



#### Award Category

Integrated Design Process

#### Green Features

96% construction waste diverted from landfill

Eight week pre-occupancy drying period

Green housekeeping program

Low-VOC paints and materials

Radiant floor heating

Bicycle storage and showers

61% reduction in landscaping water consumption

40% reduction in interior water consumption

#### Annual Energy Savings

26% greater energy efficiency than Title 24 standards

#### Size

11,000 ft<sup>2</sup>

#### Cost

\$6 million

#### Completion Date

January 2007

# University of California, Berkeley Early Childhood Education Center

UC Berkeley's new childcare facility provides daycare for seventy-four infants and toddlers and houses an early childhood development research center. Integrated design collaboration has produced a healthful environment that nurtures young building occupants with a reduced ecological impact.

Developing a vision for the new facility began with meetings between a group of teachers and managers in the Childhood Education Program. Several of those involved in the discussions had experienced problems with lead and asbestos in the program's older buildings. These shared experiences led the group to agree that using low-toxicity materials to create a healthful environment should be a primary component of a larger "spaces for children" design plan.

The project architect proposed using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) rating system as a guide for designing a healthy building. LEED is the industry standard for the design, construction, and operation of high performance, sustainable buildings. Several sections of the rating system address occupant health through improved indoor air quality and green materials selection. The program staff agreed that the complementary goals of the new Center and LEED made the rating system a useful framework to follow.

A design review committee met every two weeks to discuss the project. As the plans progressed, enthusiasm for designing the building to meet green criteria grew. UC Berkeley's increasing commitment to sustainability prompted UCB's Capital Projects department and the Childhood Education Program to take the extra step and pursue LEED certification.

Capital Projects applied for a Green Building Grant from the Alameda County Waste Management Authority (ACWMA) to support the campus's LEED certification efforts. Funds were requested to cover the project's registration fee and secure a consultant to document LEED credits. Additional money was requested to implement a program that would use the commissioning processes required by LEED to train campus staff. The training program is seen as an important precursor to institutionalizing green commissioning activities within

the campus's internal commissioning process, and ultimately extending them to most facilities owned and operated by the University.

A \$60,000 grant was approved by the ACWMA, forming a crucial partnership that enabled the project to pursue LEED certification and begin the new commissioning training program.



Using drought-resistant plants and mulch reduces landscape irrigation by 61% per LEED guidelines. Photo: Jonathan Martin.

The project architect encouraged all user groups to comment on the building plans during the design phase. Representatives from the custodial staff expressed concern that the slope of the garbage enclosure was too steep. The architect remedied this by redesigning the site to make routine maintenance more expedient. Others voiced concern that exhaust from the adjacent parking structure might impact the air quality of the outdoor play yard. A concrete wall was designed to separate the two spaces, and air intakes were located appropriately to protect indoor air quality.

Community residents were also invited to comment on the architectural drawings, as the facility is located off-campus. While the University has found that residents often take issue with the design of off-campus developments, no one at the meetings expressed opposition to the new Center. This may be a result of the architect's efforts to satisfy the Southside Plan, a collaborative document developed by

### Additional Awards

Expected to achieve  
LEED-NC Silver

### Contacts

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### Team

Architect:  
JSW/D Architects  
Civil Engineer:  
Franco Civil Engineering

Structural Engineer:  
Ingraham-DeJesse  
Associates

Mechanical Engineer:  
Fard Engineers

Landscape:  
Chuck McCulloch  
Landscape

Contractor:  
Villa Construction

LEED Consultant:  
Andrea Traber

### More Information

[www.jswdarch.com/projects/currentProjects/ecec.html](http://www.jswdarch.com/projects/currentProjects/ecec.html)

[www.housing.berkeley.edu/child](http://www.housing.berkeley.edu/child)

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

the City of Berkeley and the UC that defines appropriate architectural features for new construction projects on Berkeley's Southside.

The Plan sets out specific policies intended to preserve and enhance the unique physical character and rich architectural history of the Southside neighborhoods. New developments are required to reflect and reinforce desirable design elements found in existing structures.

The Center complements the character of the neighborhood through the use of articulated volumes, pitched roofs, overhangs, and paned windows. These structural features provide a sense of continuity with the existing building stock. Additionally, the building is scaled to be compatible with the existing streetscape, allowing it to integrate successfully with its surroundings.



Children enjoying the Center's tire swing.  
Photo: Jonathan Martin.

Scaling the building appropriately was equally important to create interior spaces that are comfortable for small children. Small-sized rooms emulate a familiar homelike setting. Materials commonly found in the surrounding residencies are used in the Center to further support this programmatic goal.

Materials that are safe for children as well as environmentally responsible are used extensively in the Center's interior. SkyBlend particleboard cabinetry is made from 100 percent post-industrial waste wood fibers.

Formaldehyde emissions from this product are less than .01 ppm, the same level as outdoor ambient air. The Mohawk carpet contains 15 percent post-industrial recycled content. It also meets the Carpet and Rug Institute's Green Label Plus standards, which ensure low-emissions criteria are satisfied for thirteen chemicals. The interior walls are coated with Benjamin Moore Eco Spec® paint, which contains less than 10 grams of VOCs per liter. For comparison, a product must have fewer than 200 grams per liter to qualify as low-VOC.

**Toddlers have a higher metabolic rate than adults and therefore consume oxygen at a higher rate. This exposes them to greater levels of contaminants relative to their body mass, making them extremely vulnerable to toxins.**

A green housekeeping policy is in place to maintain the facility in a healthful manner. Only low-toxicity cleaning products are used inside the building and on the grounds. Infants and toddlers are known to touch and chew everything, making green cleaning procedures an important step in preventing children from ingesting harmful toxins. Additionally, the products do not emit the noxious fumes associated with conventional cleaners, which protects indoor air quality and little lungs.

### LESSONS LEARNED

Project Manager Sally McGarrahan cites the importance of incorporating LEED into basic design decisions. "If you start thinking of [LEED] after fundamental site and system questions are already determined, it will be almost impossible to achieve enough credits," she advises. She also recommends including compliance with LEED requirements in the contractor payment schedule. Incorporating this language into contracts helps to ensure that the project's sustainability goals are a shared priority of the entire team.

*Best Practices* is written and produced by the Green Building Research Center, at the University of California, Berkeley.

The Best Practices Competition showcases successful projects on UC and CSU campuses to assist campuses in achieving energy efficiency and sustainability goals. Funding for *Best Practices* is provided by the UC/CSU/IOU Energy Efficiency Partnership.



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