible floorplans with an attention to detail. *Page 28*

### BUILDING WASHINGTON

*John Korsmo Construction teams with LOTT Clean Water Alliance and Green River Community College in the Evergreen State.*

*Starting on Page 20*

### CALIFORNIA GREENIN'

*The Department of General Services is focused on LEED Gold.*

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# Finding Inspiration on Vacation

**Large-scale, multimillion-dollar** construction projects may not be as common now as they were pre-recession, particularly in the commercial and housing sectors, but you can still find them without looking too hard. Just go on vacation.

Trips to Los Angeles or Yellowstone National Park this summer can offer a first-hand look at how contractors are finding work in some well-traveled places. In the case of the City of Angels, early stages of one of the largest infrastructure projects in the city's history can be seen as soon as visitors arrive at Los Angeles International Airport.

At LAX, the foundation is being

poured on a \$1.1 billion modernization and expansion of the Tom Bradley International Terminal, which includes the construction of new concourses. Contractors Walsh Construction and Austin Commercial are joining forces to oversee the project. When completed in 2013, the airport will be able to accommodate larger, modern aircraft. The work won't affect air traffic there, so that flight to L.A. for the Hollywood vacation you've planned for months won't be canceled. *Building and Construction West* will feature this project in the future.

Over at Yellowstone, a visit to one of the popular park's central attractions is

now enhanced through a \$27 million, two-story visitor center welcoming tourists to Old Faithful (page 62). The finishing touches are now being put on the building, funded through a number of donations by some of the largest U.S. corporations. Contractor Swank Enterprises is seeking LEED Gold certification through the inclusion of a number of environmentally friendly features on this project.

The real work for contractors and others in the industry may begin when they return to the office after a well-deserved break, but inspiration, ideas and possible contracts can be out there next to the fun of a summer getaway. ☺

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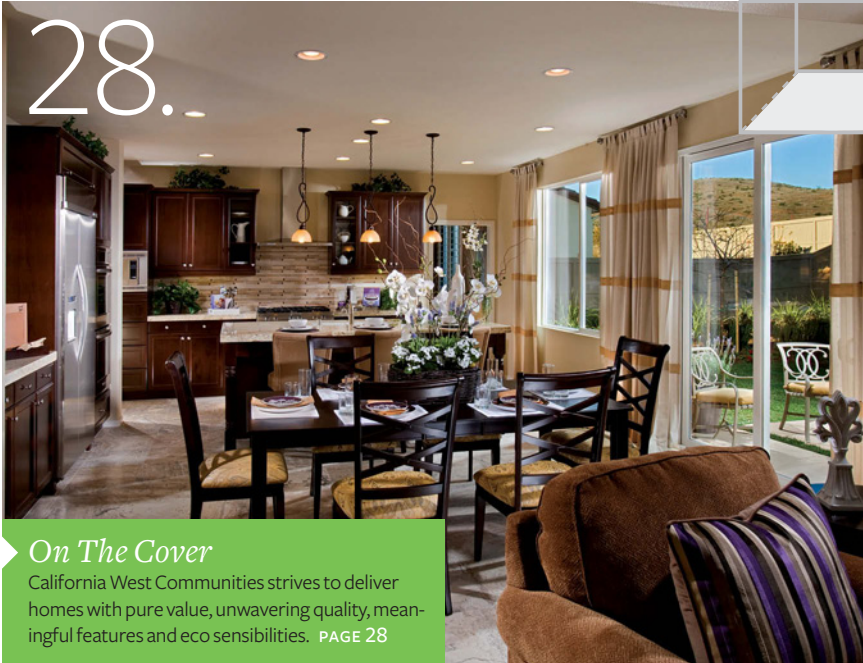


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# Best of the West

➤ The ABC wants Wyoming's construction dollars to be spent locally, a unique new apartment complex helps revitalize downtown Albuquerque, N.M., and Onvia's CEO is recognized for his entrepreneurial skills.

*"When government agencies award so many of these jobs to out-of-state firms, one has to ask, why should we buy local, when our government isn't?"*

## INDUSTRY CONCERNS

### Report Posits Loan Crisis Fix

A tax incentive for business owners that would avoid the looming commercial real estate loan crisis while creating 1.3 million jobs is detailed for the first time in a report released in June.

"This report is the first to illustrate how dramatic job creation through limited energy efficiency tax incentives can prevent a meltdown in the commercial real estate market," said Edward Mazria, CEO of Architecture 2030, a leading building sector energy research organization. "Without a swift plan from Congress, the commercial real estate (CRE) crisis could cripple the economic recovery, raise unemployment, and lead to scores of small business and community and regional bank failures."

Mazria is a co-author of the report, titled "The Imminent Commercial Real Estate Crisis and The CRE Solution." The report recommends a three-year, tiered tax incentive tied to specific energy reduction targets. CRE transactions have dropped 90 percent since 2007. Commercial property values have plummeted by more than 40 percent, and commercial vacancies rates continue to increase. By April 2010, the construction industry had lost more than 2 million jobs, with another 35,000 jobs lost in May, mostly in the commercial sector.

Congress can simultaneously address the looming CRE crisis and crippling construction unemployment through "The CRE Solution." This can be jump-started quickly by building upon the existing Energy Efficient Commercial Building Tax Deduction from \$1.80 per

Alex S. Palmer & Co. recently finished work on the new 220,000-square-foot FBI office building in Denver.



square foot to a range of \$3 to \$9 per square foot for new and existing commercial buildings meeting specific energy reduction targets.

For each \$6 billion of deferred CRE revenue, for example, "The CRE Solution" would generate \$73.4 billion in new private spending, \$15.9 billion in new federal tax revenue, and \$5.25 billion in state and local government tax revenue, according to the report findings.

The 14-page report can be viewed at [www.architecture2030.org](http://www.architecture2030.org).

### Wyoming Wants to Keep Construction Local

This spring, Casper, Wyo.-based Casper College awarded its Gateway Project to

an out-of-state firm, and the Casper Area Economic Development Association only short-listed companies from outside Wyoming for a local business incubator project. No surprise, the Associated Builders and Contractors (ABC) of Wyoming has a problem with what it sees as an "increasing trend" of government entities awarding contracts to out-of-state based firms.

"Too many major school, college and other publically funded projects are being contracted with companies that are not from Wyoming," said Josh Carnahan, ABC Wyoming president. "During these economic times, citizens look to the government to help re-build the economy, [and] awarding these projects to compa-





nies with little or no investment in our state does little to improve the long-term well being of our local economy.”

ABC of Wyoming is advocating a much more transparent, fair, open and competitive public process for selecting architects, engineers, contractors and subcontractors for public construction projects, in particular when dealing with independent consultants or project managers who have little or no experience building in Wyoming or relationships with Wyoming’s construction industry.

The association says it also is committed to tightening up the definition and enforcement of resident business in preference statutes, as well as expanding preference to alternative delivery methods. Loopholes in the statute allow certain businesses with insignificant investment in the state be eligible to become a resident business/contractor. People must reside in Wyoming one full year before they are eligible for a resident hunting or fishing license, but a resident Limited Liability Company only requires an address and a driver’s license.

“When resident architects are used, it is more likely resident general contractors and engineers will be used, and it is more likely resident subcontractors will be used,” Carnahan says. “This all trickles down and feeds our local economy, over and over. A lot of folks are calling on Wyoming citizens to buy local, but when government agencies, colleges, and a university award so many of these jobs to out-of-state firms, one has to ask, why should we buy local, when our government isn’t?”

## PUBLIC PROJECTS

**Denver FBI Headquarters Complete**  
Alex S. Palmer & Co. recently completed its work on Denver’s new Federal Bureau of Investigation building.

The company, based in Nashville, is the developer/owner of the 220,000-square-foot office building and 120,000-square-foot adjoining parking garage.

Located on a 10-acre campus that formerly served as home to Denver

Stapleton Airport, the building incorporates several green construction and maintenance elements and was built to LEED specifications. The glass building also features two large private courtyards and was designed to provide stunning views of the Rocky Mountains.

“This building is a state-of-the-art facility that will allow us to more effectively and efficiently carry out our responsibilities,” said James H. Davis, FBI special agent in charge. “We are delighted to become part of the Stapleton community and we appreciate the warm reception we’ve received.”

The FBI entered into a 20-year lease with Alex S. Palmer & Co. for the Class-A office space, and construction began in late 2008. “We are proud of this project and honored to partner with the General Services Administration again,” said Alex Palmer, president of Alex S. Palmer & Co. “We have created a building that will serve the FBI well.”

## Supercomputing in Cheyenne

On June 15, Cheyenne LEADS, the Cheyenne-Laramie County Corporation for Economic Development, celebrated the groundbreaking of the construction of the National Center for Atmospheric Research (NCAR) Supercomputing Center, which will house one of the world’s fastest supercomputers for scientific research. Located on 24 acres west of Cheyenne, Wyo., the \$70 million facility will provide advanced computing services to scientists across the nation in a range of disciplines. Construction is scheduled for completion next summer with research starting early 2012.

Several factors contributed to the team choosing Cheyenne:

- » Cool, dry climate at an altitude of 6,200 feet eliminates the need for huge air-conditioning systems;
- » Strategic location at the crossroads of I-80 and I-25, at major transportation and communication hubs, including two major railroads;

» Access to national fiber optic networks along the I-80 corridor – a major electronic switching center with many high-speed data services;

» Abundant power provided by Cheyenne Light, Fuel and Power;

» Genuine enthusiasm and commitment of Cheyenne officials; and

» Wyoming Legislature appropriating \$20 million toward the project.

The supercomputing center, a project managed by the University Corporation for Atmospheric Research (UCAR), will house a 1-1.5 petaflop supercomputer. One petaflop equals one quadrillion computer operations per second.

“We could get more computing power, almost double as much, and a faster start and larger facility in Cheyenne than any other site,” said Rick Anthes, UCAR president. “And that means you can almost immediately increase the computing power, which supports research in our atmospheric science community.”

“The NCAR facility puts southeast Wyoming on the map in the world of computer technology,” said Randy Bruns, CEO of LEADS. “Several technology companies have expressed interest in building computer data storage centers in Cheyenne because of the new supercomputer. The center solidifies Cheyenne’s position as the northern anchor of the Front Range of the Rocky Mountains and an ideal location for future business expansion in the energy and geo science industries.”

NCAR, whose headquarters will continue in Boulder, Co., is federally funded through the National Science







Foundation (NSF). The Cheyenne center is a partnership among NCAR, Cheyenne LEADS, NSF, the University of Wyoming, the state of Wyoming, the Wyoming Business Council, and Cheyenne Light, Fuel and Power.

Cheyenne LEADS is a nonprofit organization serving as the economic development entity for Cheyenne and Laramie County. The organization assists non-retail businesses in all phases of relocation or expansion in the area with a primary focus on job creation that brings new wealth into the community.

### PRIVATE PROJECTS

#### Complex a First for New Mexico

New Mexico's first micro-efficiency apartment complex recently opened in downtown Albuquerque.

Downtown@700-2nd, a 72-unit \$13 million green affordable rental community, is home to formerly homeless persons, those with special needs, retirees and low-wage workers, as well as market-rate residents.

Located on a former brownfield at Lomas and 2nd Street, the award-winning infill project is an urban work force model that will provide on-site support services to residents and access to jobs and transportation.

Opened in March and now 90 percent full, the complex provides fully furnished units to residents and has a cafe, community garden and on-site space for service providers.

"Not only is Downtown@700-2nd an important part of the revitalization of downtown Albuquerque, it is providing the services and access residents need to improve their lives," says Lt. Governor Diane Denish, chairwoman of the Mortgage Finance Authority (MFA) board, one of the project's major funders.

The MFA awarded the project more than \$8 million with Enterprise Community Investment (Enterprise) providing the equity through the Low-Income Housing Tax Credit (LIHTC) program. Additional funding for the



property included approximately \$400,000 by the Tax Credit Assistance Program, part of the American Recovery and Reinvestment Act of 2009.

Land for Downtown@700-2nd was donated by the city of Albuquerque, which also provided \$2.6 million in funding through the Workforce Housing Trust Fund. The city trust funds were leveraged to bring in an additional \$10 million in capital from outside Albuquerque to put in the downtown core, approximately 70 percent of that from private equity.

#### Boosting Idaho's Wind Power Portfolio

In late June, GE Energy Financial Services, a unit of General Electric, made an equity investment in the Idaho Wind Partners project, which is Idaho's largest wind power project at this time. The almost half billion dollar portfolio of 11 wind farms under construction was developed by Exergy Development Group of Helena, Mont.

The GE unit will own a majority equity interest in the Idaho Wind Partners project. Exergy Development Group will own a minority interest along with man-

ager and operator Reunion Power. The wind farms will sell all of their power to Idaho Power Co. under 20-year agreements. Once completed, the portfolio is expected to qualify for the Federal Treasury Grant program designed to stimulate renewable energy projects.

"Through our investment in Idaho's largest wind power portfolio, GE Energy Financial Services is putting millions of dollars to work to bring jobs and clean energy to Idaho and help the country meet growing demand for domestic, renewable sources of energy," said Kevin Walsh, managing director and head of Power and Renewable Energy at GE Energy Financial Services.

Granite Falls, Minn.-based Fagen Inc. initiated project construction in June and expects to complete the wind farms located on farmland clustered near Hagerman and Burley, Idaho, by year's end. Using 122 of GE's 1.5-megawatt turbines, these wind farms will have the capacity to generate 183 megawatts, enough to power approximately 39,700 average Idaho homes and – according to EPA methodology – avoid





approximately 331,000 short tons a year in greenhouse gas emissions, which is the equivalent of taking about 57,000 cars off the road. In addition to supplying the wind turbines, GE will provide seven years of operational and maintenance services to the project.

The project is expected to create approximately 175 construction jobs as well as permanent employment for operations and ongoing seasonal maintenance requirements. In addition to those employed directly, a wind project of this size would typically support the equivalent of more than 2,200 full-time jobs in the United States for one year – about half of which would be in-state – and create 25 permanent jobs, based on a National Renewable Energy Laboratory model.

“We are calling on Congress to enact a national renewable energy standard which would help stimulate growth of more wind, solar and other cleaner energy projects across the United States,” Walsh said. “A renewable energy standard would help provide long-term certainty the energy industry and financial community need to ensure continued expansion of renewable energy throughout the country.”

### **Evergreen Hospital Will Build**

#### **Redmond Emergency Department**

Evergreen Hospital Medical Center of Kirkland, Wash., plans to open a Redmond Emergency Department (ED). Hospital leaders say the new ED will give area residents improved access to round-the-clock healthcare. The ED will be part of a new Evergreen medical facility being built in the Bella Bottega shopping center in downtown Redmond. The plans include a comprehensive lab and advanced diagnostic imaging. It will also merge Evergreen’s two Redmond-based primary care practices - Evergreen Medical Group Redmond and Family Medicine of Redmond. The \$15 million project broke ground in May and will open in 2011.

“We have a responsibility to provide the highest standard of healthcare to the

rapidly growing Eastside communities,” said Al De Young, chair of the Evergreen Board of Commissioners. “Enhancing medical services is a major part of our commitment to offer exceptional care, close to home.”

The three-level, 48,000 square-foot facility will include 16 emergency rooms and 36 primary care rooms. The owner and site developer is Gary Merlino Construction and the general contractor is Sellen Construction; both companies are based in Seattle.

“We’ve been a community partner and health care provider for the past 38 years,” De Young said. “The most important thing is to continue providing exceptional care to the community.”

### **AWARDS AND ACQUISITIONS**

#### **Onvia CEO Gets Entrepreneurial Nod**

Mike Pickett, CEO of Onvia Inc. of Seattle, is a finalist for the Ernst & Young Entrepreneur Of The Year 2010 Award in the Pacific Northwest. According to Ernst & Young, the awards program recognizes entrepreneurs who demonstrate extraordinary success in the areas of innovation, financial performance and personal commitment to their businesses and communities.

Onvia is the leader in gBusiness solutions and the creator of Recovery.org, a private-sector initiative to give businesses transparency into recovery project spending. Onvia is an authority on government spending and says it has the largest and most comprehensive database serving industries such as architecture and engineering, construction, IT/telecom, business consulting services, operations and maintenance and transportation.

“I am honored to be nominated and recognized for Onvia’s innovation and performance,” Pickett said. “Serving this company and community has been gratifying, especially during a period in which business and government are so closely intertwined. I appreciate the opportunity to be in the company of other such influential business leaders.”

The Ernst & Young Entrepreneur Of The Year awards program celebrates its 24th anniversary this year. The program has expanded to recognize business leaders in over 135 cities in 50 countries throughout the world. Regional award recipients are eligible for consideration for the Ernst & Young LLP Entrepreneur Of The Year national program. Award recipients in several national categories, as well as the overall national Ernst & Young Entrepreneur Of The Year award recipient, will be announced at the annual awards gala in Palm Springs, Calif., on Nov. 13, 2010.

### **WESCO Adds Alaskan Capabilities**

Pittsburgh-based WESCO International Inc., a leading provider of electrical and industrial MRO products, construction materials and advanced integrated supply procurement outsourcing services, acquired the business of Potelcom Supply Inc. of Anchorage, Alaska. Potelcom, a single branch operation with annual sales of approximately \$25 million, supports the utility, industrial and government markets in Alaska.

“This acquisition strengthens and expands our utility, industrial and government market positions in Alaska, as well as broadens our supplier lines,” stated Stephen A. Van Oss, senior vice president and COO of WESCO. “Combining Potelcom’s cabling expertise, with WESCO’s industrial MRO and construction expertise, and data communication product offerings provides a complete solution for our customers in Alaska. The Potelcom organization is well regarded in the Alaskan marketplace and we are pleased to welcome them as part of WESCO. The acquisition should be immediately accretive to earnings.”

Potelcom’s President Gary Erber added, “Our association with WESCO provides growth opportunities for our employees and additional resources and programs for customers. We are pleased to become a member of WESCO and to continue to serve our base of customers in Alaska under the Potelcom banner.”









# Know the Advantages

➤ Creating a free flow of information in your workplace can give your business a leg up in the marketplace and ensure a number of positive changes in-house.

There's an old saying that what people don't tell you is more powerful than anything they do tell you. Recent decades have brought us information systems that produce voluminous reports, which, unfortunately, then sit on shelves or are used only by accountants to file tax returns. What is missing in many companies is a two-way street where information flows between management and employees. Each side withholds from the other critical information that could make both groups and the organization much more effective and productive.

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## Employees Deserve Credit

Employees need information to do their jobs. First, they need to see the big picture of the enterprise and how their work contributes to the achievement of company goals. Managers often underestimate employees' intelligence and their ability to understand the context of their work. They set a deadline for employees without telling them how meeting it impacts the entire project, or the ability to get repeat business from the same customer. As a result, employees aren't particularly motivated and may feel like the manager is just picking on them or driving them too hard for no good reason.

Next, employees need to know what's expected of them in terms of individual and team performance. What rewards can they expect for meeting or exceed-

ing expectations, and what are the consequences of underperformance? In the absence of accurate, candid and timely information, employees speculate or make the wrong decisions based on assumptions.

Rumor mills get started because people don't have the truth on which to form accurate views and take the correct actions. Such misleading information distracts employees from their work and causes morale problems.

When management does not share information with employees, employees reciprocate by withholding information, too. For example, someone makes a mistake or gets behind schedule, but is afraid to tell the supervisor. Then, by the time the problem is discovered, it has become much more difficult to correct. Timelines and budgets are not met, and customers become unhappy.

On the flipside, employees who see an opportunity for cost reduction won't bring it to management's attention in an environment that doesn't encourage information-sharing. They think their ideas are unwelcome or fear being perceived as a "corporate do-gooder" by coworkers.

Either way, the company is missing out on actionable information. Owners and managers don't know what they need to know right now to stay on track.

## The Circle of Information

Owners and managers need three types of information:

1. Real-time, actionable, accurate, complete information on costs, particularly labor and materials. This is the most critical information required. While good

accounting and scorekeeping are indispensable, elaborate accounting systems have limited value if only accountants understand the data and only use it to file tax returns and compliance reports. This problem is exacerbated in large companies whose complex financial accounting systems produce volumes that nobody reads.

A typical profit and loss statement, for example, may show a logical pattern for an accountant, but it doesn't paint a picture for owners or managers so they can run the show. Why is there no money left at the end of the day to put in the bank when the trucks return from the work sites? Don't look at the profit and loss statement to find the answer. It says nothing about time, cost and materials, and doesn't show cause and effect.

Management accounting systems are somewhat more effective for decision-making than financial accounting systems. Even then, however, the reports produced will have no value if input is inaccurate.

2. Real-time, accurate information on project progress, including immediate intelligence on problems and mistakes. One of the biggest mistakes contractors make is to track their labor with an end-of-the-week labor report. On Friday, no one can remember what particular tasks they executed on Monday between 8 and 9 a.m. or between 2 and 3 p.m.

Again, remember that information is a two-way street. If management wants information on the progress of projects, then employees need to know what they are expected to accomplish by the end of each day. Moreover, they need to feel welcome to share progress updates, good or bad.

3. Information on the external environment so companies can be proactive rather than reactive. External information includes macroeconomic trends as well as trends in customer interest. What do customers really want today?

External information meets internal information when customers sign up for



services. Everything the company does for the customer from here on out begins with the exchange of accurate information between customer and contractor. What does the customer expect and what did the company agree to do? Once that's established, it has to be translated into clear, actionable information for employees so they can fully understand what's expected and work accordingly. This loops back around as employees communicate progress on the project each day until the job is complete. Finally, customer satisfaction reports close the circle.

Companies that don't have access to information or don't use the information to their advantage will eventually fail. At best, they will fall behind any competitors who are effectively setting goals and communicating them, rewarding employees for attaining those goals and holding them accountable for not meeting the targets.

They will have lackluster performance and good employees will either quit or stay and go through the motions.

### Let's Talk

Communication is essential to the exchange of information and a prerequisite to building a strong team. Poor communication leads to incomplete, inaccurate and misleading information.

Sometimes companies rely heavily on data from information systems and forget personal communication. A healthy daily dialog has to occur among managers and between management and employees. Talk to employees and tell them what the expectations are for daily or hourly time frames. Weekly expectations are not enough because by the time management knows a weekly target was not met, they're already out of the ballgame.

Establish a scoring system that immediately shows whether the work is on schedule and budget or off track. If employees don't complete the scheduled tasks by the end of the day, for example, they need a vehicle to communicate the lack of progress and explain why the target was missed. If management knows expectations were too high or materials

arrived damaged, they can be proactive about avoiding those circumstances in the future. If they don't know what caused the problem, it's likely to repeat itself on the next job.

In addition to regular, candid communication, an incentive plan also can tell employees that what they do matters. If they complete a job on time and on budget, using only the materials on which the bid was based, reward them. If they exceed expectations, pay a little more. Assuming the bid was prepared properly, estimating the right time and materials, the job should be profitable and therefore the company can afford to reward employees. If workers miss the target even though the bid was realistic, reduce the next incentive. The most effective incentive plans are informed by customer satisfaction ratings. At the very least, expect customers to write a letter of satisfaction at the end of a job. Better yet, have them answer satisfaction questions on a weekly basis.

### Play to Win

Everyone in the organization needs access to information. It's the only way for employees to perform effectively and productively, and the only way for management to know if progress is sufficient to meet established budgets and time frames.

To be valuable, information has to be actionable and real-time – hourly or daily, not weekly or monthly. Imagine a world in which sports teams play in secret with no audience and a complete information blackout. A week or so later, fans could visit a team website where they would see the final score, but nothing else. Soon there would be no more fans and no more teams. ☹

*Al Bachman is consulting services director with ABS. Located in Deerfield, Ill., ABS and its related companies provide comprehensive business consulting services and business valuation services to companies in the United States and Canada. For further information, call 877-269-0821 or visit [www.abs-us.net](http://www.abs-us.net).*





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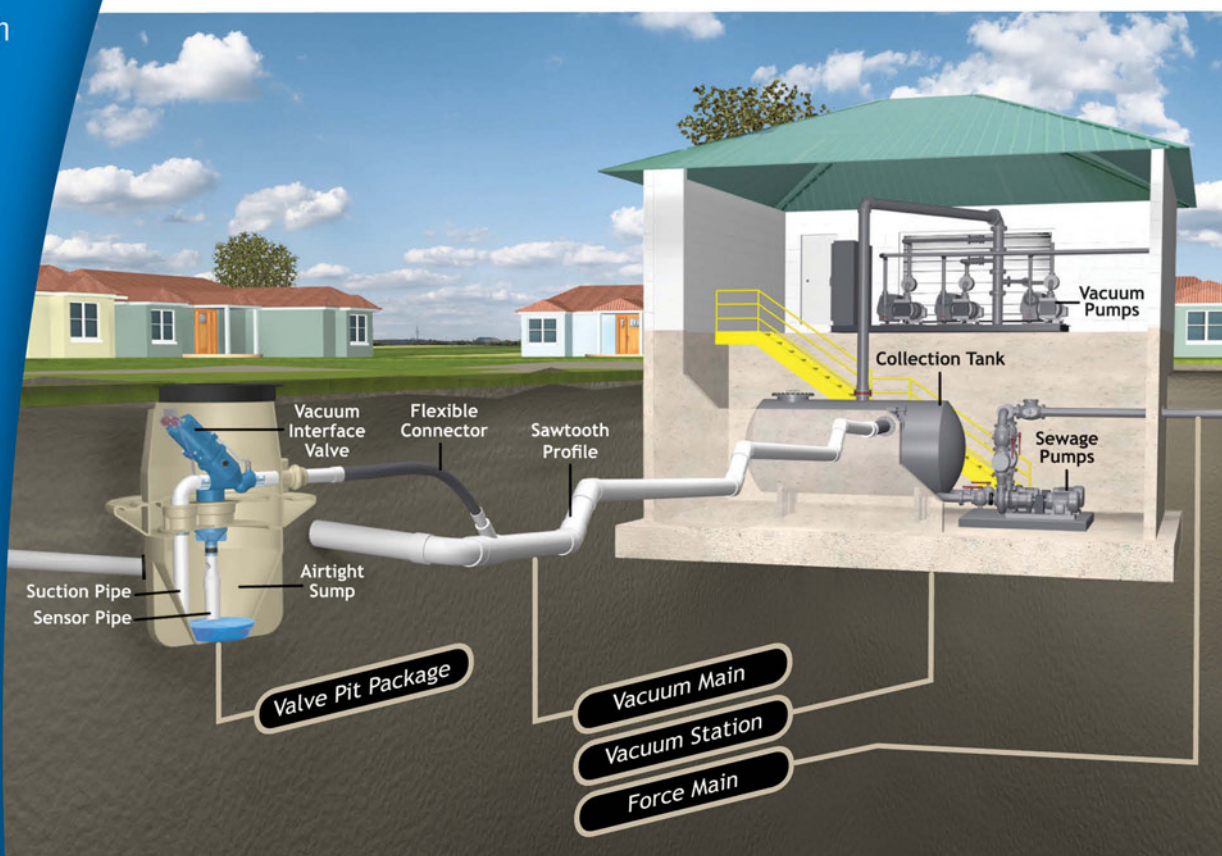
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The EPDM roofing system at Pixar Animation Studios in Emeryville, Calif., helps keep reduce the structures' energy use.

Photo: Firestone Building Products ©2010

## Energy-Efficient Roofs: It's Not Black vs. White

**You've heard it before:** The three most important words in real estate are location, location, location. You may not have known that same rule applies to construction, especially when attempting to build an energy-efficient building. Where you are makes a huge difference in how you build, from the foundation to the roof.

.....

In fact, in recent years, the focus on producing greater energy efficiency in commercial construction has shifted to the roof. Thanks to unstable fuel prices, growing concerns over global warming and an increased interest in responsible

➤ When trying to go green with your commercial roofing system, don't think about black vs. white roofs. Focus more on your location and the benefits of insulation.

building practices, building owners, architects and the professionals hired to construct or renovate commercial buildings need to create and install energy-efficient roof systems.

Obviously, energy-efficient roof systems require energy-efficient building materials. It's at this seemingly simple point that things have gotten very compli-

cated. Regulatory bodies and local and state governments have gotten into the act, developing and passing rules and laws designed to require greater energy performance from buildings and reduce the strains on the environment.

All well and good, except the emphasis in this area has been on "cool roofing," which is usually defined as utilizing light-





colored materials such as thermoplastic polyolefin (TPO) and polyvinyl chloride (PVC) to reflect sunlight and solar energy away from a building and keep it cooler.

Numerous studies have indeed determined that, under some circumstances, a building's air-conditioning-related energy consumption can be reduced through the use of reflective roofing. These studies, along with "enthusiastic" marketing efforts of the manufacturers of TPO and PVC products and the well-meaning desires of many activists and regulators to reduce energy consumption, have helped create a perception within the roofing industry that reflectivity is the best option in all cases.

This perception has been advanced by the ongoing activity of independent organizations and government agencies that promote reflective roofing without consideration of insulation or climate zone. In LEED, for example, one point is awarded to any building that utilizes a reflective roof system, regardless of its location. While not required for LEED certification, reflective roofing is certainly promoted, and often used by designers, as a way to easily garner one more elusive point.

Those designers may have to face an uncomfortable truth: in striving to achieve LEED certification, they are actually creating a roof system that is less likely to achieve energy efficiency, depending on the geographic location.

### Where Are You?

It's time for reality to intrude. In most cases, more energy is expended to heat a building than to cool it. For example, Table 7.4 of the 2007 "Buildings Energy Data Book," published by the U.S. Department of Energy (DOE), outlines energy use intensity in commercial building types, comparing heating and cooling as a percentage of total energy consumed. The average results show that heating accounts for 29 percent of the energy consumed within a building, while cooling totals only 6 percent. The statistics are even more compelling when broken into

building segments, such as healthcare and educational facilities, which feature 55 to 10 percent, and 33 to 5 percent, heating-to-cooling ratios, respectively.

These numbers indicate that the move toward reflective roofing in many building types may be unwarranted and counterproductive to the goal of minimizing overall energy consumption. This is especially true in regions such as the Pacific Northwest. In fact, the energy savings produced by white roofs are most often found in warmer, southern locales. In other parts of the country, other roof products will actually produce better energy-saving results.

### Cooling vs. Heating

When attempting to evaluate what type of system to develop, construction professionals should consider a simple fact: do you use more energy to heat buildings or cool them in your region?

An easy way to determine this is to analyze the amount of cooling degree days (CDD) and heating degree days (HDD) found in the region. CDD reflects the amount of energy needed to cool a home and HDD indicates the amount needed to heat a home.

For example, Portland, Ore., produced between 350 and 614 CDD annually from 2000 to 2008. It had between 3,811 and 4,665 HDD during that same period. According to the National Oceanic and Atmospheric Administration, Seattle had an average of 171 CDD from 1971 to 2000, and 4,797 HDD in the same period.

This leads to a simple question: Why is there such an emphasis on "cool roofing" when reducing energy usage to heat a building is the real priority?

To help reduce heating-related energy demands, which are greater than air-conditioning demands in northern regions, dark-colored materials such as ethylene propylene diene monomer (EPDM) single-ply membranes are most often beneficial. Dark roofing materials absorb heat and transfer exterior solar energy into a building, causing interior temperatures to rise, helping to alleviate the demands

placed on heating systems.

The DOE, in conjunction with the Oak Ridge National Laboratory, has developed a cool roof calculator to help consultants, architects, contractors and building owners determine the most efficient and cost-effective roof system for any given project. The calculator simulates building energy consumption based on the type of roofing membrane and amount of insulation installed.

In most instances, dark-colored membranes will prove to be more energy efficient than light-colored materials for projects located in cooler climates. This is especially true when aged reflectivity values are entered into the software since reflectivity values decline over the first three years and then remain relatively stable for the remainder of a roof's life.

Additionally, installing the appropriate amount of insulation is a key factor in quality roof system design. A superior option for any low-sloped roofing – white or black – is to utilize two layers of fully adhered insulation, minimizing the effect of thermal escape at the joints of the insulation and through the fasteners, resulting in a more efficient assembly.

One other option is the ballasted roof system, the oldest and most time-tested single-ply roofing system available. In May 2008, a joint study by the DOE and EPDM Roofing Association showed ballasted systems can save as much energy as a reflective roof. The cool-roof benefits of ballasted systems make them an ideal alternative to the growing number of reflective roof systems being installed in cities where HDD outnumber CDD by a more than five-to-one ratio.

The path forward is clear. The first step in the right direction is to understand the specific conditions in your location. From there, you can make the other necessary decisions to create a roof system that will produce energy savings now and well into the future. ☉

*George Evanko is director of communications for the EPDM Roofing Association. Visit [www.epdmroofs.org](http://www.epdmroofs.org) to learn more.*



# A Responsible Bid?

➤ With more public/private partnership projects going live, owners must find the “lowest responsible bidder.” But how do you determine who is responsible?



With the launching of the Public/Private Investment Program (PPIP) as part of the federal government’s stimulus plan, the proliferation of such public/private partnerships, and the need to plug financing holes with public funds on projects that in the past were exclusively privately funded, has created many new pitfalls for the unwary developer/owner.

One of the more unique aspects of publicly funded projects is the selection of contractors. In the private realm, an owner/developer has considerable flexibility as to whom they wish to hire as a contractor. The public sector has more stringent and codified rules.

For example, with few exceptions, multi-part bidding is not required in the private sector. In addition, absent a strong public relations necessity to the contrary, paying prevailing wages, complying with Davis-Bacon Act requirements, minority business and women business enterprise requirements, and various “Buy American” and other purchasing restrictions would not, in most cases, be programs that are voluntarily followed by private contractors.

However, the rules change when public dollars are involved, causing the owner/developer to incur extra costs and jump through additional hoops in order to ensure that dedicated funds and grants are not revoked due to the breach of a governmental requirement.

## What to Consider

In many jurisdictions, one requirement to receive public dollars is bidding of contracts to multiple parties. Upon receipt of the bids from those multiple parties, the owner/developer is obligated to select the “lowest responsible bidder” for the work. But what exactly does “lowest responsible bidder” mean? How





“responsible” is defined is a critical issue.

The Public Contract Code section 2001 says a “responsible bidder” is one “who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the public works contract.” What may an owner/developer look for when evaluating the lowest responsible bid?

The following are some questions that should be answered to the owner/developer’s satisfaction when assessing this:

» **Has the contractor ever performed a project of this type or magnitude?**

Assume a contractor has performed cement pouring work, so it bids on a cityscaping project. A cityscape may include landscaping, lighting installation, signage and exterior façade work, in addition to concrete pouring. The contractor may be exceptional at large-scale concrete jobs, but that does not mean it could handle the other work, thereby disqualifying it as a responsible bidder.

» **Is the contractor licensed?** If so, does the contractor’s license cover the type of work to be performed per the bid?

» **Is the contractor debarred from performing public works projects?** Perhaps for violating prevailing wage or apprenticeship requirements?

» **Are the contractor’s bonds legally adequate?** Has the contractor had any issues obtaining payment and/or performance bonds? Are the bonds it plans to procure from a reputable bonding agency (e.g. domestic or international)?

» **Are the bids fully responsive?** Simply being responsive does not mean that the bid is responsible. For example, if a job provides for a certain paint type and brand, and the contractor bids a similar, less expensive brand, that may be responsive but not responsible. The color of the paint may be the same, but the quality may not be similar. Bidding alternative specs – which may have artificially lowered the contract price and made the contractor the lowest bidder – doesn’t make the bid responsible.

### Federal and State Authority

The Federal Acquisition Regulations provide additional considerations for assessing the responsibility of contractors. To obtain a federal contract, a contractor must, among other things, (a) have adequate financial resources to perform the contract; (b) be able to comply with the required schedule; (c) have a satisfactory performance record; (d) have a satisfactory record of integrity and business ethics; (e) have the necessary organization, experience, accounting and operational controls and technical skills, or the ability to obtain them; (f) have the necessary production, construction and technical equipment and facilities or the ability to obtain them; and (g) be otherwise qualified and eligible to receive an award under applicable laws and regulations.

Contracts involving public funds at the state level are commonly subject to lowest responsible bidder requirements as well. Many jurisdictions have adopted procurement statutes and regulations that require adequacy considerations similar to those at the federal level.

In Texas, for example, state agencies must make procurements based on the best value for the state. Although the price of a vendor’s goods or services is the most important consideration, agencies also must consider the vendor’s past performance, financial resources, experience or demonstrated capability and responsibility and the vendor’s ability to provide reliable support.

In other states, the requirement has been interpreted similarly to vest state agencies with significant latitude in awarding contracts to vendors who are not the lowest bidder. In California, a public works contract must be awarded to the low bidder unless that bidder is found to be “not qualified to do the particular work under consideration.”

### Contractor Consideration

Of course, being the lowest responsible bidder and demonstrating that fact are two separate matters. To do so, contrac-

tors will need to ensure compliance with the above requirements and remain particularly cognizant of whether their bid is responsive and accurate.

For example, if contractors determine that specs in the request for proposals cannot be correct, they must contact the owner/developer and confirm that the specs are correct. If the contractor still believes the specs are incorrect or that the specs required are deficient, the contractor must specifically state the deficiency and why it is deficient rather than simply giving a non-responsive bid. The contractor must also ensure that it bids all material portions of the request for proposals. Carelessness may equate to a bid that is not responsible.

### Fiduciary Duties

In all events, the reasons for the requirement of responsible bidding must be kept in mind. Where public funds are involved, the grantee has a fiduciary duty to the public to spend those funds wisely and appropriately. This means not only that the funds are spent most economically but that they are also spent efficiently. For example, the use of cheap Chinese drywall may have been the most sensible material economically, but cheap certainly does not equate with best – and definitely does not equate to litigation-free work. The more efficient – and responsible – approach would have been to look at the quality of the drywall and purchase the most durable product.

Most important to the contractor and the owner/developer is that both parties ensure that where public funds are involved, each party use extra caution in ensuring that all requirements are met including the selection of the lowest responsible bidder. ●

*Matthew Weinstein is a member and R. David Walker is an associate in the real estate practice group at Cozen O'Connor. For more information, call 215-665-2000 or e-mail them at [matthewweinstein@cozen.com](mailto:matthewweinstein@cozen.com) or [rdwalker@cozen.com](mailto:rdwalker@cozen.com).*



# Not Just a Paycheck

► By focusing on creating value in your business, you can produce the greatest cash flow possible.

*Treat your business as the valuable, growing asset it can be. Invest in it regularly and your business will grow.*

**Do you think of your business** only as the source of your paycheck and a piggy bank for personal expenses? If so, you are short-changing yourself. To retire as wealthy as possible, change your thinking.

Your business is not just a source of cash; it is a storehouse of value. Instead of focusing on how much cash you can take out, focus on improving the value of your business. You will increase the value of what may be your most valuable asset, but you might also find your paychecks get bigger in the process.

## Learn From 401(k) Accounts

Think of your business as an investment account. Every dollar you take out is a dollar that will no longer grow for the future. Every dollar you leave in can grow and generate more growth. This compounding effect results in even more wealth in the future.

It is amazing to see how much wealth an employee who is making a relatively modest income can accumulate if they contribute regularly to an investment account, such as a 401(k). Someone who begins investing when they are young and continues to invest regularly can accumulate a large sum. Those who don't invest regularly or who borrow against their 401(k) to use the money for discretionary purchases wind up with much less.







Investing in your business works the same way. Like a 401(k), investments made earlier have more time to grow. Every dollar you spend today rather than reinvesting in your business is an opportunity that is lost forever.

The tax impact can make the difference even larger. If you take income from your business, depending on how it is taken, you might pay taxes at ordinary tax rates. However, if instead of taking the money out, you leave it in to help grow the business, it might receive more favorable capital gains treatments when you sell, leaving you with even more after tax.

### Invest in Tangible Assets

I have consulted with many businesses where routine maintenance and investment in new equipment was not a priority. The reason often given is lack of funds. However, when I delve into cash flow I discover that the owner is taking a very generous salary and distributions. Over time, the business suffers and is no longer able to sustain the owner's cash flow needs. The owner is forced to adjust his lifestyle to accommodate the reduced cash flow. Sometimes, he even loses his business.

Successful owners realize that they have to maintain their investment. Rather than take cash from the business to buy a bigger house or join a second country club, they reinvest in it to fund growth and maintain the business' assets. Eventually, the investment pays off and the business generates even more cash flow. They are then able to take generous distributions from the business. And when they sell, their payoff is substantial.

### Invest in the Management Team

In order to increase the value of your business, invest in a solid management team. A buyer is likely to pay more for a business with a solid management team that is capable of running it in the owner's absence than for one that is dependent on the owner for day-to-day operations.

Invest in hiring and developing a management team that can run the business

without you. Not only can this increase the value of your business, but it can increase your flexibility. Once you have a solid management team in place you might choose to spend less time on your business and be able to do so with confidence that its value will not suffer.

Alternatively, you might choose to stay fully involved and grow the business more rapidly, resulting in even greater current income and a higher value should you decide to sell.

### Invest in Employees

Good employees make a good business. In most businesses the customers see the employees more than the owner or management. Invest in employees who will represent you well. Quality employees are also necessary to produce a quality product. Do employees work haphazardly or are they motivated to do their best? Do they do a job that is "good enough" or are they driven to produce a high-quality job? Investing in hiring and training the best employees will pay off in better quality work and more repeat customers.

One manufacturer in an industry with high turnover and who used low-skill laborers paid a premium at the end of the month to each employee who was on time every day and had no unscheduled absences. The result was a work force that was on time every day and was there when needed. Turnover was also below the industry standard, which reduced hiring and training costs. The investment in the employees returned dividends in jobs completed on time and satisfied clients. However, you can't invest in employees if you are taking excess distributions or salary for yourself.

### Invest in Technology

The right technology can improve efficiency and customer satisfaction. Technology has changed considerably in most manufacturing industries. Are your operations up to date? Even in some industries where the basic process has changed little, technology has

changed how things are done. For example, the process of heavy duty metal rolling has changed little over forty or more years. However, the controls on the machines have changed. Keeping your technology up to date is a wise investment. Not only can it improve efficiency and cash flow, but it can result in higher price when you sell your business.

Technology needs to be up to date in all areas of your business. Do your employees have the tools to provide outstanding customer service? A good phone and messaging system can make it easier for clients to reach you and your managers, resulting in more satisfaction and increased sales. A customer information system can supply what employees need to respond quickly.

### Invest in Information

A good management information system can help across all areas of your business. It can help your manufacturing managers see where improvements can be made. A management information system can show your engineers where costs can be designed out of products. It can show your production department how to schedule and route jobs more efficiently. Information systems can show your material managers how to control inventory more effectively. As bidding becomes more competitive, having the ability to know your true margins is more critical to your salespeople than ever. But, you cannot invest in your business if you are taking out its cash flow.

If you want your business to be as valuable as possible – and to produce the greatest cash flow for you – do not think of it as a paycheck. Treat it as the valuable, growing asset it can be. Invest in it regularly and your business will grow just as your employees' 401(k) accounts grow. ☺

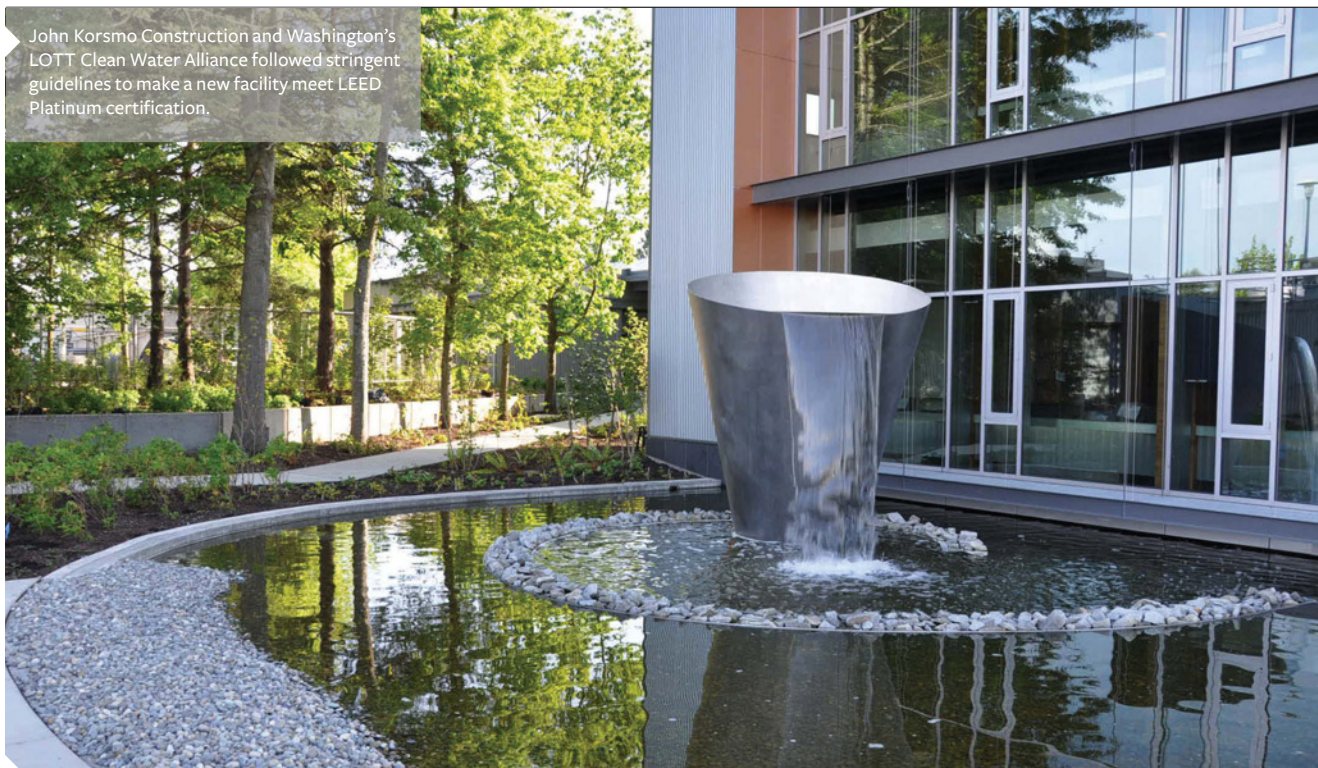
**Patrick F. McNally**, MBA, CPA, ABV, CFF is partner in charge, corporate finance consulting, for Blackman Kallick in Chicago. Contact him at 312-980-2934 or [pmcnally@blackmankallick.com](mailto:pmcnally@blackmankallick.com).

# Platinum Delivery

**+ LOTT Clean Water Alliance and John Korsmo Construction join forces to help revitalize the East Bay area of Olympia, Wash.** *By Brian Salgado*

*“Designing and building for LEED Platinum standards takes a heck of a commitment from the designer, owner and contractor.”*

*> Eric Hielema, senior engineer for LOTT Clean Water Alliance*



## John Korsmo Construction – LOTT Clean Water Alliance

[www.korsmo.com](http://www.korsmo.com)

**Scope:** New 24,817-square-foot facility and renovation of existing 7,666-square-foot structure

**Project cost:** \$13.5 million

**Location:** Olympia, Wash.

**Employees on site at peak:** 80

**> When it comes to LEED construction,** John Korsmo Construction has the personnel and experience necessary to successfully track and construct a building to achieve LEED Certification. The LOTT Clean Water Alliance – which stands for the cities of Lacey, Olympia, Tumwater and Thurston County – realized this when it came time to select a contractor to construct its LEED

Platinum expansion project in Olympia, Wash.

“LOTT has some clear goals that come from our board of directors as part of our mission – to protect public health and the environment by cleaning and restoring water for our communities,” says Eric Hielema, senior engineer for the LOTT Clean Water Alliance. “It was important for this building to demonstrate sustainable practices and environmental sensitivity. Designing and building for LEED Platinum standards takes a heck of a commitment from the designer, owner and contractor, and Korsmo was completely committed to LEED from the very beginning.”

The scope of work for the \$13.5 million

project included the renovation of the existing administrative and laboratory building and the ground-up construction of a new four-story Regional Services Center.

The existing building – which occupies 7,666 square feet, was completely renovated to include a much larger laboratory, and resulted in the relocation of the existing offices. The new structure, which occupies 24,817 square feet, will house the relocated offices, offices for other staff that had been located off-site in leased space, an emergency operations center, boardroom, and an education center with interpretive exhibits and a classroom. The project broke ground in February 2009 and was completed in June 2010.



## LEED Design

According to Project Engineer Chris Deusen, the Miller|Hull Partnership LLP – the architects for this project – designed the building and site to achieve the credits necessary for LEED Platinum certification. For instance, the building utilizes reused timbers for ceiling planks and walls from a warehouse that was demolished on an adjoining parcel to make way for other future LOTT expansion and East Bay redevelopment. The planks were re-sawn, oiled and stored until needed for the project.

“Utilizing the salvaged and remilled timbers from the warehouse that was demolished on the adjacent property not only reuses material resources, but adds warmth to the building and brings a piece of East Bay history into the project and gives it new life, which is one of the underlying principals of sustainable design,” says Scott Wolf, principal with Miller|Hull.

The construction of the building used many other recycled and renewable source products to achieve LEED credits including cork flooring, recycled rubber, Plyboo and palm wood finish lumber as well as recycled steel and concrete materials. Existing concrete screen walls were removed, stored and reconfigured to fit the new parking lot layout, which also helped with the LEED certification.

Due to an extremely high water table, a type of pile driving process called grout driven piles was used. The piles required no drilling or soil removal, which in the end saved the project more than \$400,000. This pile system utilized a steel sleeve that was driven to approximately half the burial depth then the steel boot attached to the sleeve was driven to refusal, about 100 feet. After the proper depth was reached, grout was continuously pumped into the pile as the driver head was being removed, filling the pile completely with fresh grout. A full-length rebar cage was then installed into the fresh grout. After the grout reached its design strength, standard pile caps and the foundation of the building were built.



“One of the challenges of this type of pile process is the pile driver and its support equipment are very large and with the small footprint of this building, the planning and coordination of layout was critical. In addition, the weight of the equipment and unstable soils required additional steps to be taken to support the equipment,” Site Superintendent Brian Isaksen says.

Along with tracking LEED credits for the owner, John Korsmo Construction worked hard to manage costs whenever possible. Eric Hielema, LOTT Clean Alliance senior engineer, says John Korsmo Construction saved the owner approximately \$60,000 by eliminating a 4-foot-deep concrete duct for connecting utilities in the new and existing building.

“In the wastewater industry, we like to have clear demarcation of utilities,” Hielema says. “In this case, there is not a whole lot of usefulness for the utility duct, and Korsmo pointed that out. It saved us money by not installing the duct.”

John Korsmo Construction also installed a complicated mechanical system throughout the building that utilizes low-pressure heat loops that run from the plant methane cogeneration, reclaimed water and heat recovery system. Many other new systems have been tied into the

## LOTTs of Possibilities

The expansion of the existing structure and the ground-up construction of a new building for LOTT Clean Water Alliance is part of a redevelopment program focused on 14 acres of Port of Olympia’s neighboring East Bay property, according to LOTT. The program includes the construction of LOTT’s facilities, as well as a new Hands On Children’s Museum and a future mixed-use development, which may include a destination hotel, retail shop and restaurants.

LOTT says the partnership between LOTT, the city of Olympia, Hands On Children’s Museum and the Port of Olympia has created an opportunity to develop a series of dynamic projects that will energize the East Bay area. The organization says the focal point of the East Bay Redevelopment is a public plaza to be located between the Hands On Children’s Museum and the LOTT Education Center. The plaza has been designed as a meeting space for visitors to each of those destinations, according to LOTT, complete with an extended reclaimed water feature and interpretive elements that teach about the interconnectedness of water resources.



reclaimed water system including the new water fountain and pond, the backup system for flushing the toilets, and the entire site irrigation system. ☀

# A Learning Experience

✚ John Korsmo Construction shows how to best minimize weather delays through its sequencing of the Salish Hall project in Auburn, Wash.

*"Even if there is a different design system or approach here or there, it's all about the planning."*

*> Mike Campeau, project manager*



The materials and processes used to build the new Salish Hall are helping the structure earn LEED Silver certification.

## John Korsmo Construction — Green River Community College's Salish Hall

**Project cost:** \$16.1 million

**Location:** Auburn, Wash.

**Scope:** 80,000-square-foot facility to consolidate resources on campus

**Employees on site:** 50

➤ **Green River Community College's** philosophy to "construct and maintain facilities that incorporate quality, sustainable design elements, enhance the GRCC experience, and effectively use space for all campus functions" is clearly demonstrated on the Salish Hall project, which has been designed to achieve LEED Silver certification through the U.S. Green Building Council.

John Korsmo Construction is the general contractor for the Green River Community College's Salish Hall project. The new 80,000-square-foot building will replace the campus' existing health sciences, social sciences and business and industry buildings. The \$16.1 million project broke ground in July 2009 and is expected to be completed in January 2011.

John Korsmo Construction is approximately 70 percent complete with the exterior masonry and the interior steel framing was completed in June 2010, according to Green River.

Mike Campeau, project manager for John Korsmo Construction, says the biggest challenge for his company is build-

ing on a job site located on a fully operational campus.

"Campus was fully operational during the course of constructing the new Salish Hall," Campeau says. "The logistics of getting materials and people to the job site is difficult."

John Korsmo Construction implemented haul routes and traffic control plans well before breaking ground, according to Campeau. The company also has had materials delivered around the campus' schedule — for instance, concrete was delivered at 5 a.m. and poured around 7 a.m. to avoid peak student traffic.

The layout of the 60-year-old campus forced John Korsmo Construction to create a haul route between parking lots





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## FOCUS

"Throughout my experience in the electrical industry it became clear to me that the biggest impediment to customer service was the lack of follow through on commitments made to clients."

When Matt Blackburn founded Lighthouse Electrical Group in 2004, he made one promise to himself. "To follow through on every commitment, job or service performed for any customer."

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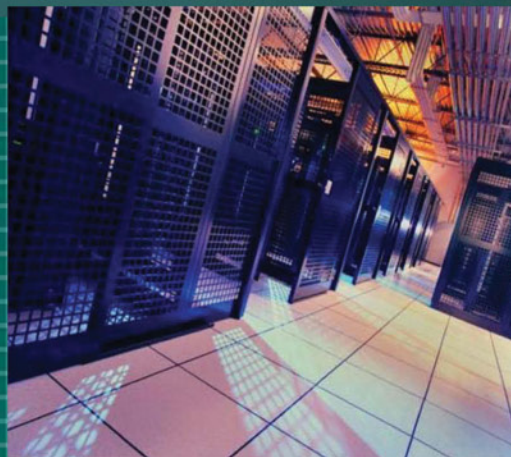
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"Whether it's a courtesy call to follow up with a customer or the simple act of following through on our commitment to finish a job, do it well and on time, I have worked hard to make Lighthouse Electrical Group a place where follow through is paramount. Our customers expect it, my team and I deliver it."

*Matt Blackburn ~ Owner*

This top down focus on delivering a quality product outlines the value in partnering with Lighthouse Electrical Group on any project. With over 40 years combined experience in project management, our customers can look forward to a project **Driven** by an aggressive schedule, **Strategically** aligned for maximum efficiency, and a **Diligent** approach to deliver a product we can be proud of.



*"Some of the building products incorporated into the project required us to rethink our construction sequencing. Protecting from weather in Washington has been difficult. This way, we managed to mitigate any kind of weather delays, plus we're taking advantage of the nice days."*

to deliver 50-foot steel beams right through the campus. "Parking on this campus is spread out everywhere," he says. "The lanes are super narrow."

### Rain Game

The climate in Washington state is notorious for its nonstop deluges of rain, and regional construction players are well aware of this fact. The potential for rain has forced John Korsmo Construction to come up with creative sequencing for one of the architectural features of Salish Hall.

Campeau says the hall will feature pre-finished exposed wood decking on part of the underside of the roof. Traditionally, this decking would be installed after the roof itself.

"However, due to the construction sequencing, we actually completed the installation of the pre-finished wood decking prior to installation of the roof membrane, which made the decking susceptible to inclement the weather and required JKC to protect the decking until the roof system was completed," he notes.

"Some of the building products incorporated into the project required us to rethink our construction sequencing," Campeau continues. "Protecting from weather in Washington has been difficult. This way, we managed to mitigate any kind of weather delays, plus we're taking advantage of the nice days."

A rain screen system will prevent water from intruding the exterior. The exterior walls have an entirely separate cladding

All of the steel used to build the new Salish Hall — 825 tons — is made from recycled materials.



that is built off the face of the exterior. Campeau likens it to having two exteriors. He notes this type of exterior construction has grown in popularity throughout the state in the past 10 to 15 years.

### LEED points

Green River Community College is aiming for LEED Silver certification for Salish Hall. Campeau says the decision to use steel construction had a great deal to do with the LEED certification because all 825 tons of steel used on the project is recycled material.

"Most of the LEED points are derived on design side; that's one of the reasons for designing a steel building," he says. "There are huge points for recycled material content, including the metal framing, so we're earning a lot of points from using those products."

So far, construction of Salish Hall has been relatively smooth because of the amount of planning that goes into these types of projects, Campeau says. "Even if there is a different design system or

### Korsmo Knows

If any contractor knows how to plan for education facilities, it's John Korsmo Construction. The company — founded in 1948 and headquartered in Tacoma, Wash. — has completed countless education projects throughout its history, ranging from K-12 to higher education.



approach here or there, it's all about the planning," he adds.

### Generations of Success

Since 1948, John Korsmo says it has focused on building premium, quality commercial projects. The company says its dedication to craftsmanship and its pride in customer service are family values that continue to guide the family owned and operated business.

"As a second-generation family business, we continue to strive for partnerships with our customers that exceed their expectations," the company says. "Building a positive experience and a lasting relationship is our goal." 🌱





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# Project Recovery

*"We expect the best and won't accept anything less."*  
*> Keith Cole, project manager*

**+ Finishing a high school building project in 24 months is the challenge for California Construction Management Inc., but one the company is ready for. *By Russ Gager***

**California Construction Management Inc. — Indian Springs High School**  
**Project value:** \$68 million  
**Location:** San Bernardino, Calif.  
**Scope:** Build and renovate 14 high school buildings on 56.4 acres

**> California Construction Management** Inc. works exclusively in construction of K-12 and community college facilities. "We're not at-risk," explains Keith Cole, vice president of project delivery systems. "We don't have to bid the projects as consultants; we propose the projects based on requests for proposals. We give the school district insight on how we would prepare and administer their contracts."

The company has a large community of contractors it has worked with over the years. "We are able to tell a prospective client, 'You bid one time, and we'll get contractors that are ready to bid,'" Cole declares. "You'll have a competitive bid with competent seasoned contractors. You'll have enough competent experienced contractors to make a choice from.' If we were at-risk, we'd have more profit and we would make more money, but our philosophy is we do our best to work with the district as an agent in any capacity needed."

A challenge for California Construction Management has been taking over construction of the 14-building Indian Springs High School in San Bernardino, Calif., from another company. The \$68 million project is in three phases.

The first phase was completed by the previous contract management company. It included underground infrastructure work such as storm drains, sewers, grubbing, grading and demolition. California Construction Management



California Construction Management is handling the renovation of 14 high school buildings in less than two years.

was invited by the district to complete the project.

## Recovery Team

"We are a recovery team specialist," explains Cole. "We were happy the district gave us the opportunity to do the work. They wanted us to take the project over. We had several meetings with the other company, there was a hand-off and we were off and running."

Cole says being handed such a large project — 233,826 square feet over 14 buildings — with a 24-month timeline is a

challenge. "With that comes loose ends and coordination issues that have to do with where one contractor or team of contractors left off and another team of contractors started," he emphasizes. However, "We will complete the project on time and budget on Nov. 17, 2011."

The delivery format is multiprime. "Multiprime means each individual contractor that bids is a prime contractor," Cole explains. California Construction Management functions as the technical liaison, guiding and directing the project, and coordinating activities and commu-



nication issues to ensure the project runs successfully. “We can translate what happens into lay terminology so the district can make good, sound fiscal judgments on how to allocate monies with regard to the budgets,” he says.

The project has 23 prime contractors, each of which may have multiple subcontractors. “It depends on the trade and the scope of their work,” Cole explains. “They may have from five to 12 subcontractors. Our main contact is with the prime contractor.”

### **New and Renovated**

Indian Springs High School will include 98 classrooms and four special day classrooms, along with a gym, multipurpose room, library, child care center, track and field area, soccer and baseball fields, and outdoor tennis and basketball courts.

Planned for the future are a performing arts building and a swimming pool.

Of the 14 separate buildings, seven are being renovated from the original site of a middle school. Students of that school were moved to a new facility to allow renovation for the high school. The buildings being renovated – some of which are steel and masonry and others wood frame – will be gutted, and new roofing, electrical, fire alarm and data systems installed and new interior designs incorporated into them.

The new structures will be type II steel stud construction and earth-toned masonry to match the original buildings. The high school is being designed for 2,700 students. Landscaping and hard-scape is part of the project, along with modernization of several surrounding streets in conjunction with the city.

The project is incorporating some LEED practices. Construction debris is being recycled or disposed of in the proper landfills, and the buildings use skylights to provide daylighting. “We have to follow all specified LEED mandates and try to build a project as carbon-footprint-free as we possibly can,” Cole notes, adding that most of the LEED guidelines are designed into the project.

The market for school construction has been slim, he reports. “Those projects that you can get are few and far between,” Cole says. Nevertheless, he is optimistic about the future. “So as long as projects have to be managed, we can put our foot in the door and we can do this, and we’ll be successful,” he says. The company’s philosophy supports its success. “We expect the best and won’t accept anything less,” Cole insists. ●

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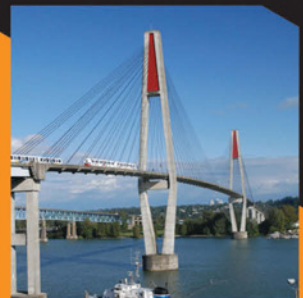
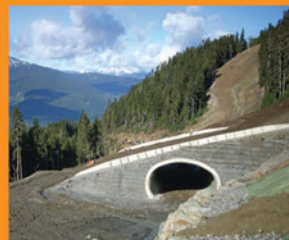
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# Building Value

+ CWC crafts smart, stylish houses for the new residential era. It has listened to and answered the demands of today's homebuyer. *By Chris Olvera*

*"We have always paid keen attention to the homebuyer. But in this new environment, buyers are more cost savvy and discerning than ever, and we have responded."*

*> Robert Thorne, CEO*



California West Communities has four residential developments that blend a variety of architectural styles.

## California West Communities

[www.californiawestcommunities.com](http://www.californiawestcommunities.com)

**Headquarters:** Carlsbad, Calif.

**Services:** Homebuilder and land developer

**Employees:** 30

> ***Just like the evolution of any business*** segment, the housing market has reinvented itself into a more focused, thoughtfully planned industry.

One company that personifies this renewed focus on fundamentals is California West Communities (CWC). This respected, boutique homebuilder prides itself on its core principles: pure value, unwavering quality, meaningful features and eco sensibilities. Since the three partners of CWC have been

together, they have built and sold more than 2,000 homes throughout the state.

The company has intentionally kept its management structure small and its production numbers modest, a business model that has allowed for a tremendous degree of quality control and oversight from the highest levels of the company. As a result, CWC has been able to emerge from the past slowdown as one of the first builders to find a strong following with its flexible floor plans and consumer-pleasing mix. The company also has understood that with resale prices at lower levels, it needed to create homes



that provided even greater value – a move that has paid big dividends and earned a loyal following.

"We have always paid keen attention



to the homebuyer,” CEO Robert Thorne says. “But in this new environment, buyers are more cost savvy and discerning than ever, and we have responded with some of our best values to date. Although homebuyers are as visually sophisticated as ever about the architectural appeal of their home, they want even more for their money. Large lots, family friendly communities, generous square footages with ample bedroom counts often trump other pleasing, but less essential features from their former wish list.”

Thorne, along with his two partners – Don Fontana, president, and Greg Harris, vice president – look to build homes with larger back yards and with more separation between the homes than many other builders.

“The great southern California dis-

*“The great southern California distinction is the climate, and we look to optimize that indoor/outdoor lifestyle experience. There also needs to be a flexibility and functionality to the house.”*

tinction is the climate, and we look to optimize that indoor/outdoor lifestyle experience. There also needs to be a flexibility and functionality to the house,” Thorne notes. “I always look at a floor plan and think, ‘How would I live in this house?’ We get great reactions about our floor plans.”

Examples of newer trends include offering downstairs master bedrooms and great rooms replacing formal living and dining rooms.

### Building on Good Relations

When choosing consultants and subcontractors for CWC’s projects, Fontana evaluates quality, production, price, integrity and service. “Many of our relationships have been cultivated over many years” he says. “Whether we are working with a new company or those we have worked with for numerous years, we value fundamental business concepts and focus on companies that deliver consistency with a straight forward and honest approach. In our business, in many respects we are all on the same team.”

### The Comeback

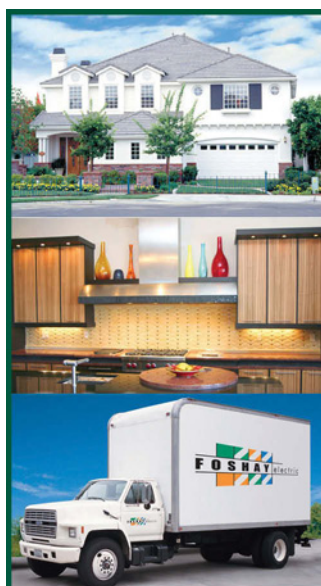
The new, emerging chapter of the residential industry is a win-win for all, Thorne notes. “I am confident it will lead to better-educated consumers, a stricter adherence to sound lending practices and focus



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When designing its homes' floor plans, California West Communities says it focuses on blending flexibility and functionality.

on responsible, thoughtfully crafted homes," he explains. "At the same time, our mission to provide homes that offer a sound monetary investment for a family has never wavered. We want this new generation of families to live in great communities, with amenities and cost parameters that match their lifelong objectives."

Thorne says his company will continue to do what it does best – pay attention to the details and progression of his communities by staying hands on at all levels.

"It is the way we have always done business, and it has allowed us to remain a constant force throughout all cycles," he states. "It is simply true that quality, good ethics and hard work never go out of style."

Despite the past down market, Thorne is experiencing better days this year. "The market is repairing itself," he says. "I see things getting better in 2012-13 and the industry rebuilding itself. Our forecasting indicated 2010 was going to

*"We believe when you have a choice between a new home and a resale home in the same price range, a homebuyer will choose the modern amenities and opportunity to customize. We're also priced right and offer the type of home families are looking for today."*

be the bottom of the market in San Diego. Supply is now below demand for new homes and what we are experiencing is increased sales and homebuyer interest – with three of our four communities having sold out at each phase release. We believe when you have a choice between a new home and a resale home in the same price range, a homebuyer will choose the modern amenities and opportunity to customize. We're also priced right and offer the type of home families are looking for today." ❖

## CWC's New Communities

● **Crosby Villas at Rancho Santa Fe** – Set behind private gates, the Crosby Villas is the newest addition to the exclusive enclave of the Crosby at Rancho Santa Fe. Designed by Scheurer Architects, these luxury residences were inspired by Lillian Rice, who designed the original California-Spanish style structures in historic Rancho Santa Fe. Of the 31 villas, 20 feature golf course views and are set along the 15th, 16th and 18th fairways. The exceptional architecture offers downstairs master suites in two plans and living spaces designed to flow from indoors to out. Priced from the high \$700,000's.

● **Madison Lane in Vista** – Situated on generous 10,000-square-foot lots amid the rolling hills of Vista, the gated community of Madison Lane offers three floor plans ranging from 2,785 to 3,338 square feet. The 52 homes at Madison Lane provide both great value and lifestyle flexibility with three to six bedrooms, two-and-half to four baths and three-bay garages. Priced from the \$400,000's.

● **Andalusia at 4S Ranch** – Andalusia in San Diego at 4S Ranch as a "neighborhood for enjoying gracious living in a vibrant family master-planned community," CWC says. Designed with couples and young families in mind, Andalusia's designs offer one- and two-story single-family homes with three and six bedrooms, set on approximately 6,900-square-foot lots. Combinations of Spanish, Cottage and Craftsman homes include amenities such as Whirlpool appliances, master suites and gas fireplaces. Priced from the mid \$600,000's.

● **Monteluz at 4S Ranch** – Monteluz, also in San Diego at the acclaimed master-planned community of 4S Ranch, combines Spanish, Tuscan and Monterey architecture on some of the largest lot sizes in 4S Ranch with approximately 8,400 square feet. The property features single-family homes in one- and two-story plans. Each residence features three to six bedrooms and up to four-and-a-half baths. Customized options also are available. Priced from the high \$600,000's.








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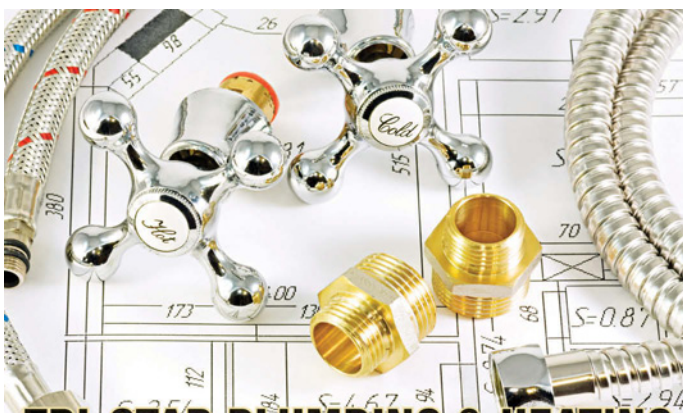





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# 'Simple, Repetitive'

+ Turner Construction is using BIM technology and lean building techniques to keep a complex healthcare project running smoothly. *By Staci Davidson*

"[BIM] is the way it should be done on complex projects such as this."

> Kevin Antonelli, vice president and general manager

In San Jose, Calif., Turner is working on a \$300 million project at the Santa Clara Valley Medical Center.



## Turner Construction Co. — Santa Clara Valley Medical Center

[www.tcco.com](http://www.tcco.com)

**Contract value:** \$300 million

**Project location:** San Jose, Calif.

**Employees on-site:** 30

**Scope:** Design/build construction of a new structure for patient beds

> **It was about 15 years ago that Turner** Construction Co.'s San Jose, Calif., office was the construction manager for the 317,000-square-foot North Tower project at the Santa Clara Valley Medical Center (SCVMC). Since then, the company has constructed multiple projects for Santa Clara County and conducted annual fundraising events for the SCVMC foundation. Even with this long-term relation-

ship, however, Turner was not automatically chosen to build the SCVMC's new Replacement Bed Building 1 project.

"It was a qualification-based bidding process," Vice President and General Manager Kevin Antonelli says. "We were competing against seven other firms, and then we were shortlisted with three other firms. We won out. Not only do we have experience with the county, but we are the top healthcare contractor in the nation."

Acting as the design/build general contractor, Turner broke ground on the project in September 2009. This six-story replacement bed building will be the first of two acute bed facilities to replace an equal number of beds on the SCVMC campus. The 365,000-square-foot proj-

## Major Milestones

Turner Construction is the general contractor on the design/build Replacement Bed Building 1 project for the Santa Clara Valley Medical Center campus in San Jose, Calif. The company's major milestones on this job are:

- > Relocation of the main road going into the hospital campus — Completed in June 2010
- > Upgrade of the central utility plant — Scheduled for completion in September 2011
- > Rerouting of the site utilities from the central plant to the new patient tower — Scheduled for 2011
- > Substantial completion — Scheduled for September 2012
- > Final completion — Scheduled for December 2012



ect involves constructing space for 168 ICU and acute-care hospital beds, a



rehabilitation therapy center, aquatic therapy pools, administrative and medical offices, and facilities for a pharmacy, respiratory care and supply storage. It is being designed and built to meet LEED Gold standards.

“It was the county’s decision to do this as a design/build project, and it was a smart move considering all of the budget problems in this state,” Antonelli explains. “Design/build allows for better coordination and collaboration – it speeds up the process and saves money and time.”

### Slight Delays

Construction on the SCVMC project is scheduled to last about 40 months and be completed in December 2012. Because permitting can often cause the most delays in large public projects such as this, the design was submitted to

California’s Office of Statewide Health Planning and Development (OSHPD) for approval in four main increments:

- » Structural steel;
- » Foundation;
- » Exterior wall, curtain wall and mechanical and electrical systems; and
- » Finishes.

Antonelli explains permitting for the structural steel was completed early, permits for the exterior wall and the rest of the third increment were completed on time, and the finishes are on schedule to be approved by the end of 2010, but there were delays with the permits for the foundation.

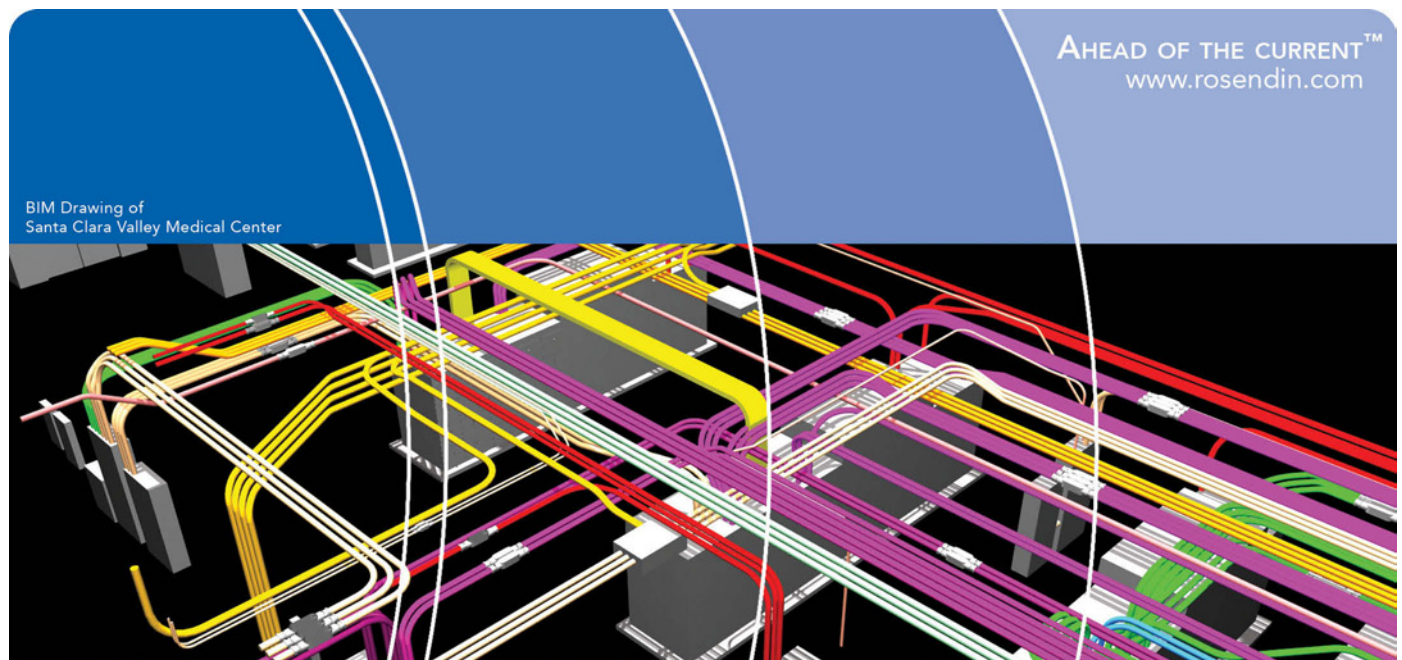
“When we were going through the process for the foundation package, we determined the soil conditions weren’t the same in all areas, so we had to make some changes,” Antonelli says. “We went

from a pile foundation to use secant piles instead, and it’s always a process with OSHPD when you have to make a change on a project like this. However, we’re in the ground now and coming up with the foundation system, and I think we’ll be able to recover some time by resequencing some of the work.”

### Eliminating Conflicts

To keep a project of this size on schedule would be challenging for any contractor, but Turner has an edge, Antonelli notes.

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BIM Drawing of  
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When this project is completed in 2012, the six-story structure will have space for 168 ICU and acute-care hospital beds.

The company is a big proponent of a technology that provides “enormous labor-saving efforts,” according to Antonelli, and is so helpful that its use is becoming more regular industry-wide: building information modeling (BIM). For its SCVMC work, he says, Turner has used BIM to coordinate all mechanical, electrical, fire alarm and sprinkler systems, as well as the interior and exterior metal framing and site utility work.

“We have a coordination room just for BIM,” he explains. “Our use of this technology has helped us eliminate conflicts among the different types of work and maintain our documents, which helps us eliminate changes to the OSH-PD permits.

“This is the way it should be done on complex projects such as this,” he continues. “We expect to save time on the schedule vs. doing it the traditional way

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*“We have enormous experience in healthcare construction and have been the No. 1 builder of hospitals for 20-plus years. We have the right staff for this type of job – people who have seen these issues and learned what needs to be done on a project like this. We have the right staff in the right place, which is key for any project.”*

without this technology. We’re also using lean construction techniques, such as pull scheduling, quality assurance and quality control monitoring, and reverse-phase schedules. Turner has been the leader in BIM and lean for years, which shows we are cutting-edge in terms of our use of technology.”

Although the planning of this project has been complex, Antonelli doesn’t expect many challenges going forward. Turner is finishing BIM coordination on some parts of the design, but once that is complete, the rest of the construction process should move quickly. He explains that once the project is out of the ground, it should be “a simple, repetitive process.”

To speed up the process further, Turner may build the bathrooms off-site and then drop them in. Additionally, the team is set up to resolve issues quickly.

“We have enormous experience in healthcare construction and have been the No. 1 builder of hospitals for 20-plus years,” Antonelli says. “We have the right staff for this type of job – people who have seen these issues and learned what needs to be done on a project like this. We have the right staff in the right place, which is key for any type of project.” ➤

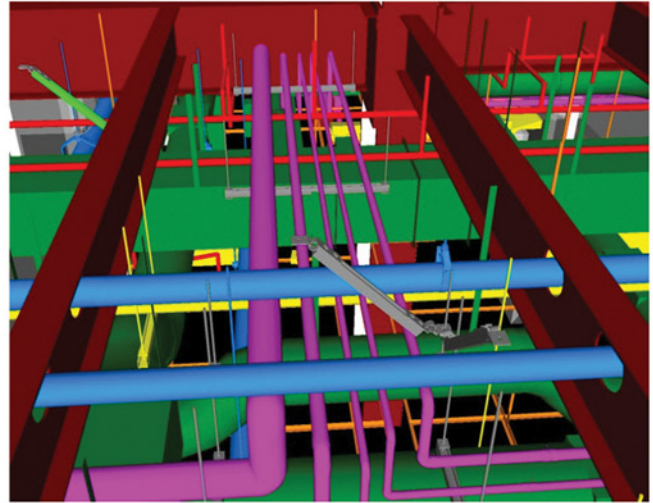




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# Developing Diversity

**+** Just when the retail market began to dry up, long-term retail contractor Fisher Development Inc. changed direction and expanded its outlook. *By Staci Davidson*

*"Not only has our diversification opened up our own minds about the possibilities of what we can do, but it's changed what people think of us."*

*> Sydney Bernier, vice president of marketing*

FDI says sustainable methodologies have been used during every phase of its work at a greenhouse complex at The Presidio in San Francisco.



## Fisher Development Inc.

[www.fisherinc.com](http://www.fisherinc.com)

**Headquarters:** San Francisco

**Employees:** 25

**Services:** General contracting and construction management

**> In a few years, Alex Fisher, vice president of business development for Fisher Development Inc. (FDI), would like a potential customer to call and say, "Hey, do you still do retail?" It's not that Fisher wants FDI to be forgotten in that market. On the contrary, he intends for FDI to become as well known for a wider range of project types, not just retail.**

"A few years ago, I was analyzing our portfolio of work and realized it was

weighted too heavily on retail," he explains. "Retail is such a competitive market with its strict demand of costs, schedule and quality, and I thought our success in meeting those needs would translate nicely in to other areas. It's proved to be true."

FDI's goal is to increase its market in four different areas: corporate interiors, restaurants, hospitality and education. Retail tenant improvements (TI) will always be in the mix, but they can't eclipse everything else, Fisher notes.

Founded in 1971 by Robert S. Fisher (Alex's father), FDI is a national general contractor and construction management firm. With its history of delivering high-profile retail projects on a fast-

track schedule, strict budgets and immovable deadlines for clients such as Gap, Hugo Boss, Escada, Nike, Polo Ralph Lauren, Tiffany & Co., Cole Haan and Williams-Sonoma, FDI began a focused effort of marketing itself as a more diverse contractor, explains Sydney Bernier, vice president of marketing and Robert Fisher's daughter.

"We knew we had the relevant experience to be successful in other market sectors, we just had to broadcast our message and demonstrate our competency," she says. "The influx of different project types has made work more interesting for our employees and really broadened everyone's horizons.

"We were so fortunate to start making



this change when we did, because it was right before the economy went south – retailers essentially stopped building. If we hadn't diversified, well, you could say things would have been much more dire," she adds. "Our key to weathering this economy has been through diversification."

### A Greener Vision

During its diversification process, FDI decided to put a greater focus on environmentally sustainable work, so it joined the USGBC and several employees became LEED-AP. The company also broadened its network of subs by finding firms that offered sustainable products and services. "They have to be true to what they promise," Bernier stresses, noting FDI doesn't work with companies that simply give lip service to sustainability.

"Our first 'green' project was about 15 years ago, before LEED was established," she explains. "We did the build out of Gap's headquarters [in San Bruno, Calif.], conceived by famed design architect, William McDonough. It had operable windows, a living roof and numerous other sustainable features. We were on the frontier of green construction and learned a tremendous amount about how to run a project in a sustainable manner."

One of FDI's environmentally conscious partners is San Francisco-based Project FROG, which produces energy-efficient building systems with a goal to significantly reduce energy consumption and construction waste. In November 2008, FDI performed quite a feat, taking only four days to construct a fully operable Project FROG building (designed to achieve a LEED Silver rating) at the entrance of the Boston Convention Center for the Greenbuild Conference and Trade Show.

Called "The School of the Future, Today," the 1,500-square-foot glass and steel structure was partially assembled by FDI offsite and brought to the convention center. When completed, the structure had a living roof and eco-friendly mechanical systems – a combination that

made it energy neutral – and was certified for occupancy by the city of Boston.

### A Partner in Innovation

With the success of that project under its belt, FDI broke ground on the Crissy

Field Center with Project FROG in July 2009 in San Francisco's Presidio, the only urban national park in the country. Managed by the Golden Gate National Parks Conservancy and the National Parks Service, the center offers environ-



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mental programs to children, schools and community organizations.

The 7,200-square foot temporary center is on track to receive LEED Gold certification, Fisher notes. It has been widely praised for its unique design and for its sensitivity of the surrounding habitat.

"These may be temporary buildings and they are prefabricated, but they are like nothing you've seen before," he stresses. "This is a structural steel and glass building with high quality finishes – it's not a bunch of trailers that you one might expect with temporary structures. To look at it, you'd never know it's prefab."

In addition, The Crissy Field Center is being considered as a potential federal demonstration site for alternative energy production where scientists will be able to test new solar and wind technologies.

Bernier explains that FDI's success

with the Crissy Field Center helped it secure a contract to rebuild a greenhouse complex, also located in The Presidio. FDI performed extensive site work, installed new utilities and poured a waterproof-concrete foundation for the 1,050-square-foot prefab structure. This main building is being used as a laboratory and nursery. FDI also erected an additional greenhouse at the complex. Bernier notes sustainable methodologies were used during every phase of the project.

"Diversifying our portfolio has been a key factor in our ability to evolve and respond to the marketplace," she says. "We shifted our mindset internally about the kinds of projects we want to pursue – sustainable, seismic, office, education, hospitality – and now we see the market responding by coming to us with a wide range of work."

FDI's other recent projects include the ground-up construction of a West Elm retail location on a brownfield site; the seismic upgrade and TI of a 1920s-era structure for The San Francisco Auto Co.; and a high-end interior renovation of Midi Restaurant for Joie de Vivre Hospitality.

"We have a reputation for taking on challenging projects with tough site logistics, complex plans and compact schedules," Fisher says. "Our cumulative experience from working on tens of thousands of projects give us a distinct advantage when working in these environments; we know what can go wrong and understand how to plan ahead in those situations."

"We're taking the company in an exciting new direction but in many ways, it's what we've always done: challenging projects that we can be proud of." ■

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# Do-It-Yourselfers

+ Tulare, Calif., is getting the job done thanks to significant cost savings through green and alternative-energy initiatives. *By Chris Petersen*

*"There's just something about Tulare that's a little bit different than some of the communities that are our neighbors."*

*> Lew Nelson, director*

## City of Tulare Public Works Department

[www.ci.tulare.ca.us](http://www.ci.tulare.ca.us)

**Annual budget:** \$36.7 million

**Headquarters:** Tulare, Calif.

**Services:** Public works including sewer, water, stormwater, solid waste, street maintenance and fleet maintenance.

**Employees:** 89

Providing residents with special recycling bins is one of the many ways Tulare, Calif., is saving money and preventing layoffs.

> **The City of Tulare Public Works** Department in California has been working hard to save money in recent years, and in doing so has accomplished something rather unusual. Director Lew Nelson says the department is one of the few in the state to avoid laying off employees or putting them on furlough, as has been the case in numerous communities in the debt-plagued state.

What's more, the city is moving forward with a number of significant public works projects that are expected to help put the growing community on the map. These include a domestic wastewater treatment plant expansion, a fourth biogas fuel cell generator and even a privately-funded NASCAR-ready auto race-track. Nelson says the city will be able to accomplish all of these initiatives thanks to its cost-saving measures and reluctance to rely on state funding. The city completed an \$81 million industrial wastewater treatment plant project in November 2009 to serve the six cheese and ice cream plants in Tulare, funded with wastewater revenue bonds. Other food processing plants are in the planning stages, including kosher chicken and beef processing.

"There's just something about Tulare that's a little bit different than some of the communities that are our neighbors," he says.



## Green Savings

A major reason why Tulare has been able to avoid laying off employees is because the city is saving money through green initiatives. Nelson explains that the city has undertaken a number of alternative-energy projects that have significantly reduced the city's spending in many cases.

For example, Nelson points to the city's three 300-kilowatt energy fuel cells, which convert biogas into electricity. "That saves us half a million dollars a year on electric bills," he says. The biogas

is produced at the sewage treatment plant. The project won a USEPA Clean Air Excellence Award in 2009. A fourth fuel cell is under construction.

Additionally, the city converted its heavy transit and garbage truck fleets to run on liquid natural gas (LNG). Nelson says liquid natural gas costs about \$1 per gallon, a substantial savings when compared to the state's average cost for gasoline of more than \$3.

The LNG fleet consists of 16 refuse trucks and four transit buses. Twelve transit buses, three street sweepers and



16 light vehicles run on compressed natural gas.

Tulare recently entered into a contract with Enterprise to lease light vehicles with maintenance services. This not only saves the city money in terms of maintenance costs, but also allows it to focus its resources on other areas. "When we made the initial switch, we were accumulating replacement funds to replace those vehicles ourselves, so those funds were then freed up for other uses," Nelson says. Forty-eight of those vehicles run on E85 ethanol from the Stanley's Chevron station in Tulare, which was the third E85 station open to the public in California.

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*"When we made the initial switch [to leased vehicles,] we were accumulating replacement funds to replace those vehicles ourselves, so those funds were then freed up for other uses."*

In terms of the city's solid waste processing services, Nelson says Tulare has seized on opportunities to save money even when it meant reversing course and reverting to an old system. He says the city used to pick recyclable materials out of trash at a "dirty" material recovery facility, thinking it would save money, but last year gave residents blue recycling cans when the contractor began paying for commingled recyclables. Implementing the blue cans has reduced the city's solid waste processing costs by approximately \$400,000 a year, according to Nelson.

The city still is looking for new ways to save money through greener utilities.

Nelson says a 1.0-megawatt solar plant is planned for installation at the city's wastewater plant in 2010, and energy-efficient LED street lighting is on the city's radar for installation sometime in the next several years.

### Picking Up The Slack

The other side of Tulare's resistance to layoffs and furloughs is that Nelson believes that, in the long run, they don't add up to savings. At a time in which many state and municipal agencies



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**Johnson Controls** congratulates the City of Tulare for its commitment to sustainability. The city commissioned Johnson Controls to create a comprehensive program to reduce water loss and provide facility and system upgrades while remaining budget-neutral. Future projects include plans to incorporate solar technology into the wastewater treatment plant. [www.johnsoncontrols.com/localgovt](http://www.johnsoncontrols.com/localgovt)

throughout California are sending workers home on furloughs to ostensibly save money on staffing costs, Nelson says those efforts can actually have the opposite effect.

"Our analysis shows that furloughs don't actually save you anything," Nelson says.

Nelson explains that furloughed employees only leave behind work that has to be picked up by other workers who are not on furlough. Picking up that slack while still taking care of their own responsibilities can lead to substandard work and overtime costs. These costs eventually end up outweighing the short-term savings created by furloughs and also have the potential to create long-term problems because of the lasting effects unsatisfactory work can create for a municipality.

### Forging Ahead

The city's cost-saving measures have helped it forge ahead with a number of significant projects that will provide for the community's future. Nelson says the city has a number of projects on its slate for the next several years that are aimed at helping the city meet the needs of its growing population as well as create new jobs for the community.

A new domestic wastewater treatment plant has been put out to bid. Nelson says the \$40 million project will include new basins and a new headworks pumping plant to replace the original, which was built in the 1960s. This project will help accommodate future growth in the community.

Although it's not as practical as the treatment plant, perhaps the highest-profile project undertaken in Tulare is its

proposed 711-acre NASCAR racetrack. Nelson explains that the project is being funded as part of a larger package from an overseas investor.

The track will feature a one-mile oval track with 1.4-mile road course to NASCAR standards and a one-quarter-mile drag strip. The development as a whole will also include luxury condominiums overlooking the track, luxury RV park and a commercial/industrial development including 1,000 motel rooms and a proposed indoor ski resort.

Tulare's NASCAR track is expected to represent a major boost to the local economy during a difficult time for the rest of the state, Nelson says. He adds that the project is anticipated to create approximately 16,000 jobs in the community in construction as well as for the racetrack itself once it opens. ☼



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"[The museum] is in the midst of the most exciting reinvention in its forty-year history."

> Lori Fogarty, executive director

## Respectful Renovation

+ Cahill Contractors tackles the renovation of the Oakland Museum of California, making it more inviting to visitors. *By Russ Gager*

> **Updating an innovatively designed** museum requires careful work to preserve the original architect's intent while meeting contemporary needs unanticipated when the building was designed. When the Oakland Museum of California (OMCA) was built out of concrete in 1969, it was heralded for its innovative combination of building architecture by Kevin Roche and landscape architecture by Dan Kiley.

Each of the museum's three levels includes an outdoor garden on what is the roof of the level below. Stairs and walkways connect each level that is

stepped back behind and above the previous one in a park setting. This combination of indoor and outdoor spaces with terraced roof gardens and a courtyard functions as a sort of village green.

As part of the \$4.5 million phase 1.5 renovation, the museum was closed from October 2009 to May 2010. Work involved the great hall, the high/low galleries, the theater, the museum store, the docent office, restaurant, security and lobbies. A new fire alarm system, security gates, ticket booths, garage bicycle storage and an ADA ramp were installed, and restrooms and offices

were renovated.

Phase 1.5 is renovating 28,000 square feet of the museum's 163,675 total square feet and is aiming for LEED Commercial Interiors accreditation. An earlier, \$12 million phase 1, which completed renovation of 59,000 square feet in May 2009, earned LEED Silver.

**Cahill Contractors Inc. — Oakland Museum of California**

[www.cahill-sf.com](http://www.cahill-sf.com)

[www.museumca.org](http://www.museumca.org)

**Project value:** \$4.5 million

**Location:** Oakland, Calif.



The Oakland Museum of California is undergoing a \$4.5 million renovation.

## Surprises in Store

Because this was the first major renovation of the 41-year-old building since its construction, unforeseen conditions were discovered, reports Cahill Contractors Inc., the general contractor for Phase 1 and 1.5.

One of these was in the museum store. Existing plumbing lines and a major sprinkler standpipe were found in the ceiling where HVAC ductwork was supposed to be installed. So consultants and designers had to find a way to keep the existing lines while still making room for all the new ductwork.

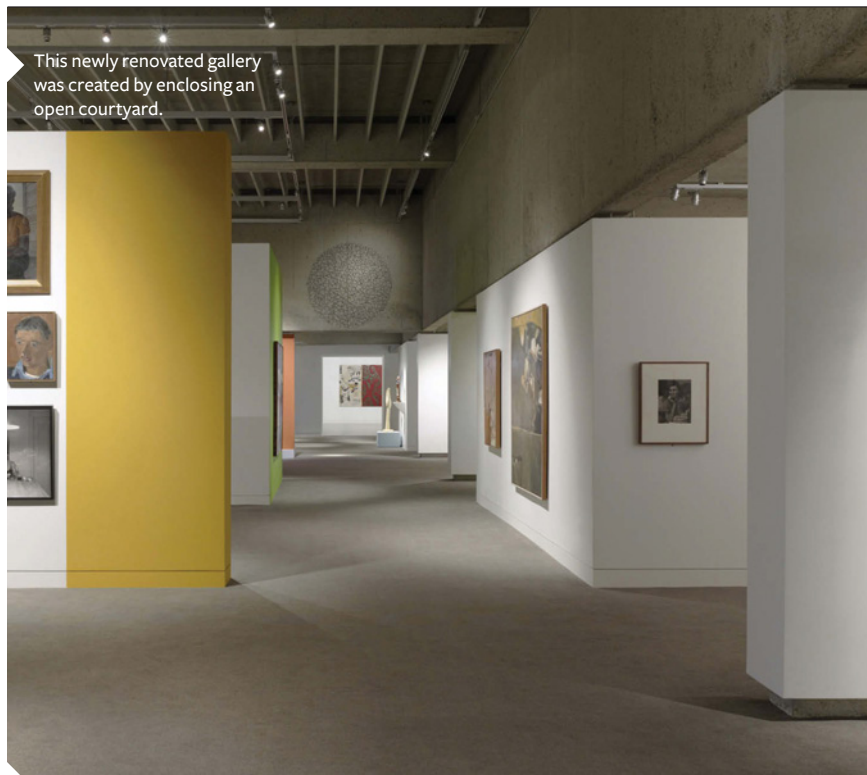
The challenge to the architectural firm of Mark Cavigner Associates in updating a bold, distinctive design was not to detract from the original. So when running conduit for new systems, such as the fire alarm, any opportunity that presented itself to hide the conduit had to be used. The architect also had to approve every area before the conduit was run.

## Wired and Wireless

The new fire alarm system was designed by Scott Electric Co., San Francisco, the architect and the installer, Bay Alarm. Together they determined where sensing and alarm devices and conduit needed to be located. Then formal approval was required from the city.

Technology advances in fire detection and notification since the museum's first system was installed allowed the use of wireless devices. The museum is one of the most unique in combining a hard-wired fire alarm system with a wireless system. Because of signal issues with the density of the building's concrete, some combination of wired and wireless systems had to be used.

Several of the galleries and other areas were completely gutted and redone. In the theater, new seating, flooring and lighting were installed, along with a new wooden stage floor and some acoustical treatment inside the walls. In the great hall, the old ceiling was removed and new track lighting for exhibits installed.



*"While we are enhancing the physical spaces of the museum – making them lighter, brighter, more welcoming and more comfortable – we are also hoping to change the relationship with our visitors."*

A ticket booth approximately 10 feet by 10 feet for the second floor and a ticket desk for the third floor were built on-site. They are partly clad with utile mahogany wood siding and InvariMatte®, which has a low-gloss stainless steel finish. A solid translucent material called 3form Chroma was used for the countertop. High-intensity lights in the booth shine on the Chroma and make the countertop look illuminated.

Approximately 20 to 23 subcontractors were used on Phase 1.5, including Scott Electric, which worked with Bay Alarm. The drywall contractor, Raymond Interiors, Concord, Calif., handled an intense level of scrutiny and detail. ❧

## More Welcoming to Visitors

The mission of OMCA is to highlight California's history, art and sciences, and each level showcases one of these subjects. "With more than 1.8 million objects, OMCA is a leading cultural institution of the Bay Area and a resource for the research and understanding of California's dynamic cultural and environmental heritage," the museum says.

The art and history galleries have opened since the completion of phase 1.5. The natural sciences gallery and classroom and education facilities are scheduled for completion in phase 2 by early 2012.

"The Oakland Museum of California is in the midst of the most exciting reinvention in its forty-year history," says Lori Fogarty, executive director. "Building on its tradition as the 'museum of the people,' OMCA is celebrating the many people, places, inspirations and aspirations that shape the California identity and experience. While we are enhancing the physical spaces of the museum – making them lighter, brighter, more welcoming and more comfortable – we are also hoping to change the whole relationship we have with our visitors."





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# A Joint Effort

*"It truly was a team effort."*  
 > Rob Price, project manager

**+ FCI balanced the needs of several government entities with the Joint Forces Readiness Center Complex at F.E. Warren Air Force Base in Wyoming.** *By Chris Petersen*

**FCI Constructors Inc. — Joint Forces Readiness Center Complex**  
[www.fcior.com](http://www.fcior.com)  
**Project cost:** \$37.5 million  
**Project location:** Cheyenne, Wyo.  
**Employees:** 100+ (on-site)

**> Building a project for multiple tenants** normally requires a contractor to be careful to meet all of their different needs. When those tenants are tasked with defending the nation's freedom, however, that puts added responsibility on the builder. Take, for example, the project recently completed by FCI Constructors Inc. at F.E. Warren Air Force Base in Cheyenne, Wyo.

FCI just put the finishing touches on the Joint Forces Readiness Center Complex on the base. The building is a 145,000-square-foot facility that will provide administrative space for six defense and government entities, including, but not limited to, the Wyoming Army National Guard, the Wyoming Air Guard and the State of Wyoming. The facility also includes a 28,800-square-foot field maintenance shop. Project Manager Rob Price says this project meant juggling a lot of different needs and requirements.

Fortunately for FCI and all those involved, the Joint Forces Readiness Center Complex came off without a hitch due in no small part to the cooperation between the contractor and the six occupants of the building. "The project was successful because of a collaborative team effort with the Wyoming Military Department, project architect Coover-Clark & Associates and all of the subcontractors involved," Price explains. "It truly was a team effort."



## Working Hard

Construction on the project began in October 2008, and was completed in 20 months. Aside from the considerations that came with building for many different occupants, Price says the project overall wasn't a stretch for FCI.

"This type of construction is common for FCI," Price says, noting that the building features a basic structural steel frame with integral colored CMU, stone, composite metal panels and glazing that complete the exterior veneer. The curved design of the structure posed a

challenge to the construction team, according to Price. Detailed coordination of the layout ensured that the steel fit properly, which eliminated the need for rework and potentially lost time.

The project was designed to achieve LEED Silver certification, but Price says it is close to LEED Gold status to potentially earn that classification. In addition to many of the usual features to earn LEED points, the Joint Forces Readiness Center Complex also includes a highly efficient HVAC system with a horizontal geothermal loop field. This system uses



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*“The weather’s a challenge. The schedule was threatened by adverse weather, but due to a tremendous team effort to stay productive, the project was completed on time.”*

geothermal heat pumps to draw heat from and into the earth for heating and cooling the building. Price says FCI has a lot of experience in installing these types of systems, and notes that geothermal systems are becoming increasingly common in the Southwest.

Some of the additional sustainable features found on the project are water-efficient landscaping, a building automation system, lighting controls, extensive daylighting and a tightly wrapped building envelope. Price says FCI also committed itself to acquiring locally manufactured materials.

The most significant challenge faced by FCI on this project was working through Wyoming’s rough winters. “The weather’s a challenge,” Price says. “The schedule was threatened by adverse weather, but due to a tremendous team effort to stay productive, the project was completed on time.”

Nevertheless, Price says a strong bond between FCI and the Wyoming Military Department allowed FCI to accomplish its goals of completing the project on time and on budget. “The project team’s cohesiveness, that’s what made this project a success,” Price adds.

### Foundation of Experience

FCI had the experience to deal with the harsh climate of the Southwest because it has been building in the region for more than 30 years. When it was founded in 1978, it concentrated on Colorado, but over the years the company has expanded to serve Arizona, Wyoming and New Mexico.

Since 1988, the company has been recognized regularly as one of the top-400



FCI included a number of sustainable features on the project to achieve at least LEED Silver certification.

contractors in the nation by *Engineering News-Record*. It has been recognized numerous times with awards from organizations such as Associated Builders and Contractors, the American Subcontractors Association of Colorado and *Colorado Construction* magazine.

The company says its diversity is one of its greatest attributes. “Since 1978, FCI has successfully completed commercial and light industrial projects in both the public and private sectors,” the company says. “We are industry leaders in renovation and new construction of educational facilities, housing, hospitals, churches, assisted living facilities, municipal facilities, correctional facilities and justice centers. Our resume also includes retail stores, fire stations, office buildings, banks, airports, manufacturing facilities, restaurants, bridges and storage complexes.

“Our diversity has allowed us to accumulate extensive knowledge in both hard bid and negotiated projects,” the company continues. “FCI’s familiarity

with the hard bid market allows us to provide accurate pricing and assure our clients that they are getting the best prices for the work, and our preconstruction services are second to none. We offer more than 30 years of history in conceptual and design development estimating, value engineering, site selection review, systems analysis and critical path scheduling.”

This experience adds up to some very impressive numbers, it adds. “Our dedication to providing a variety of services on a wide range of projects has allowed us to achieve over \$380 million in annual revenue,” the company says.

FCI says its employee-ownership means that it takes pride in everything that it does, and has resulted in numerous satisfied customers.

“Dependability has made FCI the builder of choice for over 200 repeat clients, and by continuing to focus on clients’ needs before our own, we expect our growth to continue well into the future,” the company says. ☛



*"It was a very aggressive schedule under very tough conditions, but the team worked hard to make sure it was a success."*

*> Donnie Arant, construction manager*

# Widening in the West

**+** The Arizona Department of Transportation called on Kiewit and Sundt to widen a major roadway between Tempe and Phoenix. *By Kelly McCabe*

**> Before a widening project on Red Mountain Freeway (also known as Loop 202) began in December 2008, motorists frequently would endure traffic jams on the roughly 10-mile stretch between Phoenix and Tempe, Ariz.**

To ease congestion, the Arizona Department of Transportation (ADOT) teamed up with a joint venture between Kiewit Corp. and Sundt for the expansion project, which will be completely wrapped up this summer.

Although the \$189 million SR 202 Red Mountain Freeway Design/Build project isn't completed yet, Construction

Manager Donnie Arant of Kiewit says the benefits already are apparent.

"If you listen to the traffic reports at night, there used to be a lot of delays on the 202," he states. "Now you hear that there are no delays, and that makes you pretty proud — the project really did make a difference."

The expanded roads were opened in May, and Kiewit/Sundt is working on landscaping and signage. The joint venture expects to completely finish the project weeks before its originally scheduled completion in August.

The Red Mountain Freeway project

includes the expansion of 10.5 miles of the eastbound roadway and the addition of one general lane and auxiliary lanes in that direction. In addition, 2.5 miles of the westbound lanes were widened, including the addition of a general lane and auxiliary lanes.

**Kiewit Corp./Sundt JV — SR 202 Red Mountain Freeway Design/Build project**

[www.kiewit.com](http://www.kiewit.com)

[www.sundt.com](http://www.sundt.com)

**Project cost:** \$189 million

**Location:** Between Phoenix and Tempe, Ariz.

**Scope:** 10.5-mile-long freeway widening

Motorists on the Red Mountain Freeway between Tempe and Phoenix in Arizona will experience smoother rides and fewer traffic jams thanks to an expansion project.



“This widening project will construct additional eastbound lanes on Red Mountain Freeway between State Road 51 (Piestewa Freeway) and Loop 101 (Price Freeway), and additional west-bound lanes between Loop 101 and Scottsdale/Rural Road within the cities of Phoenix and Tempe,” ADOT explains. “As a result of adding these new general-purpose lanes, motorists in this corridor will benefit from improved mobility and added roadway capacity.”

Kiewit/Sundt constructed 22 bridges for the project, two of which are mile-long spans over the Salt River. Of the 22 bridges, six had to be cast high and low-

### Designing Success

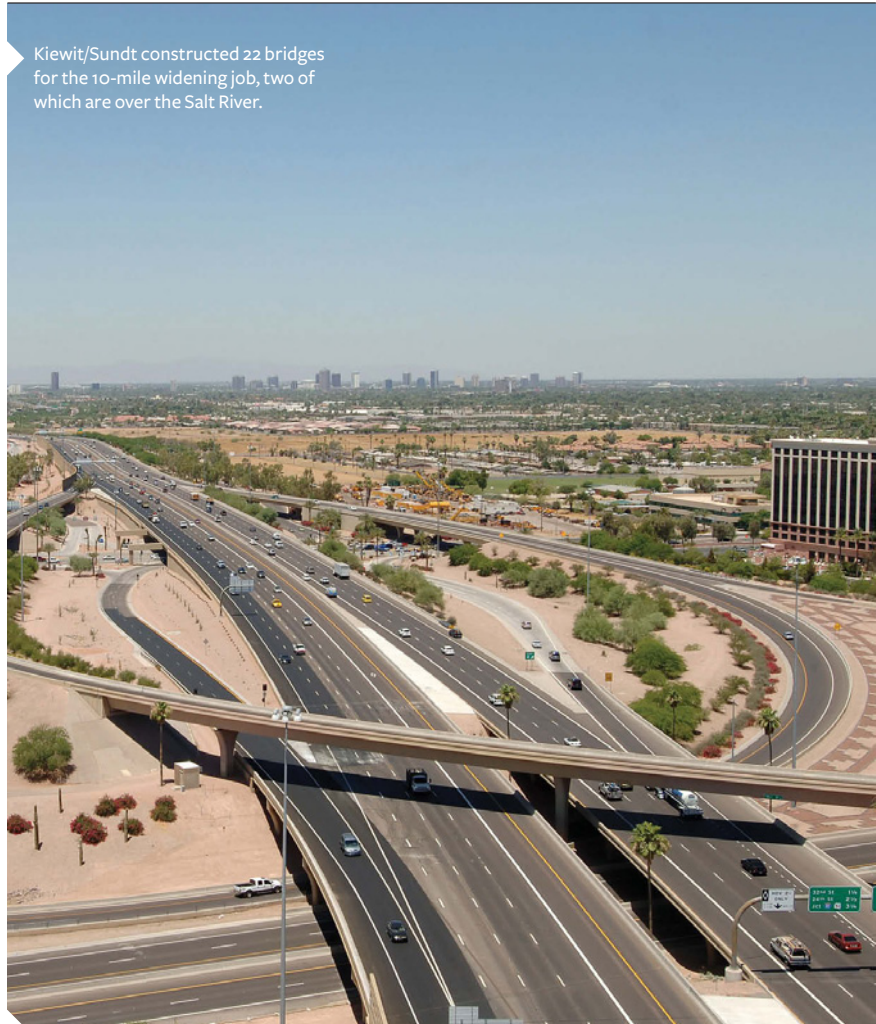
Although working on such a high-profile design/build project can be challenging, Kiewit and Sundt are well-versed in the method. “Kiewit and Sundt have been involved in every major design/build project in the valley, and we just have a wealth of experience and knowledge in design/build,” Arant says.

Sundt has completed significant design/build projects in recent years, working with owners to plan, design and construct the project to meet diverse goals and ease constraints. “We used this approach for the new \$71 million Walter Cronkite School of Journalism and Mass Communications at Arizona State University, turning a challenging budget and schedule into an overwhelming success,” the contractor says.

Kiewit’s Southwest District, which is based in Phoenix, has used its design/build expertise to complete heavy civil construction projects in Arizona, California, Idaho, Nevada and Utah. “From traditional design/bid/build to design/build, our award-winning construction projects include highways, bridges, runways, terminals, transit systems, power plants, water treatment facilities, dams, canals, wastewater treatment plants and tunnels,” the company says. “Specializing in site development, grading, paving, trenching and railroad construction, we have the experienced people, in-depth local knowledge and a modern equipment fleet available to construct [clients’] next project.”



Kiewit/Sundt constructed 22 bridges for the 10-mile widening job, two of which are over the Salt River.



ered into place due to falsework sections that encroached into the overhead clearance for truck traffic, Arant explains. These bridges were lowered into place by utilizing hydraulic jacks on each bridge.

“We also had some combination bridges that had cast-in-place end sections and precast middle spans, which is pretty unique,” he adds. “These combination bridges reduced traffic restrictions due to having less falsework in the active roadway.”

The project also includes multiple types of wall work, including masonry, lightweight noise panel, mechanically stabilized earth, and 350,000 square feet of cast-in-place wall, which Arant says is a significant amount.

### Working Together

Close teamwork and communication between the Kiewit/Sundt and ADOT team minimized or eliminated any challenges associated with the project, Arant says. In fact, the three parties shared an office, which isn’t a common occurrence in projects, but one that encouraged open communication.

“We have a very detailed partnering program with the owner,” Arant explains. “The owner, designer and general contractors were all located in one big office, which really encouraged close partnering and teamwork throughout the entire project.”

Schedule is an especially important – and sometimes challenging – aspect of



*“There will be no outstanding issues when it’s finished. Overall, we exceeded the owner’s expectations, and we created really good owner relationships to take into the next project. It’s a pretty high-profile project in the city, and it’s been a huge success.”*

design/build projects, but Arant says the team overcame those challenges, resulting in a project that will be finished early and under budget.

“We have a six-day turnaround average for our drawings, which is pretty unique,” he notes. “And being a design/build project, it’s critical to keep the design on schedule.”

At the peak of the project, the joint venture was building 16 bridges at one time, Arant notes. To increase access over the Salt River to build the bridges, the joint venture imported 400,000 tons of material to build a temporary access road.

The team also worked under strict environmental regulations regarding migratory birds at the river bridges. The team was able to mitigate these issues by utilizing innovative exclusion measures. “That helped with the environmental regulations for the area’s migratory birds, swallows, to make sure we didn’t disrupt them,” he explains.

When Kiewit/Sundt wraps up the project, Arant says he’ll be most proud of the relationships it built while building a successful project. “There will be no outstanding issues when it’s finished,”

he notes. “Overall, we exceeded the owner’s expectations, and we created really good owner relationships to take into the next project. It’s a pretty high-profile project in the city, and it’s been a huge success.”

He adds that although it was a very aggressive schedule with some tough conditions, workers on the job worked more than 700,000 man-hours with no major safety incidents. “That’s a pretty big deal, too,” Arant remarks. ☺

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# Achieving Success

“We’re on track to open the bypass in November of 2010.”

> Dave Zanetell, senior project manager

**+** The Federal Highway Administration’s Hoover Dam Bypass project has stayed on budget and schedule, thanks to close coordination and teamwork. *By Alan Dorich*

## Federal Highway Administration – Hoover Dam Bypass Project

[www.hooverdambypass.org](http://www.hooverdambypass.org)

**Project budget:** \$240 million

**Location:** Arizona and Nevada

**Scope:** New 3.5-mile roadway

**Employees:** 1,200 on-site and off-site trade and craft workers throughout the six bypass projects

**> As construction crews have worked** steadily on the Hoover Dam Bypass project, their success largely has been due to close coordination and strong planning across all of the Federal Highway Administration’s (FHWA) many teams and contractors, Dave Zanetell says. “Every aspect of the project, from a high strategic level right down [to the] operational level, was fully planned,” he says.

According to the project’s site, the job consists of a new, 3.5-mile road corridor stretching from Clark County, Nev., to Mohave County, Ariz. This will serve as an alternate crossing for the Colorado River. Motorists currently use U.S. Highway 93, a portion of which rides atop the Hoover Dam, the site says.

Zanetell, the senior project manager for FHWA, says the centerpiece of the project is the new Colorado River Bridge. Now nearly finished, the four-lane structure spans nearly 2,000 feet and stands nearly 900 feet above the river.

FHWA’s Central Federal Lands Highway Division is managing all aspects of project procurement, design and construction, and HDR Engineering Inc. is providing support services. In addition, HDR, T.Y. Lin International, Sverdrup Civil Inc. and other sub-consultants are serving as the project’s consultant team, the Hoover Support Team.

A joint venture team of Obayashi Corp. and PSM Construction USA Inc.

The new Colorado River Bridge is nearing completion and will be the centerpiece of the project, FHWA says.



Photo: FHWA Central Federal Lands ©2010



has almost completed construction on the Colorado River bridge portion of the bypass project.

Along with a new route, the Hoover Dam Bypass will provide relief to U.S. Highway 93. The highway has suffered congestion due to switchbacks leading to the Hoover Dam and restrictions at its crossing. In addition, Zanetell says, the existing unsafe and outdated highway has an accident rate that is three times the adjoining U.S. 93 outside the area being bypassed.

The project team is now building the remaining portions of the bridge, along with approach roadways and tie-ins. “We’re on track to open the bypass in November of 2010,” Zanetell says.

According to Zanetell, some of the challenges of the project have included maintaining efficient organization and

accessing the remote location of the sites. “The Obayashi team overcame many challenges, including remote and constrained access,” he says. “Their primary point of construction support and delivery was from above.”

However, the teamwork of the project’s 1,200 trade and craft workers allowed it to overcome these challenges, Zanetell says. “We’re really proud of all aspects of the industry who came [to work on] the job,” he says.

Zanetell notes that FHWA has learned many lessons from the Hoover Dam project that it will be able to apply to other work. “There are a great many technical, specific solutions that will help better our body of knowledge,” he says.

He also feels that the finished project will reflect the teamwork. “We can achieve great things if we align the best in

our industry and [our] organizational skills towards a common goal,” he says.

“So often you see projects where those interests end up competing, as opposed to aligning,” he says. “I think that stifles our ability to achieve success.”

### Preserving the System

Based in Washington, D.C., FHWA says it is responsible for ensuring that America’s roads and highways stay safe and up-to-date. “Although state, local and tribal governments own most of the nation’s highways, we provide financial and technical support to them for constructing, improving and preserving America’s highway system,” FHWA says.

Its annual budget of more than \$30 billion is funded by fuel and motor vehicle excise taxes and supports local, state and federal projects, FHWA says. ☛



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# Mountain Comfort

✚ The Lake Vista apartment complex in Loveland, Colo., is being built by Shaw Construction to bring high-end residences to the area.

*"One of the keys to providing outstanding service for our clients is the care and attitude we take in planning a project for success."*

*> Shaw Construction*

The Lake Vista apartment complex will add to the scenery of Loveland.



## Shaw Construction Co.

[www.shawconstruction.net](http://www.shawconstruction.net)

**Project cost:** \$45 million

**Location:** Loveland, Colo.

**Employees on site:** 200+

**Scope:** 303-unit development

➤ **Shaw Construction Co. broke ground** in March on the Lake Vista apartment complex in Loveland, Colo. Described as a luxury apartment community by Denver-based Shaw Construction, Lake Vista will sit on the eastern shores of Equalizer Lake. Its 22 buildings will be made up of five building types, as well as a welcome center and garages. The complex will total 357,000 square feet. "Our long list of satisfied customers will attest

to our professionalism, reliability and expertise with complex projects," Shaw Construction states.

Plans include a swimming pool and spa area, and Shaw Construction will provide site utility and landscaping work. All residential buildings have been designed to comply with LEED for Homes certification, and the structure is wood framing on post-tensioned concrete foundations with heavy timber details.

## Luxury Lifestyle

The developer on the project is McWhinney, operating out of its Loveland office. It says that Lake Vista will "provide residents the ultimate in amenities, service and quality of life." The architect is Oz

Architecture Inc. of Boulder, Colo.

Equalizer Lake to the west, Rangeview Office Campus to the north, Medical Center of the Rockies to the east, and Eagle Ridge Apartments to the south border the approximately 15-acre site. The anticipated opening is for early fall 2010, with offerings of energy-efficient studios, as well as one-, two- and three-bedroom apartments. Features of Lake Vista include:

- » Efficient and open floor plans with upgraded finishes;
- » Kitchens with stainless steel appliances and granite slab countertops;
- » Spacious walk-in closets;
- » Crown molding;
- » Full-size washers and dryers in units;
- » Oversized patios or balconies;



- » Fireplaces in select units;
- » Vaulted ceilings and lofts in select units;
- » Access to community trails;
- » Lake and mountain views; and
- » A state-of-the-art community center and community garden.

"The amenities and location of Lake Vista create a quality of life rivaled by no other apartment community in the region," McWhinney says.

The Welcome Community Center will include a 24-hour fitness facility featuring cardio equipment with embedded 15-inch touch screen monitors. The media room will contain a 120-inch high-definition television. In the game room, residents can play shuffleboard, pool or video games in the "Wii Zone." There is a commercial-grade gourmet kitchen and dining room, and a cyber café and conference room facility will be available for

business needs. They will include computers and Internet access.

Outdoor amenities include resort-style water features, a swimming pool with 25-meter lap lanes, a hot tub and deck area with a fireplace and outdoor kitchen and entertainment space.

### Regional Boom

There are 16 different floor plans for units, and while rents have not been set, McWhinney says they would probably fall between \$800 monthly for studios and \$1,600 for larger units. Preleasing begins this summer.

Lake Vista is part of the 3,000-acre master planned Centerra community, created to feature top employers, premier shopping and dining, and a spectrum of living opportunities. McWhinney believes Lake Vista will be an attractive

housing option that will help lure new employees for businesses.

The \$45 million Lake Vista project is estimated to add nearly \$2.7 million into Loveland's budget through development fees, and put more than 200 people to work on the project.

### Care and Attitude

"One of the keys to providing outstanding service for our clients is the care and attitude we take in planning a project for success," Shaw Construction says. "A team-managed approach is the philosophy we maintain throughout the entire building process."

Along with its work in the residential market, Shaw has performed on commercial, education, aviation, entertainment, healthcare, hospitality and government projects. ➤



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# A Joint Production

**+** Colorado-based Haselden Construction teams with national contractor Barton Malow to expand the Auraria Higher Education Center's science building. *By Chris Olvera*

*"One of the challenges with the project was commissioning the building in phases to accommodate owner move dates."*

*> Roger Stadler, Barton Malow project manager*



The expanded and renovated science building will accommodate a campus that has grown by 250 percent since the '80s.

**Haselden/Barton Malow: Auraria Health Sciences Center**

[www.conocohbm.com](http://www.conocohbm.com)

**Headquarters:** Centennial, Colo.

**Project budget:** \$83 million

**Peak trades:** 200

**> Haselden Construction, Barton Malow** Construction and the Auraria Higher Education Center (AHEC) aren't strangers. The two construction companies have worked with AHEC for more than eight years. This time, the two are adding to and renovating the science building.

The Auraria science building project will add nearly 200,000 square feet of new space and renovate another 140,000 square feet of existing space.

Haselden/Barton Malow divided the \$83 million project into two phases. Phase one, finished in December 2009, involved the construction of the addition to the science building. "This phase involved building four stories and a basement of lab space," Barton Malow Project Manager Roger Stadler says.

Design and construction followed LEED requirements for green buildings, including energy conservation to achieve Gold certification. "We're actually one point shy of Platinum," Stadler adds. The second phase, to be completed this December, involved the renovation of the existing science building, which also will pursue LEED Gold certification.

The expanded and updated facility –

which serves the University of Colorado at Denver, Metropolitan State College of Denver and the Community College of Denver – will enable the Auraria Campus to meet the current needs of their science programs. The building includes classroom spaces, laboratories and preparation space for multiple disciplines, a research greenhouse and chemical storage areas.

New technology is found throughout the building, which houses everything from a cadaver lab and research spaces to a student lounge and coffee bar. The science building's lab rooms are equipped with state-of-the-art classroom technology, including projectors, built-in laptop connections, Internet ports and other features.

"One of the challenges with the project



was the technology,” Stadler explains. “In a new facility, you want to have the latest and greatest, so equipment selections are made at the latest possible date. Accommodating this while trying to complete the building was challenging.”

Renovations to the existing 142,000-square-foot science building will be completed in December 2010. Mechanical, electrical and plumbing upgrades will be performed, as well as window replacements throughout. The existing science building was built in the early 1980s, and since then, the Auraria campus has grown 250 percent.

#### Green Features

The building’s eco-friendly insulating thermal barrier system contains no volatile organic compounds (VOCs). Using low-VOC paints and materials will assist in

achieving the LEED Gold status. Some of the other sustainable features include:

- » Local materials, 20 percent of which were produced within 500 miles;
- » Diverting 75 percent of construction waste from landfills;
- » Maintaining good air-quality measures during construction; and
- » Energy-saving occupancy sensors for interior lighting.

“We installed an automatic shade system,” Stadler says. “It keeps the shades low in the morning with the eastern exposure, and as the day goes on, the shades go up to allow maximum daylight while minimizing heat gain.”

#### Prime Teamwork

The Haselden/Barton Malow union brings together the strengths of one of Colorado and the nation’s premier pre-

construction and construction providers, to offer construction manager/general contractor services on select projects in the Colorado marketplace, such as the Auraria Health Sciences Center.

“We’ve been working together for about 10 years,” Stadler says. “Barton Malow provides the national experience of working with advanced laboratories and other higher education facilities, and Haselden provides local market expertise with similar facilities. They know how things work in the [Colorado] market and have been a great partner.”

Barton Malow was founded in 1924 and operated as a general contractor until the early 1970s, when it added construction management to its arsenal. Today, the company offers project planning, value-management, BIM and construction services. ☘



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*"Being around for the last 77 years, the knowledge and stability that brings is a true competitive strength."*  
 > David Trueblood, president

# Insulation Veterans

+ Metalclad Insulation Corp. has been providing industrial and commercial insulation contracting services across the Southwest for almost 80 years. *By Kathryn Jones*

## Metalclad Insulation Corp.

[www.metalclad.com](http://www.metalclad.com)

**Annual revenues:** \$25 million

**Headquarters:** Fullerton, Calif.

**Services:** Industrial and commercial insulation contracting, abatement, firestopping, scaffolding, painting and demolition

**Employees:** 130

> **Established in 1933, Metalclad** Insulation Corp. enjoys a number of competitive strengths that distinguish the Fullerton, Calif., company from other insulation contractors in the Southwest. Founder Ray Kemper put the company on the map when he created a number of metal-protected panel and pipe insulation systems, some of which were patented. Although most of these systems are no longer used today due to new insulation materials available on the market, Metalclad is still known for its innovation and reliability.

In the late 1960s, the company was reorganized by Lee Sweetser, Hank Trueblood and Russ Saunders to be the most versatile contractor of its kind. Through a combination of organic growth and strategic acquisitions, the company has expanded significantly throughout the years. After former President John Macias retired in early 2007, David Trueblood – grandson to Hank Trueblood and son to Don, who also works at the company as the IT manager – took the helm and is leading the company on its current growth path.

"In the Southwest, we are one of the only union specialty insulation contractors that performs – in addition to industrial and commercial mechanical insulation – asbestos abatement, firestopping, painting and scaffolding," he states.

Metalclad Insulation Corp. has long-term relationships with major oil producers and refiners throughout the Southwest.



## Meeting Clients' Needs

Metalclad maintains long-term relationships with major oil producers and refiners, power generation utilities, and general and mechanical contractors working throughout the Southwest. It operates a full-service warehouse and fabrication shop for sheet metal and insulation products, and other specialty items to meet client needs.

Trueblood says the company's longevity in the industry is a key advantage. "Being around for the last 77 years, the knowledge and stability that brings is a true competitive strength," he notes. "I can say with certainty that during the last 17 years I've been here, we have never failed to complete a project no matter the cost to the company.

"We always complete the projects to

which we have been contracted to perform," he stresses. "That's a huge selling point that I'm very proud of. We've never left anybody stranded. Once we say we're going to do it, we're going to do it. The strength and knowledge of our field supervision is second to none. The consistency they bring to the customer is very important because it makes projects run much more efficiently and cost-effectively for our customers."

Approximately 65 percent of the company's projects lie within the industrial realm, with the remaining 35 percent being commercial. Occasionally, the company will do residential projects for general contractors or government agencies to soundproof homes near airport landing and take-off zones.

Trueblood says the company's diversi-



ty has helped it weather the economic storm. "Mechanical insulation is typically at the end of a project, so we were one of the last trades to feel the effects of the economic downturn," he notes.

"We're feeling the effects on the commercial market fairly heavily right now, but the industrial market has been holding up, and we're already starting to see an upswing in the abatement side of our industry," he adds.

### Several Projects Underway

Metalclad is simultaneously working on two projects for Kaiser Permanente in Fontana and Anaheim, Calif., which began in late spring 2010 and will be completed in summer 2012.

In Fontana, the company is performing firestopping services for a new seven-story, 481,000-square-foot Kaiser hospi-

tal and 50,000-square-foot associated support building on behalf of general contractor McCarthy Building Cos. Designed by HMC Architects, this 314-bed hospital, its associated support building and 23,000-square-foot central utility plant will be one of the largest and most innovative healthcare facilities in the Inland Empire, Trueblood says.

In Anaheim, the company is working for two different contractors on another Kaiser hospital project being constructed by Hensel Phelps. Metalclad is providing mechanical insulation of HVAC systems for Control Air and plumbing insulation for Pan Pacific Murray Co.

The six story, 434,000-square-foot hospital will house 262 beds while the adjacent support building will be housed in a 172,000-square-foot, six-story structure. The medical facility also will

include a three-story, 31,800-square-foot central utility plant.

No matter what type of project the company tackles, safety is always the dominant theme. "In construction, safety is of upmost importance," Trueblood emphasizes. "We want everybody to go home the way they arrived at work. We work to live, so we want to make sure everybody works with that attitude in mind."

Looking forward, Trueblood says Metalclad will continue to grow its market share by strengthening the capabilities of its fireproofing, demolition and scaffolding divisions, and expanding its presence into neighboring states such as Arizona and Nevada. "We absolutely anticipate remaining in the Southwest," he adds. "We've been here for 77 years and hope to be here forever." ❖

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# Finishing the Job

**+** Providence Health and Services, with Swinerton Builders, has been able to take hold of what appeared to be a dead healthcare project and nurse it back to life. *By Luke Gillespie*

*“Our immediate challenge became coordinating with an almost entirely new sub work force with no learning curve.”*

*> Bobby Eagar, senior project manager*

## **Swinerton Builders – Providence Holy Cross Medical Center**

[www.swinerton.com](http://www.swinerton.com)

**Project cost:** \$181 million

**Location:** Los Angeles

**Employees on project:** 180

**Scope:** Four-story hospital expansion

**> After a work stoppage that lasted** nearly a year – and a change in general contractor – things are back on track for Providence Holy Cross Medical Center’s new expansion.

The Los Angeles City Council voted 8-5 to block the expansion in 2007. The four-story expansion was abandoned, leaving the steel frame sticking out next to the current facilities. The 180-man construction crew was sent home, and an environmental study commenced.

Providence worked with the city council to rescind the work order, and Swinerton Builders’ Orange County branch took over as the new general contractor – with the project 38 percent complete – when work began again. Senior Project Manager Bobby Eagar explains that the environmental impact study was brought to a halt, and construction was mobilized in May 2009.

“It’s a very unique project for us,” Eagar states. “We’ve never undertaken a hospital takeover project. Supplanting the contractor on paper was a major undertaking by our client. Our immediate challenge became coordinating with an almost entirely new sub work force with no learning curve.”

## **Healing Construction**

The \$181 million expansion is being funded entirely by Providence and the communities it serves. Once construc-

After nearly a year’s work stoppage, Swinerton is at work on Providence Holy Cross Medical Center’s new expansion.





tion resumed, Swinerton checked the existing structural steel, which it found to be in good shape.

The 120,000-square-foot tower, with a basement, includes the remodel of the 11,000-square-foot entrance and food service/dining areas. According to Eagar, the building envelop, skin and roof are complete, with the floors 80 percent finished, site work 70 percent finished and the project at the tail end of getting finishes in. The central plant is set to come online in September. The hospital has been receiving chilled water for the HVAC via temp chillers that were brought in back in February while the new central plant began construction.

The project is expected to be finished in February 2011. The architect is Los Angeles' HMC Architects. "We had a baseline scheduled that alluded to February,"

Eagar says. "It's a major accolade that, yes, we have been able to maintain the schedule. This is primarily due to the true partnering spirit that HMC Architects and the construction manager, Stahl Companies, have with us."

Included in the expansion are a new women's pavilion, a 12-bed neonatal intensive-care unit, a new lab for gastroenterology exams, observation rooms for emergency patients, more surgical and critical care beds and a 100-seat chapel.

The eastern exterior wall is finished, offering a glimpse of the new wing. Crews also are working on building the new central plant to the rear of the existing hospital. The sweeping first-floor wall on the western side of the expansion displays where the chapel will be, which the hospital says is a very important addition.

### More than Pleased

Eagar says there have not been any unusual challenges in the actual construction of the facility. Nor does he foresee any difficulties ahead for the project, and notes that an excellent relationship has been built between Swinerton and Providence.

He explains that Robert Hacker, regional director of facilities and construction services at Holy Cross has had great praise for the entire team. "It has been a great experience," Eagar says. "I am humbled by the fact that through this whole process, Robert Hacker has been a great sounding board for us."

Eagar explains that it was Swinerton's "approach and ability to put a strong team together" that helped a once-doomed project. "We are more than pleased and happy to be a part of this successful expansion project," he says. \*



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# Keeping the Faith

+ Swank Enterprises is nearing completion on the Old Faithful Visitor Center in Yellowstone National Park and hopes to obtain LEED Gold certification. *By Kathryn Jones*

*"I think we did an excellent job."*  
— Kevin Forbes, project manager



Swank Enterprises is replacing the visitor center for Old Faithful with a state-of-the-art, \$27 million facility.

## Swank Enterprises – Old Faithful Visitor Center

[www.swankenterprises.com](http://www.swankenterprises.com)

**Budget:** \$27 million

**Location:** Yellowstone National Park

**Scope:** Two story, 27,000-square-foot, LEED Gold visitor center

**Employees at peak:** 60

> **Millions of people visit Yellowstone** National Park every year to pay homage to one of the world's most famous geysers – Old Faithful, located in Wyoming.

The cone geyser was named in 1870 by members of the Washburn-Langford-Doane Expedition, who were mystified by its size and regularity. Old Faithful has been a staple at Yellowstone ever since,

which was evident by the wear and tear of the nearby Old Faithful Visitor Center that was in dire need of replacement.

The U.S. Department of the Interior National Park Service set forth on a \$27 million project to demolish the aging park center and replace it with a state-of-the-art, green visitor center featuring an auditorium, a research library and classroom, and a bookstore.

CTA Architects Engineers of Billings, Mont., was selected to design the new building to resemble the rustic architectural style of the Old Faithful Historic District. Swank Enterprises, a general contractor with offices in Kalispell and Valier, Mont., was awarded the construction contract.

Swank Enterprises – which celebrates its 50th anniversary this year – has extensive experience in national park projects, Project Manager Kevin Forbes says, and even teamed up with CTA Architects Engineers on Yellowstone's Canyon Visitor Education Center, which opened to the public in 2006. The contractor will soon begin work on the Many Glacier Hotel at Glacier National Park.

"Right now, with the way the economy is, we have a lot of public work," Forbes notes. "With as much competition that is out there for the work that is available, our biggest advantage is having good people out in the field – being able to self-perform some of the work helps us out in the long-run."



### Going for the Gold

Swank Enterprises began work on the two-story, 27,000-square-foot park facility in May 2008 and is on schedule to complete the project by August, Forbes reports. Although National Park Service removed most of the old building, the contractor still had to tear out the foundation before it could start construction.

Because Old Faithful Visitor Center is seeking LEED Gold certification, the project earned points for not expanding its environmental footprint since it is being built at the same location, he explains. A temporary building was set up to accommodate visitors while the new construction was taking place.

The new structure consists of a concrete foundation with crawlspace and structural steel framing. It features cedar shingle shake siding adorned with

Pipestone granite quarried from a site located in Whitehall, Mont., approximately 154 miles from the job site. This material matches other stone on buildings in the Old Faithful Historic District. The most distinctive features of the Old Faithful Visitor Center, according to Forbes, are its steep roof system and expansive entryways.

The building's unique design allows for maximum use of natural lighting, which also helped it earn LEED points. "You can stand in the lobby and look through this huge aluminum-glass curtainwall that's set up so you can see the geyser," Forbes describes. "The biggest thing that we've done to earn LEED credit is diverting 96 percent of all demolition and construction waste away from the landfill. That's pretty phenomenal, especially at such a remote site."

Forbes was the project manager for the Canyon Visitor Education Center, so he "knew the ins and outs of working at the park," he admits. "And I was able to apply that to this job."

"However, this is the first LEED project for myself and for Project Superintendent Josh Mullaney," he continues. "It's also the largest project Josh and I have ever built as far as size, contract value and complexity. But we knew what we needed to do, and we did it. And I think we did an excellent job."

He also praises the subcontractors, vendors and suppliers for their contributions to the project, some of which have long-term relationships with Swank Enterprises. "We do a lot of work with Big Sky Plumbing and Heating," he notes as an example. "They always do outstanding work on all of our projects." ●

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# A Host of Opportunities

**+** Mortenson Construction is building the first Major League Baseball spring training facility on Native American land in Arizona. *By Brian Salgado*

“One of the main goals in the construction of this facility is to provide opportunities for community member-owned businesses and members.”

> Eric Grenz, Project Manager

Once completed, Salt River Fields will be the spring training home of the Arizona Diamondbacks and Colorado Rockies.



## Mortenson Construction – Salt River Fields at Talking Stick

[www.mortenson.com](http://www.mortenson.com)

**Scope:** 11,000-seat baseball stadium and spring training facility

**Employees at peak:** 1,000

**Location:** Salt River Pima-Maricopa Indian Community

**> The most recent combined-franchise** spring training facility is Salt River Fields at Talking Stick, currently being constructed on the Salt River Pima – Maricopa Indian Community. The facility will be the Cactus League home for the Arizona Diamondbacks and Colorado Rockies and is expected to be ready for opening day of the 2011 spring training season.

Mortenson Construction, the construction manager at risk selected for the fast-track project, has built numerous state-of-the-art sports facilities throughout the United States and is currently ranked the third top sports builder in the United States by *Engineering News-Record*. In Arizona, Mortenson most recently completed Camelback Ranch – Glendale in Glendale, Ariz., the spring home of the Los Angeles Dodgers and Chicago White Sox, a project they completed with HKS Architects. HKS Architects is the architect of record for Salt River Fields at Talking Stick.

The scope of work includes construction of an 11,000-seat baseball park comprised of the main stadium/field; four

major league, eight minor league, four half practice and two agility fields; along with major and minor league clubhouses, weight room facilities and offices for each franchise.

## Creating Opportunities

“Mortenson is required to achieve at least 15 percent community participation – [meaning the] total comprised work force should employ at least 15 percent community members and outlying Native American community members,” Grenz says. “At the onset of this project, we wanted to set higher expectations; we set our own goal of 30 percent. Currently, our team is on track to exceed our community participation goal.”



### Communication is Key

Throughout the course of the schedule, numerous entities have collaborated to ensure all parties are informed and in constant communication with the Arizona Diamondbacks and Colorado Rockies. Mortenson simultaneously collaborates with the Community to ensure the most timely and accurate details of the project.

“There really is no one decision-maker,” Grenz says. “Each decision is a collective effort, which poses its own challenges. However, with the same end goal in mind, decisions are typically reached in the most efficacious manner.”

“The nature of the project, its schedule and the number of stakeholders involved necessitates the many demands and needs that must be satisfied; it is a matter of keeping communication channels

open among all parties,” Grenz adds.

“We hold weekly construction and design meetings in which all organizations take part. Everyone is heavily engaged with the status of the project and the decision-making needed for a successful one. A key factor aiding the team in timely decision making is the co-location of the Community, HKS and Mortenson in the jobsite trailer.”

### Fast-Track Schedule

Along with the challenge of numerous owners with their own needs, the project is on a fast-track schedule. HKS was selected as architect in April 2009; six months later, Mortenson was selected as the construction manager at risk and only one month later, the project team broke ground in November 2009.

“You could call it an ‘expedited fast-

track schedule,’” Grenz says. “This has provided an opportunity for the Mortenson/HKS team to issue phased design and bid packages to accommodate the fast-track nature of the project.”

Mortenson and HKS built Camelback Ranch – Glendale and constructed upgrades to Chase Field in Phoenix, the regular-season home of the Arizona Diamondbacks. “Based upon the existing relationship we have with HKS, we are able to utilize our past experiences on this project to build the best facility for the Community, the Arizona Diamondbacks and Colorado Rockies.”

Grenz notes the job site will employ about 1,000 workers at its peak in August or September, when the exterior enclosure and the interior finishes take place. The next milestone will be the topping off of steel toward the end of July. ➤

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# The Flagship Project

**+** The Harbor County-UCLA Surgery/Emergency Replacement Project is a leading example in L.A. County's new design/build program. *By Kathryn Jones*

*"We went through major efforts not to disrupt the hospital."*

*> Stuart Brehm, senior capital project manager*

## Harbor County-UCLA Surgery/Emergency Replacement Project

[www.humc.edu](http://www.humc.edu)

**Total project cost:** \$323 million

**Location:** Torrance, Calif.

**Scope:** Design/build of new surgery and emergency departments

**> After California Gov. Arnold Schwarzenegger** passed legislation to authorize the use of design/build construction for state capital improvement projects, construction began on the \$323 million Harbor-UCLA Surgery/Emergency Replacement Project in November 2009. When completed in July 2013, the Harbor-UCLA Medical Center near Torrance, Calif., will have brand-new surgery and emergency departments to better address the healthcare needs of individuals living in Los Angeles County.

For the past 15 years, the County of Los Angeles Department of Public Works has served as project manager for capital projects of \$100,000 or more. The workload is divided between Public Works Project Management Division 1 and Division 2. Division 1 is overseeing this project, Senior Capital Project Manager Stuart Brehm says.

The project was approved in May 2005, and Public Works Project Management Division 1 received its construction permit in May 2006. "Between January 2006 and May 2006, the state passed a law allowing all counties to use design/build rather than lump sum low bid on certain big projects," Brehm says, "and the deputy director of Public Works decided that this project would be the flagship project of the design/build program for L.A. County."

L.A. County is using the design/build method on its \$323 million Harbor County-UCLA Surgery/Emergency Replacement project.





### And the Winner is ...

In order to get the project going, the county had to develop a request for proposal and carefully assign the scores, Brehm says. "You have to think about what's important on the project, and we thought the most important thing was previous experience in design/building," he notes. "That played a big part in the company that we chose. We had three good competitors [McCarthy Building Cos., Clark Construction Group and Hensel Phelps Construction Co.], and the evaluation committee held debriefings with each proposer.

"We chose Hensel Phelps, who hired KMD Architects," Brehm continues. "They had both done design/build with other people and with each other, so they are a strong organization and a good team. They really rose to the top, and we

are very happy with them. Since price is not the key thing on a design/build project but quality is, most design/builders have subs already lined up. These subs have worked with Hensel Phelps on design/build projects in the past, and Hensel Phelps had one of the best safety records of all three proposers."

### Collaboration Pays Off

The project consists of a two-story, 190,000-square-foot structure with a partial basement that will connect to the center's existing eight-story patient tower. Work was divided into three phases, with the first phase taking place between late 2007 and early 2010, Brehm says. At that time, crews increased the capacity of the central plant, built a new loading dock and developed a fire safety route for occupants to use during an evacuation.

"We went through major efforts not to disrupt the hospital," he says.

The second phase is the actual construction of the medical center addition. "[As of June], they've been under operation for about five or six months," Brehm says. "They had to excavate the whole pit and put in the piers for the shoring. Now, they are starting the parking structure and will be placing steel shortly."

When the hospital moves to the new emergency room and vacates the old one, there will be some extra space for a third phase of construction, but that has been put on hold for now, he says.

Although L.A. County faces a number of obstacles, "The biggest challenge we have is not delaying Hensel Phelps," Brehm notes. "They are very quick, and we have to be able to provide the things they need very quickly." ■



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# Brown's All Around

**+** A low-income housing development in Fresno is among the latest in a long line of projects for Brown Construction.

*"From large-scale commercial complexes to neighborhood multi-housing, Brown Construction has brought a wealth of expertise, a depth of knowledge and a successful outcome to every project in our extensive portfolio."*

*> Brown Construction*

Brown Construction is experienced in building residential, commercial, retail and industrial projects.



## Brown Construction

[www.brown-construction.com](http://www.brown-construction.com)

**Headquarters:** West Sacramento, Calif.

**Service:** General contracting

**Employees:** 100+

**> Brown Construction is applying its** wide range of expertise in construction to a large-scale housing project in Fresno, Calif. The West Sacramento-based general contractor broke ground earlier this year on Parc Grove Commons, a roughly \$37 million low-income apartment complex located on a 23-acre site in central Fresno.

The complex, owned and managed by the housing authorities of the city and county of Fresno, will feature 215 apart-

ment units. The 23-acre site formerly housed a World War II-era public housing complex demolished by the city of Fresno in 2007.

Parc Grove Commons also will include a community room, a learning center, a pool and a playground. Construction is expected to be completed next year. The project is funded in part by the American Reinvestment and Recovery Act, and it created about 250 jobs, according to news reports.

## Project Range

Brown Construction has a more than 30-year history of building in the retail, residential, commercial and industrial sectors. Recent projects include:

## Client Spotlight

The housing authorities of the city and county of Fresno have provided affordable housing to Fresno and 18 other communities in Fresno County for more than 60 years.

"Our goal is to provide low- and moderate-income families with safe, decent and sanitary housing in an environment, which would enable them to build self-confidence and pride," the agency says. "We help families move from dependency to self-sufficiency. When families no longer require our assistance, we realize success."

Housing is provided to more than 14,000 families under several programs including conventional low-rent, migrant, farm labor, and Section 8 voucher housing.

Home improvements also are encouraged through a loan and grant program.





- » A 25,000-square-foot REI retail store at the Ridge at Creekside shopping Center in Roseville, Calif.;
- » The \$10 million, 64,000-square-foot West Sacramento Civic Center;
- » Davis Senior High School and Community Gymnasium, Davis, Calif.; and
- » Rio Lane Apartments and Folsom Boulevard Apartments in Sacramento, which are multi-unit, low-income housing developments.

#### **‘Open-Book Policy’**

Brown Construction prides itself on its ability to focus equally on client needs and resources, as well as building designs and materials. “From start to finish, our projects move forward in our clients’ best interests,” the company says.

The company delivers an average of 30 projects per year nationwide, about 90

percent of which are design/build. “We’re a skilled team of industry experts with a high degree of professionalism and a passion for the process of building communities,” Brown says.

Prospective clients initially meet with one of the company’s principals, who works with them on the project overview, cost analysis and proposal.

Each principal oversees a project team that includes an estimator, manager, superintendent and engineer, as well as experienced subcontractors, the company says. Subcontractors are selected from a minimum of three bids per trade.

“Owners, developers, architects, consultants and tenants are all included in the open exchange of ideas and open-book policy that characterize our process,” the company adds. “From large-scale commercial complexes to

neighborhood multi-housing, Brown Construction has brought a wealth of expertise, a depth of knowledge and a successful outcome to every project in our extensive portfolio.”

The project team reviews progress through all phases. Clients are kept informed and are encouraged to be active throughout projects, the company says.

Brown Construction believes in understanding each community it builds in. “Our interest in construction goes beyond the structures we build,” the company says. “We care deeply about neighborhoods and about the environment, about enhancing communities, adding buildings with a purpose.”

The company remains involved after construction, making itself available to answer questions or tackle any post-building issues. ☐



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# Building Campus Fun

**+** Grand Canyon University is continuing its campus expansion with a new student recreation center that is being constructed by UEB Builders.

## UEB Builders — Grand Canyon University Student Recreation Center

[www.uebuilders.com](http://www.uebuilders.com)

**Total expansion cost:** \$60 million

**Location:** Phoenix

**Recreation center scope:** 55,000 square feet

**> The recession has made things difficult** for many colleges and universities. Enrollment is down and many planned facility upgrades have gone on the backburner, especially at private institutions.

But this is not the case for Grand Canyon University (GCU) in Phoenix, with the private school seeing enrollment reaching record highs. This comes after the school faced the threat of bankruptcy six years ago. To turn things around, GCU expanded its online curriculum and put a freeze on tuition.

With student enrollment more than five times what it was in 2005, GCU is beginning a two-year campus expansion project. This includes a 55,000-square-foot student recreation center, which is being built by UEB Builders of Scottsdale, Ariz.

“Our team commitment is to understand the values and needs of our clients, designers and end-users, and to be constantly accountable in achieving the goals of the project,” UEB says.

## Student Recreation Center

GCU became a publically traded company in 2008, and its parent company, Grand Canyon Education Inc., sold shares at \$12. Since then, the stock has doubled to \$24.

Along with this move, GCU began to offer its online program to working adults and expanded its online course catalog. Since fall 2008, online enrollment increased from 21,955 to 43,000 in the past academic year. However, with an

GCU's new 55,000-square-foot student recreation center will house three basketball courts.



“Our team commitment is to understand the values and needs of our clients, designers and end-users, and to be constantly accountable in achieving the goals of the project.”

> UEB Builders



on-campus increase from approximately 2,700 students in fall 2008 to 4,000 students, the university saw a need for facility expansion.

The new student recreation center is part of the \$60 million campus expansion plan, with UEB acting as general contractor. Work began on the recreation center in February and is expected to be completed during the upcoming fall semester.

The recreation center will feature three basketball courts and practice facilities for wrestling, basketball and volleyball. Described as a “playground” by GCU, the recreation center is being built on the northwest side of campus behind Kaibab Hall. There will be state-of-the-art men’s and women’s locker rooms, athletic training facilities and a student fitness center available for use by all campus residents.

### Waves of Expansion

Ground broke in June on the new 5,000-seat events center, which is the main portion of the GCU expansion plan. The 135,000-square-foot center is one of four buildings that is being erected during the first wave of expansion. In addition to the student recreation center, the first wave includes a dormitory and a classroom building.

The events center is slated to open in October 2011, with the dormitory and academic building scheduled to be done in December.

GCU will not be finished with its expansion then, however; the school has a second wave of expansion planned that consists of two more dormitories, a classroom building and athletic fields. GCU has a timetable to finish the second wave in 2013.

### Proactive and Professional

UEB says it is one of the region’s leading contractors, specializing in medical, institutional, commercial and urban mixed-use construction projects. Its services include general contracting, construction management, design assistance, design/build, and feasibility and planning.

“UEB Builders is known for its enthusiastic ability to work in integrated teams constructing complex architecture in cost-effective ways,” the company says.


To understand the needs of its project partners, UEB utilizes “proactive and professional preconstruction services, careful cost management, innovative subcontractor procurement systems, clear and comprehensive scheduling, safe and courteous construction supervision, and an unshakable emphasis on creating lasting value,” it says. \*

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# Highly Technical Work

+ Hoffman Construction flexes its mental muscles while building a complicated laboratory and classroom facility for Washington State University. *By Chris Petersen*

*"You can't over-communicate, and when you have that level of trust with everybody, there's no way you can fail."*

*> Chip Tull, project manager*

**Hoffman Construction —  
Washington State University**

[www.hoffmancorp.com](http://www.hoffmancorp.com)

**Project cost:** \$41.6 million

**Project location:** Vancouver, Wash.

**Employees:** 85 (at peak)

> **Taking a look at the features of the** new Applied Technology Classroom building for Washington State University in Vancouver, Wash., might send some contractors back to school to bone up on their science. With three clean rooms, two RF-shielded rooms and additional engineering and computer science laboratory space, the project is a bit more complicated than a typical project. For Hoffman Construction, however, all it needed to know was when it could get started.

"With clean rooms, that's right in our wheelhouse," Project Manager Chip Tull says. "We do a lot of projects with clean rooms for clients. It's no real stretch in this case."

The 58,000-square-foot project broke ground in January, and is expected to be completed by fall 2011. The four-story building is the first of two projects to be completed on the university's Vancouver campus. The other, the Washington Technology Center, has not yet received funding and will be permitted separately.

Hoffman is building the project through a delivery method that is a combination of general contracting and construction management, which it uses on the majority of its projects. Tull says the approach works well because of the way it considers construction practicalities during the design phase. "I think the biggest benefit of this method is the collaboration both during the preconstruction

Hoffman Construction's work on Washington State University's new Applied Technology Classroom building will be completed in 2011.



tion and construction that really offers some construction know-how to be infused into the project, especially during the design phase," he says. "We were doing estimates all through the preconstruction phase."

## Overcoming Challenges

Although building such technically complex facilities as clean rooms and laboratories is nothing new to Hoffman, Tull says the company has been challenged to some degree by the combination of different needs within the project. "This

one is unique due to the diverse base of programs within a relatively small building footprint," he says.

Additionally, the project is being built in a relatively small space, on the side of a hill. Fitting everything in while avoiding downtime caused by conflicts is of the utmost importance, so Hoffman is using building information modeling (BIM) to coordinate the work. Tull says the use of BIM gives Hoffman the chance to see the work in real-time before it begins, allowing it to see any potential conflicts before they would happen in



real life and cause delays. Tull says Hoffman has been using BIM for years and has been able to show clients the benefit of using it on complex projects such as the Applied Technology Classroom building.

For instance, he says, the company recently discovered a conflict between the underground drainage for the building's foundation and the sanitary drainage of the building itself. This problem would not have been discovered otherwise until crews were out working in the field, and the use of BIM allowed Hoffman to resolve it right away. "That alone allows for the right solution as opposed to a make-fit solution out in the field," Tull says.

Hoffman is aiming for LEED silver certification on this project, and Tull says that appears to be an easily attain-

able goal. The project team is focusing on recycling construction waste and controlling waste management. Hoffman also is working with subcontractors on using reusable totes to carry materials and tools to the site. "It's definitely a team effort," he says.

Overall, Hoffman has had a good rapport with its subcontractors on the project, and Tull attributes that to the fact that it has worked with many of them in the past. "The key to this job is no different, it's just maintaining the relationships," Tull says. "I think we're developing a really positive approach to building the project."

In business since 1922, Hoffman has made open communication with its customers and subcontractors a top priority from the beginning. "I think probably the most important thing in our business

is openness and collaboration," Tull emphasizes. "You can't over-communicate, and when you have that level of trust with everybody, there's no way you can fail."


### Best and Brightest

Originally a small family company, Hoffman has grown into one of the market leaders in the Northwest. This success is due in part to the company's employee ownership, it says.

"Employee ownership has attracted high-quality staff with expertise in all aspects of construction," it says. ➤

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# Sacramento Staple

+ Nacht & Lewis' focus on public sector work has made it a design force in California's capital region for 88 years. *By Jim Harris*

## Nacht & Lewis Architects

[www.nlarch.com](http://www.nlarch.com)

**Gross revenue:** \$10.8 million

**Headquarters:** Sacramento, Calif.

**Services:** Architecture, planning and construction administration

**Employees:** 40

> For 88 years, Nacht & Lewis Architects' work has been a major part of Sacramento's cityscape. From 1922 – when founder Leonard Starks got his start in the business designing two small community theaters – to today, clients in the public sector in California's capital and the state's northern region have called on the firm's programming, design and construction administration expertise.

"We've always focused in the public realm, with little interest in pursuing residential, commercial or retail design," Principal Brian Maytum says. "We've chosen to focus our practice around our public sector clients."

Major projects include The Sacramento County Courthouse, the Sacramento County Main Jail, the California State Energy Commission Building and the U.S. Federal Courthouse in Sacramento, as well as civic, healthcare and education institutions.

"We are a full-service architectural company," Maytum adds. "You name it, we do it, from programming to design and documentation, through to construction and post-occupancy."

## Varied Experience

Nacht & Lewis' varied experience in the public sector is helping it navigate through the difficult economic terrain experienced by most construction-related companies during the past few years.

"One of the things that has kept us a strong and vibrant firm for 88 years in good times and bad is our firm's diversity."

> Brian Maytum, AIA, LEED AP, principal

Nacht & Lewis Architects' team has amassed an impressive portfolio of public projects in California, including federal and county courthouses and jails.





"One of the things that has kept us a strong and vibrant firm for 88 years in good times and bad is our diversity," Maytum says. "There is a broad net there for our public and governmental clients."

For example, Maytum says the company's work in the K-12 and higher education sectors has slowed down significantly, but its work on correctional and judicial facilities is increasing. "Our success is in being able to manage those peaks and valleys as economic states change," he adds.

The company works to remain strong in markets currently facing a downturn. "We want to remain competitive when those markets rebound," Maytum says. "The challenge is to keep our staff with the experience in our slow markets competitive, and out there in front of existing and prospective clients."

### Central Utility Plant Project

The company is currently in the final stages of completion of construction on a \$181 million renovation to the California Department of General Services' Central Utility Plant in downtown Sacramento. The plant became operational last November.

Nacht & Lewis teamed with international contractor Skanska on the project. The 78,000-square-foot building includes a 10-story tall thermal energy storage tank filled with 4.5-million-gallons of super-cooled water used to increase the facility's energy efficiency during peak demand periods.

Nacht & Lewis didn't have to travel far to get to the plant site, as it is feet away from its office. "It was literally outside of our door, and we have no excuse for being late to a meeting," Maytum jokes.

The project is on track to gain a LEED Gold certification from the U.S. Green Building Council.

### \$500 Million Project

Continuing its pursuit of large projects, Nacht & Lewis is getting ready to begin the initial site selection phase for the new Sacramento Criminal Courthouse, a nearly \$500 million project. The firm has partnered with HOK Architects of San Francisco on the project.

The company also seeks to expand its correctional and judicial facilities planning and design services beyond California, Maytum says.

"Even though California has traditionally been our focus, we realize there is potential for our expertise outside the state, but only in those project types that make up our core markets," he adds. ➤

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# Rock Solid

**+ R&H Construction Co. is building its 10th location for New Seasons Market in Oregon. The commercial contractor says it has excelled in the retail sector.**

**R&H Construction Co. —  
New Seasons Hawthorne**

**[www.rhconst.com](http://www.rhconst.com)**

**Contract value:** \$56 million

**Company locations:** Portland and Bend, Ore.

**Specialty:** Commercial construction

**Employees:** 195

**> For more than three decades, R&H Construction Co. has successfully built commercial construction projects in the Pacific Northwest.** “With a diverse portfolio ranging from small restaurant remodels to large-scale corporate headquarters, R&H takes an individualized approach to each job while upholding our companywide commitment to providing the highest level of service and quality,” the company states.

The construction firm, founded in 1979, operates offices in Portland and Bend, Ore. “Locally owned and operated, R&H specializes in adding value to complex, quality-driven and time-sensitive jobs,” it says.

R&H says that it also has been blessed with a “rock solid” financial history. “The company has focused on slow, steady growth over the years to establish this strength,” the company says. “By keeping equity within the company, R&H has been able to secure excellent bonding rates and banking relationships, guaranteeing our capacity to sustain projects of all sizes.”

R&H also says it has employed the most talented workers in the industry and enjoyed staff longevity. “Of R&H Construction’s 195 employees, 65 percent have been with the company for five years or more, and 16 percent have been with the company for 20 years or more,” the company states.

## Mastering Retail

One sector where R&H has a broad portfolio is retail. “In a field where customer is king, R&H takes service in the retail sector to a new level,” the company states. “Our people have the specific skills to handle tenant improvements and remodels or to build from the ground up.

“R&H has mastered the challenges of meeting grand opening dates, handling

*“R&H takes an individualized approach to each job while upholding our companywide commitment to providing the highest level of service and quality.”*

*> R&H Construction*

customer inconveniences and facing the complexities of the retail world,” the company says, noting that its work includes New Seasons Market locations throughout Oregon. In addition, R&H built its New Seasons’ corporate office in North Portland.

All of the stores “have slightly different construction styles, while reflecting New Seasons’ friendly, customer-oriented identity,” R&H explains. “Examples

R&H says it has enjoyed longevity in its staff.





of the stores' many upscale features include full-service delicatessens, gelato cases, sushi bars and made-to-order meal counters."

R&H is at work on its 10th store for the company, New Seasons Hawthorne in Portland, which is set to be finished in October. The new store will feature a rooftop parking garage and an elevator encased in two glass towers.

In May, New Seasons reported that all steel had been erected on the project. "Trenching for underground plumbing and electrical utilities is also under way," New Seasons says. "The parking deck concrete was poured, and we continue to move forward."

#### The Main Motivator

R&H says that safe practices are an important part of its work culture.

"Setting our sights on zero injuries, we work together to do the job right and protect ourselves from injury, realizing this leads to cost savings and increased productivity," the company says. "The well-being of everyone involved is our main motivator, while our impeccable safety record is simply a reflection of our core values."

R&H says it has set a standard for contractors with its behavior-based safety program in its region. "Our program goes beyond policies and regulations, incorporating education opportunities, coaching and management involvement," the company says.

"Employees keep safety at the forefront by attending monthly safety-related seminars, taking part in OSHA's 10-Hour Safety Training Program and communicating safely with their supervisors,

the R&H safety committee and executives during regular job-site tours," R&H says. According to the company, its entire team earned recognitions for these efforts when the AGC gave it the Recognition of Safety Excellence Award for 2007.

R&H also says that it supports its workers through Building Healthy Strides, a formalized wellness campaign. "Designed to educate and empower employees to make healthy lifestyle choices, the program offers participants incentives such as discounts on health insurance, R&H sponsored entries to local run/walk events, credits for maintaining a regular fitness regime and gift cards for reaching wellness goals," the company says. "R&H is committed to helping our team members build healthier lives, one step at a time." ❧

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# California Greenin'

✚ The California Department of General Services is building a heating and cooling plant to LEED Gold standards and provides for 23 buildings. *By Chris Olvera*

"The design/build approach was very collaborative."

> Joel Griffith, project director



## California Department of General Services

[www.dgs.ca.gov](http://www.dgs.ca.gov)

**Budget:** \$181 million

**Headquarters:** West Sacramento, Calif.

**Scope:** Central plant renovation

**Location:** Sacramento, Calif.

**Employees:** 400

> **The current heating and cooling** plant in Sacramento provides steam, chilled water and compressed air for more than 5.5 million square feet of state-owned office space serving roughly 20,000 employees. The nearly 40-year-old facility has almost reached its operating capacity as construction of state buildings in the capitol area has increased nearly 24 percent.

Between the plant's limitations and Gov. Arnold Schwarzenegger's 2004 executive order that directed the "greening" of state buildings, a new central plant will be built to LEED Gold standards.

Problems with the old plant included original equipment that was beyond the end of its useful life and was overdue for replacement; inadequate emergency power backup and high-pressure steam boilers that were required to run on the highest demand days; a well system that could not continue to deliver the required condenser water for existing central plant loads, nor for the projected growth under the Capitol Area Plan; and a capacity that was unable to provide heating and cooling for the increase in

office space identified in the current Capitol Area Plan and future projects.

## Keeping it Cool

The new 68,000-square-foot central plant will incorporate the latest technology to help the state reduce its energy costs and the amount of water needed within the plant. It will feature eight four-story cooling towers for extracting heat from the buildings, eliminating the need to use well water to extract the heat from the buildings and the need to discharge the same water into the Sacramento River.

The new plant also will incorporate an 11-story, 4.25-million-gallon thermal energy storage tank. With the tank in



place, the state will be able to produce reserves of chilled water during off-peak energy demand times.

Overall, the more technologically advanced new central plant will use less than one-tenth of the water necessary in the existing plant. Solar panels will be installed on the new facility to power the office space within the plant and provide hot water.

Other elements of the plant that will help it achieve LEED Gold status include a "cool roof" to be covered in white plastic to reflect light, trees around the parking area, and a condenser water system that will recycle the water for use in toilets and the irrigation system. "We're using recycled materials, paint with low VOCs and we've minimized construction site waste," Project Director Joel Griffith adds.

### Out With the Old

Griffith says there were plenty of challenges on the project. "We had to build the new plant around the old one, and we had to do it quick because the old plant was failing," he says. "We also had to demolish the old plant and avoid any damages to the new plant. It was a very constrained site."

One of the first elements of the old plant to be demolished was the "gasifier," a giant burner designed to draw off gases from green waste. It was conceived by the environmentally conscious administration of former Gov. Jerry Brown and was intended to burn lawn waste to power state buildings.

Although the plant isn't scheduled to be finished until October, Griffith says it is about 95 percent done. "There have been a couple of last-minute changes,

but nothing too major," he admits.

The central plant was designed and constructed by design/builder Skanska USA Building Inc., a firm Griffith says the department had not worked with in the past and developed a good relationship. "The design/build approach was very collaborative," Griffith explains. "[Skanska] is very concerned about safety. We put in around 500,000 hours of work without any lost-time incidents."

Other members of the team include Sacramento firm Nacht & Lewis Architects, San Francisco's Flack + Kurtz, Lawson Mechanical and Redwood City Electric. A host of other designers and subcontractors also worked with the state and its major consultants, including Capitol Engineering Consultants Inc., Lionakis Beaumont Design Group and Jacobs Engineering Group Inc. \*



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# The Electric Company

**+** Washington-based Madsen Electric's diverse portfolio of projects includes work for the U.S. Army and general contractor Mortenson Construction. *By Alan Dorich*

## Madsen Electric

[www.madsenelectric.com](http://www.madsenelectric.com)

**2009 sales:** \$32 million

**Headquarters:** Tacoma, Wash.

**Service:** Electrical contracting

**Employees:** 90

**> After more than 60 years, Madsen Electric** has earned customer loyalty by working closely with owners, Rocky Sharp says. "They like dealing with us," he says. "They trust Madsen to be fair and honest."

Based in Tacoma, Wash., Madsen Electric specializes in electrical contracting services for residential, commercial and industrial projects. Additionally, the company is a division of the CTM Group, of which Sharp is president.

Madsen Electric's assets include 90 employees who are rich with industry experience, Sharp says. "We have some employees that have been here for 30 [years]," he states, noting that the company has kept its workers loyal with benefits such as a profit-sharing program and strong salaries.

## Whatever It Takes

Madsen Electric recently completed a project for the U.S. Army and general contractor Mortenson Construction at Fort Lewis in Tacoma. For a \$10 million contract, the company completed electrical contracting work on 10 new buildings at the military base.

Although Madsen Electric had previously completed work at Fort Lewis before, "We have never done [a project at Fort Lewis of] this size," Sharp says. He notes that the company had a project schedule of one year.

Sharp notes that the buildings ranged from 15,000 to 18,000 square feet in size, while its short schedule made it difficult. "A compressed schedule coupled with the large scope of works means not only are you working at a feverish pace, but you have to pay particular attention to planning and detail because there's no time to go back," he said.

Additionally, "It has to be right the first time," Sharp continues. "And with

the pace and scope, the opportunities to make mistakes grow exponentially. The successful completion of the project speaks volumes about your managers and wiremen on the job."

However, he notes that the consistent hard work of the company's project managers helped it meet the deadline. "That's the type of people they are," he says. "They're going to do what it takes to get the job done."

*"[Our project managers] do what it takes to get the job done."*

*> Rocky Sharp, president of CTM Group*



Madsen Electric recently completed a project at Fort Lewis in Tacoma, Wash.



He adds that Madsen Electric hopes to take on more work at Fort Lewis in the future. "We certainly would like to go after more work out there," he says. "It's really hard to find out what projects are out at Fort Lewis."

### Strong Opportunities

Sharp joined Madsen Electric in 1992 as a journeyman. He notes that he has stayed loyal to the firm due to its policy of promoting from within. "All of the owners have been employees of the company," he states. "[Our laborers earn] opportunities to move into the office."

Madsen Electric is finding the Northwest market to be challenging. While there is still work, "It's not just enough for all the contractors out there," he says, noting that the company has become leaner and more efficient by tak-

ing the time to revise less efficient business practices and habits. "This is allowing us to be set for the eventual turnaround with better practices so that we can better serve our customers and provide the strongest financial health for our company."

However, Sharp says he is confident in the company's future, as the young employees will bring it fresh perspectives. "[They will] come up with new ideas and new ways to operate the business," he says. "[Young workers are] interested in getting into the new types of construction."

### Family of Companies

Based in Tacoma, CTM Group is a holding company for several electrical firms in the Pacific Northwest. In addition to Madsen Electric, its companies include

Central Electric, Sound Energy Systems, Sound Electronics and Grays Harbor Star Electric.

CTM Group notes that its companies are united by high values and state-of-the-art technology. "In working together as a team, each relies on [the] other's area of expertise," CTM Group says. "From command centers or motor control centers, the CTM Group has the [necessary] technology and experience."

In addition, the firm says its companies are dependable. "Common ownership of each business group brings financial security, bond capacity, a large tool and equipment inventory, and most of all, highly trained and experienced managers," CTM Group states.

"We are a team player that will bring value to a project's start and are there when it is finished." ☛

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# Living History

**+** FCI Constructors helps the Southern Ute tribe share its traditions and culture with the world by erecting a museum in Colorado.

## FCI Constructors

[www.fcic.com](http://www.fcic.com)

**Project total:** \$30 million

**Project:** Southern Ute Cultural Center

**Employees:** 300

**> Perched on a terrace overlooking** the Los Pinos River in southwestern Colorado, the Southern Ute Museum and Cultural Center is inspired by the Southern Ute tribe's powerful connection to their land.

A circular meadow will provide a gathering place at the entrance. A central, conic form – illuminated at night – will welcome visitors and evoke aspects of the material culture: the teepee, wickiup, basket and drum. Paths will meander through native plants, pass a stream and connect it to the surrounding campus. "It is the hope of FCI Constructors and the Southern Ute tribe that the museum and cultural center will inspire visitors to learn about this vibrant culture and teach tribal traditions to future generations," the company says.

The project started in April 2009 and will be finished this fall. The scope of work includes the construction of a two-story, 50,000-square-foot building with 10 acres of site development and infrastructure. Special features of this project include linear wood ceilings, cork flooring, wood veneer paneling, 18-inch-diameter logs, glulam roof framing and structural insulated panels. It also will boast a water feature, vegetated roof system, horse corral and colored glazing. The building's galleries, storytelling room, classrooms, library, curatorial facilities, native plants demonstration garden and administrative suite will contribute to its mission.

*"It is the hope of FCI Constructors and the Southern Ute Tribe that the museum and cultural center will inspire visitors to learn about this vibrant culture and teach tribal traditions to future generations."*

*> FCI Constructors*

FCI Constructors is working with the Southern Ute tribe to build a museum and cultural center to preserve the tribe's rich history and connection to the land.





The Southern Ute Cultural Center and Museum, designed by Jones & Jones Architects and Landscape Architects, is to be the principle repository, conservator and interpreter of the Southern Ute tribe's history, people, stories, culture and artifacts.

The tribe wanted the museum to preserve its traditions and cultures while also sharing those with the rest of the world to ensure that its people's stories will continue to be told and remembered. In programs and exhibitions, its mission is to accurately and vividly portray and preserve Southern Ute history, culture and tradition.

#### The FCI Files

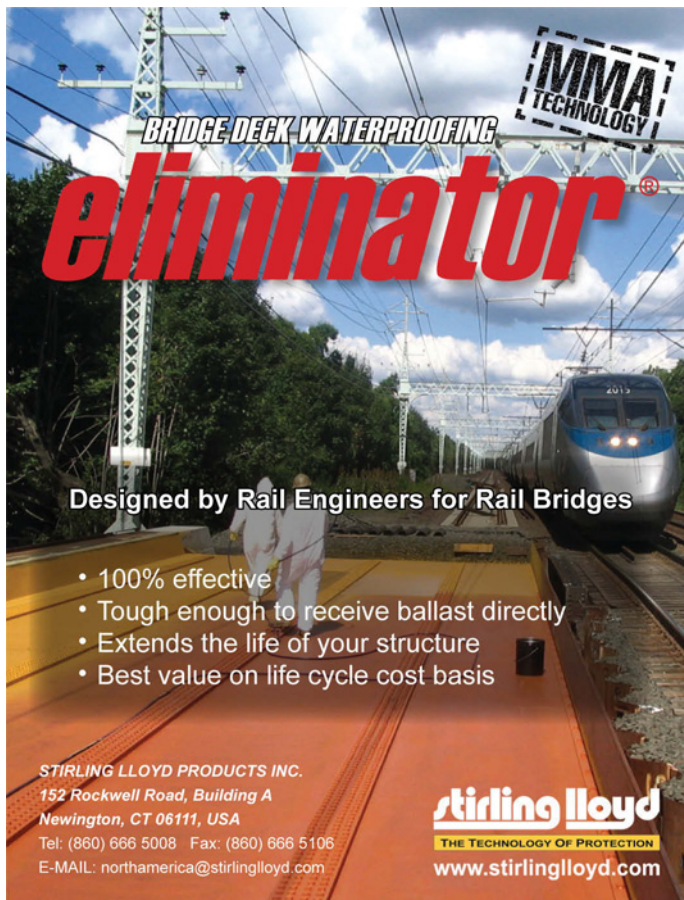
FCI Constructors began building in Colorado in 1978, expanding to Arizona and the surrounding region in 1986. The

company recently moved into Wyoming and New Mexico. Since 1998, FCI has been recognized as one of *Engineering News-Record's* Top 400 Contractors with revenues exceeding \$380 million.

The general contractor and construction manager has six offices in Colorado, Arizona, New Mexico and Wyoming. FCI Constructors' more than 300 employees are dedicated to serving its clients. In the past five years, FCI has completed or has taken under contract more than \$880 million in general contracting, construction management and design/build work. The company has the size and experience to successfully complete the project, regardless of the delivery method. The employee-owners take pride in what they do, and for its clients to ensure smooth transitions from build-concept to project completion.

FCI's physical presence in its states has allowed the company to build meaningful relationships with local subcontractors and material vendors. As a direct result, FCI says it can provide the best possible combination of experience, expertise and craftsmanship while completing projects in less time and for less money than its competition.

FCI has successfully completed commercial and light industrial projects for the public and private sectors. It is an industry leader in the construction and renovation of educational facilities, housing, hospitals, churches, assisted-living facilities, municipal facilities, correctional facilities and justice centers. Other projects include retail stores, fire stations, office buildings, banks, airports, manufacturing facilities, restaurants, bridges and storage complexes. ■



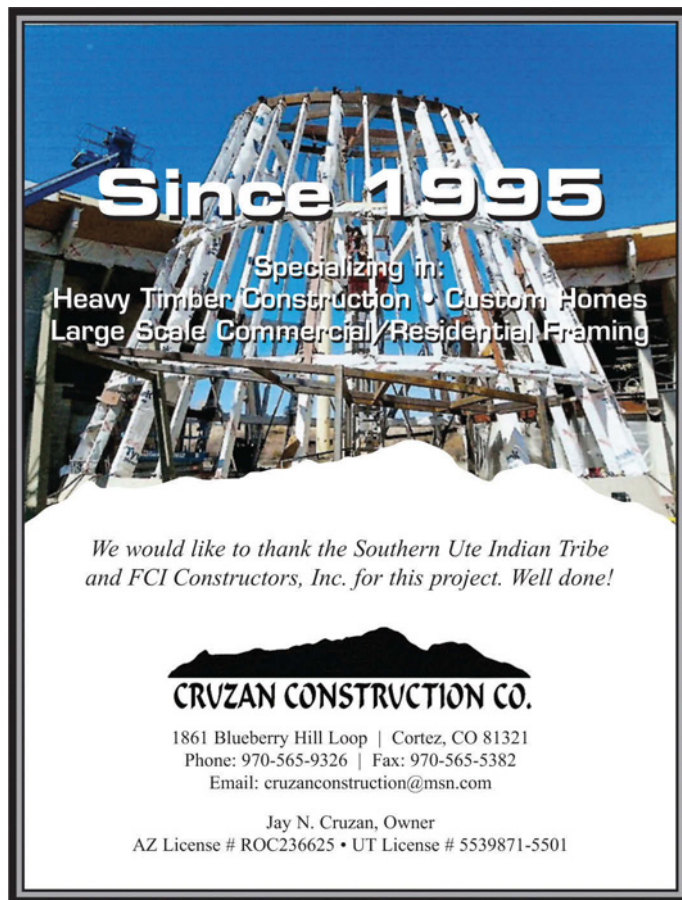
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# A Wide Range

+ Black Roofing Inc. offers installation, repair and top-quality products to customers along the Rocky Mountains' Front Range.

*"We pride ourselves in communicating at all levels with customers, manufacturers, building officials, architects and general contractors."*

*> Black Roofing Inc.*



Black Roofing has worked on a number of notable commercial projects in Denver, including the Museum of Contemporary Art.

## Black Roofing Inc.

[www.blackroofing.com](http://www.blackroofing.com)

**Headquarters:** Boulder, Colo.

**Service:** Roofing contracting

**Employees:** 90+

> **Black Roofing Inc.'s commitment to service and quality** makes it one of Colorado's oldest, largest and most successful roofing companies. The company provides roofing and sheet metal services to the commercial, industrial and residential industries. "We are capable of designing and installing any conventional roof system," the company says.

Black Roofing serves communities along Colorado's Front Range, including Denver, Boulder, Louisville, Lafayette,

Longmont, Superior, Erie, Broomfield, Golden, Arvada, Aurora and others between Fort Collins and Colorado Springs. It also is available for projects in Wyoming, Utah, Kansas and Nebraska.

"We are known throughout the Front Range for service, technical skill, product knowledge and the ability to get the most difficult job done right," the company says. "We pride ourselves in communicating at all levels with customers, manufacturers, building officials, architects and general contractors.

"Our solid business practices, knowledgeable and skilled employees, high standards, and genuine, caring attitude have resulted in our financial strength, project quality, project continuity and, of

course, service you can count on," the company adds.

Company President Tim Black began roofing in 1965 while in high school. He founded Industrial Roofing, which evolved into Black Roofing, in 1975. Dan Zahtila, Black's business partner, joined the company in 1992.

## Range of Services

Black Roofing installs all types of concrete, slate and clay tile, and all shingle products, whether synthetic or asphalt. Products include Tamko, Owens Corning and CertainTeed asphalt shingles, and Tamko and Carlisle synthetic plastic Lamarite and Eco-Star imitation slate products.



The company regularly performs re-roofing projects and regularly employs four to seven low-slope roofing crews. Black Roofing trains all estimators, superintendents and foremen in-house.

Re-roof and new construction roofing installation systems include single-ply roofing, PVC roofing and hot asphalt roofing using Versico/Carlisle, FiberTite and Johns Manville products.

Black Roofing is skilled in installing a wide variety of architectural sheet metal systems and products, including flat roofing sheet metal, metal roof or wall shingles, technical wall flashing, specialized soffit systems and custom cladding projects. Products offered include Berridge Co. Aep-Span, MBCI, Corrugated Metals, Metal Sales Manufacturing, Laminators, Dry Design and Corten. Most of the company's

products offer superior paint systems with 20- or 30-year finish or paint warranties, the company says.

Maintenance services are also offered, with crews on call 24 hours a day. "These crews are all experienced roofing mechanics who are skilled in dealing with difficult problems, temporary waterproofing needs and highly coordinated tenant finish jobs," Black says. "If necessary, we can pull in our commercial construction crews to help and add to our repair or tenant finish capabilities; this department also handles small re-roofs and special needs problems."

Black Roofing averages nearly 2,000 jobs a year. Notable projects include the Denver Justice Center, Botanic Gardens, Museum of Contemporary Art and Denver University. The company also regularly works on the University of

Colorado campus, installing tile in more than 15 buildings there since 1983.

"Whatever roofing system or size, we have consistently proven our ability to perform exceptionally, project after project, year after year," the company says. "From prompt bid responses to pre-job conferences, from materials confirmation to orderly crews, we guarantee your satisfaction."

### Safety First

Black Roofing boasts one of the lowest worker's compensation experience modification rates of any roofing contractor in Colorado, which the company attributes to its safety program. Macario Sanchez, the company's full-time field inspector, regularly visits every job site. Sanchez is 30-hour OSHA trained with six years of full-time experience. ☺



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# Reshaping the Skyline

✚ Hensel Phelps is at work on a large project for Skyline Community College. The work calls for site improvements and the construction of two buildings. *By Kelly McCabe*

*"We've worked with this client before. We are familiar with the campus, the players and we have had success together on past projects."*

*> Charles Chiparo, project manager*



Hensel Phelps is finishing up work on the 40-year-old Skyline College campus. The project entails two buildings and a site improvement package.

**Hensel Phelps Construction Co. — Skyline College CIP2 Design/Build Project**

[www.henselphelps.com](http://www.henselphelps.com)

**Location:** San Bruno, Calif.

**Cost:** \$60 million

**Scope:** Campus site improvements and construction of two academic buildings

➤ **Construction projects on college campuses** pose unique challenges, such as minimal laydown space, heavy pedestrian and vehicular traffic, and a full academic schedule of events. Hensel Phelps Construction is putting its educational sector expertise to use on the \$60 million Skyline College CIP2 (Capital Improvement Program 2) Design/Build Project in San Bruno, Calif.

This is Hensel Phelps' second design/build project with owner San Mateo County Community College District in the past five years. "We've worked with this client before," Project Manager Charles Chiparo says. "We are familiar with the campus, the players, and we have had success together on past projects."

The two parties, along with construction manager Swinerton Management & Consulting, maintain close communication to handle logistical concerns such as traffic rerouting, pedestrian access around – and sometimes through – the job site and more. "Before we alter the campus, we present our plan to Swinerton, the owner, the end-users, facilities, etc.," Chiparo says. "We're always looking three

to six months ahead, to ensure that we mitigate impact to the campus. Skyline College is not a typical construction site. It is an active college campus, and we try to act as their guests. We think that is why we were brought back here for this complicated project."

The two main components of Hensel Phelps' project are Buildings 4 and 11. Building 4 is a 70,000-square foot building that will house Skyline College's wellness, cosmetology and multicultural programs. There are large tiered classrooms, massage stations, hair lab stations and administrative offices.

The building consists of a structural steel frame, GFRC panels, aluminum storefront and curtain wall, and architec-



tural concrete. “There’s also a very nice exterior terrace on the third floor, with views of the ocean on clear days,” Chiparo notes.

Building 11 is a one-story, 7,000-square foot structure that houses the college’s automotive technology facility. It include seven service bays with state-of-the-art hydraulic vehicle lifts, large classrooms, a bench lab in which students can work on transmissions, heavy-duty storage areas and office space. Hensel Phelps obtained substantial completion for that building in April, ahead of schedule.

#### Campus Site Improvements

In addition to constructing the two academic buildings, \$13 million of Hensel Phelps’ contract is for a campus site improvement package. The company is

installing a central water feature, renovating campus roadways, demolishing and rebuilding the school’s quad, constructing a small outdoor amphitheater, and reconditioning parking lots.

“One of the more challenging components of this project is the replacement of the electrical infrastructure on the campus,” Chiparo says. “A portion of it could only be done during winter break and the school’s short break between spring and summer sessions. It has been a team effort, but a large portion of the credit goes to Decker Electric, our design/build electrical subcontractor.”

Skyline College’s facelift is dramatically changing the aesthetics of the 40-year-old school, Chiparo notes. “The campus will be almost unrecognizable to those of us who worked here [on a previous project] five years ago,” he says.

#### Class Act

As a Division of State Architect (DSA) project, CIP2 presented some challenges, but Chiparo says Hensel Phelps’ desire to provide a top-quality end product prevailed. “With DSA, the approval process for drawings can be challenging,” he says. “And because of the current California budget, DSA wasn’t allowed to work overtime or subcontract out a lot of the reviews, as is typical. The review process extended, so we had to compress our construction schedule a bit.”

Hensel Phelps was patient with the process and, in the end, Chiparo says the customer will be satisfied. “So far, we have a very happy end-user,” he says. “We were even able to accommodate some late design requests. It made the final construction push a little harder, but the user won’t have any regrets.” ☺

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Shannon-Leigh Associates congratulates Hensel Phelps Construction for a job well done at Skyline College. SLA is proud to have been Hensel Phelps’ signage consultant. SLA has 20 years of experience with signage planning and design with a proven ability to maintain balance between clients and fabricators. SLA’s team of Signage designers and project managers have a clear goal to protect your budget and time while getting people where they need to go.

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# A JUSTIFIED DESIGN

➤ Nacht & Lewis Architects wanted to ensure its design of the U.S. Federal Courthouse in Sacramento, Calif., was a dignified representation of the nation's judicial system. Learn more about the firm's work on page 74.







# FOR THOSE WHO TACKLE MULTIPLE PROJECTS.



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