Design team for DPR Construction office renovation

Emerald Textiles: Raising the bar on cleanliness

New incentive sheds light on outdoor spaces

New senior center is a hub of innovation

Achieve better building performance with Savings By Design

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Those who had a hand in the energy-sparing, environmentally sound design of DPR’s office renovation included, from left, Carrie Dragman, Bergelectric, Josiah Ives, PE, KEMA Services, Peggy Crossman, SDG&E®, Joe Mucher, PE, Pacific Rim Mechanical, and Jay Leopold, DPR Construction. The custom-made surfboards in the background represent DPR’s four “core values”: integrity, enjoyment, uniqueness and “ever forward.”

DPR office renovation is a breath of fresh air

Natural ventilation is a rare commodity in the sealed confines of a typical office building, but it figures prominently in DPR Construction’s innovative renovation of a 1984 one-story tilt-up. So do natural light, worker comfort, a net-zero energy design, and a host of other smart, practical ways to be kind to the environment on a budget.

To find the LEED® Platinum-pending beauty in the box, DPR’s design-build team faced a particularly demanding client: owner-occupant DPR.

“It took more time on the front end to merge the different interests we had,” acknowledges Jay Leopold, LEED AP, regional manager of DPR San Diego and an occupant of the rehabilitated build-

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DPR office renovation is a breath of fresh air

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ing in University City. “We created a space that respects our employees, our culture and the environment. It also gives us a business model that can be replicated.”

Reclamation at a reasonable cost

“The challenge was to bring the ‘found’ conditions of the existing building into presentable condition,” says lead project architect Jonathan Wood of Callison Architects in Seattle. “DPR showed that, if you’re creative about it, it’s possible to reclaim — at a reasonable cost — a building that has seen better days.”

He described the original building as a type so common in the suburbs by the 1980s that “people don’t blink an eye when they see one today” — tilt-up concrete construction with a panelized roof and mirrored glass walls 20 feet high with the upper 12 feet blacked out so that light only came in through the lower 8 feet. That lined up inside with what Wood called “an 8-foot suspended acoustic ceiling that created a compressed, tight, cave-like space. I don’t think people enjoyed working there.”

A patchwork of repairs — such as the odd bit of plywood or 2X4 bracing, and mismatched concrete slopped in to fill cracks in the slab — completed the less-than-pretty picture.

“It’s inspiring to see the transformation of this building,” says electrical design manager Carrie Dragman of Bergelectric. “Seeing this dark, stale space before we began, you’d never imagine it could have so much natural ventilation and daylighting that the building is approaching net-zero energy use,” due to additional energy-saving measures and a 64-kilowatt, alternating-current photovoltaic system that produces enough electricity to satisfy the building’s annual appetite.

Incentives total $67,815

The design-build team worked with SDG&E’s Savings By Design program on energy performance early in the process, making shell and tenant improvements that achieved 28.9% greater efficiency than required under California’s 2005 Title 24 standards. The renovations earned $67,815 in Savings By Design incentives under the Whole Building Approach – an owner incentive of $50,899 and a design team incentive of $16,916. The 33,387-square-foot project – of which DPR occupies 24,000 square feet and leases out the rest – is designed for ongoing annual energy savings of 149,923 kilowatt-hours of electricity and 871 therms of natural gas, or approximately $24,900 per year at current energy prices.

Extensive modeling by KEMA Services Inc. helped the team refine ventilation and lighting strategies for energy savings and human comfort. An advanced building automation system designed and installed by Pacific Rim Mechanical enables the mechanical cooling system, motorized windows and skylights to operate together, based on outdoor temperature. When outdoor temperatures are within a comfortable range, the motorized windows and skylights automatically open and mechanical cooling shuts down to conserve energy. Prevailing breezes naturally cross-ventilate and stack-ventilate the open office area, a process aided by high-volume, low-velocity, ceiling-mounted fans.

Mechanical cooling is backup

When passive ventilation isn’t enough, a simple but efficient mechanical system kicks in. Joe Mucher, PE,
DPR office renovation CONTINUED FROM PAGE 2

vice president of pre-construction for Pacific Rim Mechanical, says, “The beauty of the space is that you don’t use the mechanical system unless you need it.”

“We’ve only turned on the air conditioning six times since April 2010, when we moved in,” confirms DPR’s Leopold. “The biggest hit for us is having fresh air. It’s almost like being outdoors.”

Modeling maximizes daylighting

KEMA’s simulations also helped determine placement of measures to bring more natural light into the building, including 36 tubular daylighting devices, clerestory windows along the south wall, the skylights and glass roll-up doors. The blackout film was stripped from the existing perimeter windows too. Daylight sensors located throughout the office control the light fixtures. When desktop lighting levels reach 30 foot-candles, the overhead light fixtures automatically shut off.

Occupants can adjust lighting and thermal levels in their immediate areas using manual switches for task lighting fixtures, operable windows and ceiling fans.

“Complaints dropped because they’re involved,” says sustainable design consultant Josiah Ives, PE, LEED AP, of KEMA.

Dashboard displays energy use

DPR workers also have a dynamic digital tool for viewing and comparing their hourly, daily and historic energy use, solar power production and water use. The Building Dashboard® is displayed on a touchscreen monitor off the main lobby of DPR’s office and is posted online for the public at www.buildingdashboard.com/clients/dpr/sandiego. The dashboard, with its ever-changing numbers, is an engaging way to increase awareness of resource use, which can be a step toward reducing consumption.

DPR’s renovation embodies other examples of the environmental ethos of reducing, reusing and recycling resources as well, earning honors such as a 2010 Orchid Award for Sustainable Design, announced at the San Diego Architectural Foundation’s Orchids & Onions Awards ceremony last November, and a statewide Award of Merit for an Interior Renovation in the 2010 Savings By Design Energy Efficiency Integration Awards competition conducted in partnership with the American Institute of Architects, California Council. As architect Wood observes, DPR has shown its clients how to realize “a potentially greater return on investment” by using readily available green measures to bring out the best in existing building stock. “The measures all came together in a unique, comfortable space with a clean and bright personality that complements the DPR working environment and style.”

Whether you’re renovating an existing building or designing a new one, let SDG&E’s Savings By Design program help you make the most of your next nonresidential new construction project. Visit sdge.com/savingsbydesign or contact your SDG&E representative (see Page 8).

DESIGN TEAM

DPR Construction in San Diego created an award-winning regional headquarters from a Disco-era tilt-up, with an energy-saving theme of “bringing the outside in.” DPR’s internal design-build team included Jay Leopold, LEED AP, regional manager; Whitney Dorn, sustainability manager; and project teammates Elizabeth Barrie, Jeff Cole, Jerry McElfresh and Mark Seidl. DPR also tapped lead project architect Jonathan Wood, senior project architect, and Jim Rothwell, AIA, principal, Callison Architects, PC, Seattle; mechanical engineer Joe Mucher, PE, vice president of pre-construction; and Brandon Bailey, project manager, Pacific Rim Mechanical, San Diego; Shayne Rolfe, LEED AP, LEED consultant; and Josiah Ives, PE, LEED AP BD+C, sustainable design consultant, KEMA Services Inc., San Diego; electrical design team Ron Wood, vice president, Carrie Draegman, LEED AP BD+C, electrical design manager, and Sheri Perkins, project manager, Bergelectric, San Diego; and SDG&E representatives Peggy Crossman, senior account executive, and Paul Stapleton, PE, senior engineer.
Imagine washing more than 100,000 pounds of laundry, each and every day, 365 days a year. Now imagine a year’s worth of laundry – all 18,250 tons of it – getting done while saving approximately 40 million gallons of water and more than 700,000 therms of natural gas per year. That’s exactly the service being provided locally by Emerald Textiles, which opened its doors to health-care and hospitality customers last September.

Emerald Textiles: Raising the bar on cleanliness

“Our 111,000-square-foot industrial facility is the first new commercial health-care laundry built in San Diego in more than 30 years,” notes Tom Gildred, chief executive officer of Emerald Textiles. “We designed our plant with the most advanced, green technology available. It’s just one example of our overall commitment to sustainable and environmentally sound practices and products, and one of the reasons why we are the environmentally responsible choice for commercial health-care laundry services in Southern California.”

Earns $500,000 incentive

Incorporating advanced technology and automation, Emerald chose the Systems Approach to maximizing energy performance through SDG&E’s Savings By Design program. This approach encourages owners to consider designing each building system as a whole rather than a collection of individual pieces of equipment or fixtures. Emerald earned the maximum potential Systems Approach incentive of $500,000 for achieving huge savings of 708,450 therms per year compared with standard systems. This also represents ongoing savings of more than $700,000 per year at current energy prices.

Environmentally friendly

Environmentally friendly, energy-efficiency measures that extend throughout the facility include:

• Continuous batch washers with the highest pressure press in the

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Emerald Textiles
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industry that extracts water at the end of the wash cycle.
• Heat exchangers, which draw heat from waste water to preheat incoming water.
• Stack economizers that capture large volumes of hot exhaust gases from gas-fired boilers to heat and maintain temperature in the water storage tanks.
• The most energy-efficient lighting available, including motion sensors in all offices and restrooms, for savings of 71,051 kilowatt-hours of electricity per year, or about $11,370 annually at today’s prices.

With 30-foot ceilings that allow for a full overhead rail system, the facility also employs a fully computerized touch-screen system to completely control the movement of all those sheets, towels, scrubs, and other hospital and hospitality linens throughout the plant.

“We are proud of our collaboration with SDG&E, and the resulting energy-efficient design and equipment,” observes Gildred. “We are especially pleased with the impact we make on San Diego through our energy and water savings.”


DESIGN TEAM
Helping to create Emerald’s facility using the latest technology, re-use principles and energy efficiencies were Tom Gildred, chief executive officer, Victor Heredia, operations manager, and James Hernandez, chief engineer, all from Emerald Textiles; and SDG&E Savings By Design program representatives Craig Bullock, account executive, and Roger Yamasaki, PE, senior engineer.
New incentive sheds light on outdoor spaces

Following on the heels of Savings By Design incentives implemented in 2010 to maximize energy efficiency in nonresidential construction is a new opportunity, added in early 2011 at the request of local architects, engineers and building owners. Now, lighting systems for outdoor parking lots are eligible for incentives when built from the ground up as part of new construction or major renovation projects. Uncovered top floors of parking structures may also qualify, assuming that all criteria are met.

As Chuck Poindexter, SDG&E new construction supervisor, explains the new outdoor lighting incentive for parking lots, “It’s another avenue for customers who are involved in designing a new building that will have parking areas incorporated into the site plan. It’s a way to recoup some of the initial cost of the project and another vehicle for the Savings By Design team to help identify energy savings available through the installation of efficient lighting fixtures, such as LEDs (light-emitting diodes) and induction light sources.”

**Lighting incentive by the numbers**

To qualify, the uncovered outdoor parking lot lighting design must meet California’s 2008 Title 24 nonresidential standards and have an overall lighting power density (LPD) of .08 watts per square foot or less.

Eligible projects will receive an incentive based on the Systems Approach to energy efficiency (since the Whole Building Approach applies only to interior spaces). Your SDG&E Savings By Design representative will sign up and process eligible projects in the same way Whole Building projects with accompanying parking garages were processed in the past. Owners of eligible projects will receive the bigger one of the following two incentives:

- A $1,500 minimum incentive; OR
- A flat incentive of $0.08 per square foot of defined uncovered outdoor parking lot area.

**Two examples**

For example, a 100-foot by 100-foot outdoor parking area with an overall lighting power density of .08 watts per square foot would earn the minimum incentive of $1,500 because the alternative incentive would be smaller: $800 for 10,000 square feet at $0.08 per square foot.

On the other hand, a 200-foot by 100-foot outdoor parking area with the same lighting power density would earn a $1,600 incentive — 20,000 square feet at $0.08 per square foot — because the minimum incentive of $1,500 would be smaller.

Excluded from the new measure are all other outdoor lighting applications that do not illuminate outdoor uncovered parking lots. Examples of exclusions are sidewalks, walkways, bikeways, plazas, and lighting for buildings, building entrances and outdoor sales areas.

For details about Savings By Design incentives or design assistance, contact your SDG&E representative or visit sdge.com/savingsbydesign.
While the building housing the new Gary and Mary West Senior Wellness Center has a history dating back to its 1927 origins as a DeSoto car dealership, its state-of-the-art renovation has created a vibrant place for today’s active seniors. With a significant donation from the Gary and Mary West Foundation, the welcoming facility at Fourth Avenue and Beech Street in downtown San Diego offers medical counseling, recreation, classes in crafts, cooking, fitness, photography and other subjects, a cyber café, and a lunch program serving more than 700 low-income seniors each day.

The facility is welcoming in another way as well. Its energy-saving design helps the nonprofit Senior Community Centers keep the operating budget low so that more funding can be devoted to core programs and services.

With improvements ranging from its new mechanical and electrical systems to its urethane white-foam roofing system rated at 80% plus solar reflectance, the 17,460-square-foot building performs 33% better than required under California’s 2005 Title 24 energy-efficiency standards. That works out to ongoing annual savings of 70,910 kilowatt-hours of electricity and 730 therms of natural gas, or approximately $15,000 per year at current energy prices. As a result, the project earned a total of $34,896 in SDG&E Savings By Design incentives – a $26,173 building owner incentive and a $8,723 design team incentive – shortly after it opened in April 2010.

**Space captures sunlight – and LEED® Gold**

Although the square shape of the building and its position adjacent to the east property line initially limited natural light, prismatic skylights and tubular daylighting devices were used to bring the sunlight indoors. “The main dining room, which seats about 200 people at a time, has rarely used the electrical lighting because of the four large high-performance skylights that bathe the space in natural light almost the entire day,” explains project architect Scott Cairns, AIA, LEED AP, of Smith Consulting Architects.

Renovations included other high-efficiency lighting and control systems, plus high-performance glazing, increased insulation levels, and high-efficiency packaged rooftop air-conditioning units with gas heating and economizers.

“On top of all the energy-efficiency solutions,” Cairns adds, “one aspect of this project that makes it unique is the fact that we received LEED points for reusing 90% of the exterior walls and roof of an 80-year-old building, thus keeping all that material out of the waste stream. We also recycled 97% of the interior demolished material.”

Cairns led the design team’s efforts to incorporate high-performance energy solutions and other environmentally sustainable features necessary to qualify the project for LEED Gold. The U.S. Green Building Council certified the project as such in March 2011 – fortuitous recognition for a facility serving those who need help most in their golden years.

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Achieve better building performance with Savings By Design

Whether your idea of “going for the green” involves money or the environment, SDG&E’s Savings By Design team can help you maximize energy efficiency in your commercial new construction projects. Find out about opportunities for cash incentives, design assistance and training by visiting sdge.com/savingsbydesign or by contacting your SDG&E representative.

New senior center CONTINUED FROM PAGE 7

DESIGN TEAM

The Gary and Mary West Senior Wellness Center is a model for the next generation of senior services thanks to a San Diego-based design team that included: project architect Scott Cairns, AIA, LEED AP, vice president, Gary Baker, LEED AP, vice president of design services, and project manager Jaime Ramirez, LEED AP, Smith Consulting Architects; mechanical engineer Doug Isaaks, PE, LEED AP, vice president, Ken McClendon, project manager, and Martin Lam, PE, mechanical design engineer, McParlane & Associates Inc.; electrical engineer Stéphane Beauvais, PE, now an associate principal with Sparling, which acquired ILA | Zammit Engineering, the electrical engineer of record, in June 2010; Charlie Christenson, EIT, BEMP, LEED AP, vice president, Brummitt Energy Associates Inc., who created energy and daylight simulation models; owner/developer representative Paul Downey, president and CEO, Senior Community Centers; and SDG&E Savings By Design program representatives Peggy Crossman, senior account executive, and Roger Yamasaki, PE, senior engineer.