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Green Design Highlights Burbank's New Civic Center Building

By Robert Carlsen

The city of Burbank is embarking on a civic center master plan redo, beginning with a green Development and Community Services Building that will focus on energy efficiency, improved indoor environmental quality and minimizing the impact of the building on the environment.

Designed by the Los Angeles office of LEO A DALY, the new building will include the Planning and Building divisions, Public Works Department and Parks and Recreation Department, along with a new one-stop permitting counter. The $33 million building is the first phase of the city's Civic Center Master Plan, which consists of a >>

This quarterly features

(Top rendering)
SlurryCarb facility will provide a renewable alternative to coal.

Renderings courtesy of Leo A Daly

new civic plaza, central library, parking structure and pedestrian improvements. It is located near the historic City Hall and downtown Burbank Media Center's malls, shops and restaurants.

Swinerton Builders is the general contractor.

Designed as a LEED building, the project includes daylight harvesting light control systems, water-conserving fixtures and high-efficiency mechanical equipment. Emphasis on sustainable finishes and materials and right to light issues was a natural progression for the design team.

According to Nicos A. Katsellis, AIA, LEED AP, LEO A DALY project manager, the new building is a type II-FR with three floors (including the ground floor) and has a total area of 60,678 sq ft. It has large canopies and full height curtain walls at its main and secondary entrances and its skin comprises primarily of limestone veneer (at the base), pre-cast concrete panels, aluminum composite panels (at the top) and plenty of exterior glazing. The building also incorporates structural brace frames to address lateral loads (including seismic).

Although the city does not yet have a mandate for green buildings, Katsellis says the building was designed for basic LEED Certification.

Bonnie Teaford, Public Works director for the city, says Burbank is working on a green ordinance that will require any new public buildings to be sustainable.

Katsellis says some key strategies that will help the builders meet certification include:

Energy efficiency. Through the design of the building envelope, the lighting systems, and the heating/ventilation systems, the building will achieve an annual energy usage of 20 percent better than Title 24 compliance. This enables the building to qualify for five points under the LEED Energy & Atmosphere Credit.

He says the building envelope is designed with low emittance insulating glazing. Insulation with an R-value of 13 was selected for solid walls and an R-value of 21 for walls with an outward finish of spandrel glazing. Interior lighting is designed to have a power density of 1.09 watts per sq ft for both open and private offices utilizing indirect/direct lighting with T5 lamps. Perimeter spaces of the building are also provided with daylight sensors to reduce overhead electric lighting when daylight is sufficient.

HVAC is designed around an air-cooled chilled water system and gas-fired boiler heating hot water system, Katsellis says. Both chilled and hot water systems operate variable primary water flow allowing pump energy reduction when load conditions are less than the maximum designed. Air handling systems are variable air volume systems optimized for the system maximum load and not the summation of individual space maximum loads. The air handling system is provided with an economizer control sequence based on outside air enthalpy (internal energy content) and not purely on temperature.

Water efficiency. The building incorporates water conservation features, including smart irrigation with partial drip system that has a low water flow and minimizes evaporation loss. The system also uses automated master valve and flow sensor eliminating accidental water losses. Further, the landscape design incorporates low water plants. He adds the building will also use low water flow lavatories, sinks, and showers as well as waterless urinals.

Indoor environmental quality. Katsellis says the building demonstrates design features intended to maximize the comfort level of its occupants including the provision of a ventilation system with a high air-change effectiveness; direct access to airflow, temperature, and lighting controls to the occupants; and a large percentage of exterior glazing on all sides of the building allowing for a daylight factor of at least 2 percent in over 75 percent of the spaces allocated for critical visual tasks.

Though Teaford says the project is currently ahead of schedule, it took a number of years to get approval to begin construction, mainly because of budget constraints.

"Over the past couple of years, the price tag went up $6 million, then $12 million, so much so that the city has gone back to revise its master plan," she says.

But Katsellis says all the delays and hard work have actually worked out quite well.

"Architecture is a profession that deals with problems pertaining to the built environment," he says. "Client requirements are getting ever more complex and deal with many parameters that include, at the very least, program, space, budget, schedule, technology, codes, and cultural settings. Finding solutions that strike a balance is the task of every successful architect and I feel proud of this building mostly because our team was able to strike this balance while at the same time producing an exquisitely elegant building that I feel is truly a piece of art."

The project is slated for completion in July 2008. ■

Del Sur Elementary Aims for Education Design Standards

Construction has begun on Del Sur Elementary School of the Poway Unified School District. Designed by NTDSTICHLER Architecture as a "single building campus," the new school is expected to surpass state energy requirements and provide nearly one-fifth of its energy through a renewable energy source.

"Del Sur Elementary School deviates from your typical school design," says Richard E. Nowicki, AIA, partner of NTDSTICHLER. "By marrying an 'old school' concept with new-age design elements and technologies, we have created a facility that will set new standards for education design."

NTD/EDGE is the general contractor on the 84,260-sq-ft, $29.5 million campus, which is expected to be completed in August 2008

By housing all school functions under one roof, NTDSTICHLER's design will provide the school with energy efficiency at 22 percent below California Title 24 requirements. Reduced exterior wall and roof areas decrease the amount of heating and cooling needed by the school, resulting in lowered costs for the district and an improved physical environment. Additionally, the smaller site required to build a single building campus substantially cuts initial site purchase costs and requires less landscaping and less dependency on irrigation.

Though not yet determined, it is estimated that 19 percent of

the school's energy will come from photovoltaic roof panels. In an additional effort to conserve energy, an Energy Management System will be installed to monitor the use of lighting, equipment, and HVAC systems. Storm water runoff will be minimized, with 42 percent of the school site remaining permeable to rainfall, and a high-efficiency irrigation system with a satellite controller will ensure that water is used only as needed. Finally, 50 percent of construction waste will be diverted from the landfills and will be recycled.

Intended to be a community school, Del Sur Elementary is centrally located within the Del Sur masterplanned housing development, and nearly 100 percent of the school's students will live within a minimum distance. The multipurpose room, complete with a stage and full food service facilities, will be available for joint-use with the community along with the school's athletic fields. A street front location will help to ensure that the school is truly part of its surrounding community. ■

USGBC's Life Cycle Assessment Group Produces First Set of Recommendations

The U.S. Green Building Council's Life Cycle Assessment working group has developed initial recommendations for incorporating Life Cycle Assessment of building materials as part of the continuous improvement of LEED Green Building Rating System. The recommendations include short and long term implementation strategies as well as technical details regarding LCA methodology.

LCA is a scientific methodology that holistically evaluates the environmental impact of a product throughout its life cycle: from the extraction or harvesting of raw materials through processing, manufacture, installation, use, and ultimate disposal or recycling. In buildings it can be used to compare the environmental benefits or detriments of options available to the design team.

"Until now, there hasn't been much work done incorporating LCA into U.S. building practice because of limited research," says Tom Hicks, vice president of the U.S. Green Building Council. "We are venturing into new territory, but as the nation's leading green building organization USGBC has a responsibility to ensure that LEED's evolution addresses LCA in a meaningful and relevant manner."

The LCA working group's recommendation for an initial approach is to undertake LCA of the

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From Pervious Surfaces to Hybrid Light Fixtures, Green Products Lead to LEED

This month, we feature 10 green products recommended by Adhamina Rodriguez, LEED AP, senior project manager at Swinterton Builders in San Francisco


Adhamina Rodriguez

Adhamina Rodriguez has consistently gone the extra mile to share her skill, passion and expertise with others. She has become an integral part of the Green Team and a wonderful ambassador for Swinerton to the community at large. Two causes that Adhamina is particularly passionate about are Green Building and promoting women in construction. Over the years, she has regularly volunteered her time to these efforts, logging more than 120 volunteer hours in 2006 alone. Adhamina has twice received honorariums for her Green classes and speaking engagements, and has generously donated all proceeds to the Swinerton Foundation.

Stanford University has invited Adhamina to speak as a guest Green Building lecturer on multiple occasions. Additionally, she has long been an active participant in Stanford's AEC Global Teamwork program, providing mentorship to engineering and construction students from around the world. Adhamina has also developed a well-received series of weekend classes on Sustainable Design and Construction as part of the San Jose University Professional Development program.

Adhamina is dedicated to promoting the role of women in engineering and construction and was the featured Green Building speaker at last year's groundbreaking Women in Construction conference. She has also volunteered her time to Techbridge, a program deigned to encourage high school girls to enter the field of engineering.

Pervious Surfaces

A variety of products are described at
www.perviouspavement.org

Pervious surfaces (porous concrete or porous asphalt) are used to reduce stormwater runoff. When rainwater runs over impervious surfaces, such as sidewalks, parking lots, or roads, it burdens the municipal sewage and prevents the natural soaking of the soil that replenishes the watersheds. Pervious surfaces filter the water and allows it to reach the underground aquifers. Swinerton's "Kaiser Modesto" project has covered 65 percent of the parking areas (roughly 10 acres) with pervious surfaces. This makes the Kaiser site the largest installation of pervious asphalt west of the Mississippi River.

Cool Pavers

Wausau Tile
Wausau, Wis.
715-359-3121
www.wausautile.com

Cool pavers reduce the heat-island effect. Heat-island effect is the phenomenon that makes urban temperatures 2-10°F degrees higher than in rural areas due to the sun absorption, and later reflection back to the atmosphere. Elevated temperatures increase cooling energy demand and air pollution levels. Cool pavers have a high solar reflectivity, which translates in lower absorbing of heat.

Driwater

Santa Rosa
707-588-1444
www.driwater.com

Driwater reduces the need for permanent irrigation systems and water consumption. Driwater is an organic, nontoxic product for irrigation systems that consists of 98 percent purified water and 2 percent food grade ingredients. It is bound in the form of a gel-like solid that provides consistent subsurface irrigation to plants up to three months.

Cotton-Fiber Insulation

Ultratouch by Bonded Logic
Chandler, Ariz.
480-812-9114
www.bondedlogic.com

Ultratouch has exceptional insulation properties and it is safe for both the environment and humans. UltraTouch is also a Class-A Building Product and meets the highest ASTM testing standards for fire and smoke ratings, fungi resistance and corrosiveness. UltraTouch contains 85 percent post-industrial recycled natural fibers.

Biocomposites

Environ Biocomposites
Mankato, Minn.
507-388-3434
www.environbiocomposites.com

Biocomposites can be used for wood paneling and millwork applications. Biocomposites are manufactured using renewable

agricultural resources such as wheat straw, sunflower seed, or soy beams. We have used them as cabinetry in the LEED-Gold Presentation Center Project in Los Gatos.

Recycled Plastic Paneling

Yemm + Hart Green Materials
Marquand, Mo.
573-783-5434
www.yemmhart.com
These panels are made of 100 percent recycled plastic and have very diverse uses, including restrooms partitions, durable flooring and decorative paneling.

Recycled Countertops

Various Manufacturers
Solid countertops made of recycled glass and concrete, or volcanic lava are becoming very commonplace. A couple of rapidly popular brands of recycled glass are Icestone (based in Brooklyn, phone 718-624-4900, www.icestone.biz) and Enviroglas (based in Plano, Texas, phone 972-276-9451, www.enviroglasproducts.com). For volcanic lava, try Vulcanite from Fireclay Tile Inc. (based in San Jose, 408-275-1182. www.fireclaytile.com).

Recycled Ceramic Tile

Terragreen
Richmond, Ind.
765-935-4760
www.terragreenceramics.com
Terragreen, made from recycled glass, was the brand used in several green Swinerton projects, such as the LEED-Gold Presentation Center, and Hewlett-Packard restrooms renovations in Palo Alto.

Energy Efficient Elevators

Kone Ecospace
Moline, Ill.
309-764-6771

www.kone.com
Kone high-efficient elevators use an "EcoDisk" motor that achieves up to 60 percent energy savings, and it does not require hydraulic oil, thereby eliminating the risk of oil leaks to underground water.

Hybrid Light Systems

Sunlight-Direct
Oak Ridge, Tenn.
865-483-6624

www.sunlight-direct.com
Hybrid light systems collect sunlight with a mirrored dish on the rooftop. This solar collector, which tracks the position of the sun by GPS, is connected by optical fiber to the hybrid light fixtures. These light fixtures are also connected to the electricity. A sensor in the light fixture ensures the delivery of a constant amount of light; therefore, if the sky turns dark, it triggers the electric light in.

HDR Starts SlurryCarb Facility Project

EnerTech Environmental Inc. recently reported the start of construction of its first full-scale SlurryCarb facility in Rialto with HDR Design-Build Inc., the design-build operating company of architectural and engineering firm HDR. HDR has worked closely with EnerTech throughout the design of the Rialto facility, which is expected to be fully operational by the third quarter of 2008.

EnerTech's SlurryCarb process economically produces a renewable fuel, called E-Fuel, from biosolids and other high-moisture wastes. The Rialto SlurryCarb facility will produce approximately 145 tons of renewable E-Fuel from biosolids supplied by five municipalities in the Los Angeles region. The E-Fuel will be used by a local cement kiln as a renewable alternative to coal.

"SlurryCarb represents the future of biosolids management," says EnerTech President Kevin Bolin. "This facility will be a showcase for the SlurryCarb technology and we are pleased to be working with HDR, whose extensive experience with design-build projects in the wastewater industry will ensure the success of this project."

California is a national leader in renewable energy and greenhouse gas reduction initiatives. The Rialto facility will increase the renewable energy capacity in California and help reduce greenhouse gas emissions by producing a renewable fuel that can be used as an alternative to fossil fuels.

"The current focus on renewable energy makes this is an extremely timely and necessary project in Southern California. HDR is proud to be involved in the development of this state-of-the-art renewable energy facility," says Doug Lisak, president of HDR Design-Build Inc. ■

CEMEX'S Davenport Plant Honored for Land Stewardship

The Portland Cement Association and Cement America's Magazine recently presented its 2006 Land Stewardship award to the CEMEX cement plant in Davenport, Santa Cruz County.

The annual award recognized CEMEX for its superior land conservation and environmental stewardship practices on its 10,000 acres.

CEMEX says the plant successfully continues exemplary land restoration projects, such as the reclamation in the Davenport shale and limestone quarries. The company says that each year, the people of the Davenport plant perform habitat restoration and re-vegetation with native trees, perform exotic weed control and exotic tree removal in order to enhance growth of native habits and species, and retain a professional landscape architect to manage the program. They also have created a large forested buffer area around the quarry operation for screening and buffering the neighboring rural community, CEMEX says.

"We are honored to receive this award. This is much more than a title to CEMEX and our Davenport facility. It is a pronounced way of running our operations," said Gilberto Perez, President of CEMEX USA. "For 100 years, the Davenport plant has been a guardian of the Santa Cruz north coast and 10,000 acres of forestland in the state of California. Through these practices and new ones, we intend to keep this commitment to the community and the environment."

The CEMEX property provides special habitat for a variety of wildlife, mammals and bird species, and is home to several endangered and threatened species, the company says, adding that it has set aside ponds and wetlands for breeding and protection areas for the endangered California Red-legged frog.

In addition, in 2006, a portion of the proposed mining operation was determined to be a habitat for the San Francisco Dusky-Footed Woodrat, a California species of concern. CEMEX says its land provides a habitat area for this woodrat and also uses the area for other wildlife habitat conservation. In 2006, the Davenport plant initiated a program that seeks certification in the Wildlife Habitat Council's Wildlife at Work program to enhance wildlife habitat on CEMEX property and to raise environmental awareness with employees and the community.

CEMEX's property serves as a vital watershed for Davenport and New Town, providing for their raw water needs from San Vincente and Mill Creeks. Every year, CEMEX Davenport contributes $160,000 to fund half the cost for Santa Cruz County to treat the community's water and sewage, and provides up to $25,000 to fund capital projects related to the system.

Recent site beautification efforts have included enhancing the entranceway and grounds with additional flowers, shrubs and trees. Eight large storage silos were demolished to improve the aesthetics.

The Davenport cement plant was also named a finalist for the PCA's Community Outreach category for demonstrating extraordinary efforts in community stewardship activities undertaken in the past year and as a finalist for the Overall Environmental Award for exemplifying the plant's commitment to the environment and energy efficiency conservation. ■

SF Task Force to Boost Green Construction

By mid-June, San Francisco Mayor Gavin Newsom says his Green Building Task Force would issue recommendations for increasing the number and quality of green buildings in the city.

Assembled as part of his Clean and Green Initiative and Climate Action Plan, Newsom says his Green Building Task Force is charged with developing expanded green building standards for major new private construction projects in San Francisco.

The Task Force is composed of leaders in the fields of sustainable design, real estate development, finance and construction and will advise the Planning Department, the Department of Building Inspection, the Department of the Environment and other city agencies on the development of new regulations and incentive programs to support the construction of green buildings in the city.

The Task Force follows the successful introduction of new priority permitting for private development projects that meet a minimum gold LEED standard. In 2004, the city mandated that all city projects meet -- at minimum – the silver LEED standard.

"In just a few short months, the city's fast-track permitting process has resulted in more than a dozen proposals for new green buildings," says Mayor Newsom. "The Green Building Task Force has built on that momentum and will look at the next steps that we can take to keep San Francisco at the forefront of environmentally responsible urban development."

Green Building Task Force members include: Kirsten Ritchie of Gensler, Margie O'Driscoll of the American Institute of Architects California Chapter, Ken Cleaveland of the Building Owners and Managers Association, Ezra Mersy of Jackson Pacific Ventures, Charles Breidinger, a San Francisco-based engineer, developer and member of the Building Inspection Commission's Code Advisory Committee, Ken Seibel of Tishman Speyer, Peter Liu of the New Resource Bank, Bill Worthen of Simon and Associates, Mike Kerwin of Lorax Development, Phil Williams of Webcor Builders, and staff from the mayor's Office of City Greening, Building Department, Planning Department, and Department of the Environment. ■

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assemblies that constitute a building's structure and envelope. The assemblies will be ranked according to their environmental impact, with LEED credits awarded accordingly. This will provide a relatively quick, yet significant, infusion of LCA within LEED. USGBC's long-term objective is to make LCA a credible component of integrated design, thereby ensuring that the environmental performance of the whole building takes into account the complete building life cycle.

With the working group's reports now in hand, the LEED Steering Committee will begin considering the recommendations of the LCA Working Groups with a goal of completing an LCA plan by the end of 2007. To facilitate the plan's development and ensure technical and practical effectiveness, USGBC is contracting with LCA expert Greg Norris, Ph.D., president of Sylvatica, Inc., as project manager.

USGBC has long recognized the value of incorporating LCA-based credits into the LEED rating system. Any LCA-based LEED credit must meet two essential requirements:

1) Level playing field: The LCA basis of the proposed LEED credits must provide a level playing field – one that is fair and objective – based on a consistent methodology applied across all products and at all stages of their production transport use and disposal or recycling at end of life.

2) Practical use: LCA is inherently complex and the LCA tools and methods used for LCA-based LEED credits must be very practical and intuitive for designers, specifiers and facilities managers to use at appropriate stages in the life cycle of buildings.

The working groups are part of the "LCA into LEED" project, which was commissioned as an advisory group by the LEED Steering Committee to engage critical LCA stakeholders. Over 60 volunteers representing LCA experts, manufacturers, trade associations, academia, federal government, nonprofits, and USGBC LEED committees are involved in the project. ■