

County of Santa Clara
Santa Clara Valley Health & Hospital System
Agency Administration
Facilities



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DATE: February 24, 2009

TO: Board of Supervisors

FROM: 
Kim Roberts
SCVHHS - Chief Executive Officer

SUBJECT: Green Building Recommendations for Santa Clara Valley Medical Center Seismic Safety Project Bed Building 1

RECOMMENDED ACTION

Consider recommendations relating to the Santa Clara Valley Medical Center Seismic Safety Project.

Possible action:

- a. Accept staff report on the Leadership in Energy and Environmental Design (LEED) for New Construction version 2.2 building rating system established by the U.S. Green Building Council and the evaluation of renewable and/or alternate energy sources for the design of Bed Building 1.
- b. Accept staff recommendation to pursue the attainment of a LEED Gold rating for the Bed Building 1 project.

FISCAL IMPLICATIONS

There is no impact on the General Fund as a result of these actions. The General Obligation Bond (Measure A) was approved by the voters of the County on November 4, 2008. The cost of LEED certification for Bed Building 1 is \$37,000. The funding is available from the Seismic Safety Project funds in the Santa Clara Valley Medical Center (SCVMC) Capital budget. The additional construction cost beyond County Green Building Policy to meet Gold certification will be fully offset by the PG&E's Savings by Design expected rebate of \$500,000.

REASONS FOR RECOMMENDATION

In April of 2006, the Board of Supervisors adopted the Green Building Policy for purposes of constructing and maintaining County owned buildings in a manner that provides for efficient and sustainable usage of building materials; provides for water and energy conservation; provides for healthy work environments; and reduces waste and pollution from building construction, maintenance and demolition.

The Leadership in Energy and Environmental Design (LEED) program is the most extensive, authoritative and well recognized standard that distinguishes "green buildings" from other buildings. The Board's policy requires County departments to follow "green building" concepts and the LEED program and its guidelines for design, construction, maintenance and demolition of buildings.

The LEED program has four levels of "green building" performance - Certified, Silver, Gold, and Platinum. The Board policy requires a recommendation to the Board of Supervisors regarding the appropriate level of LEED certification and the resulting benefits and costs. The County may construct a building to LEED standards but forgo the administrative costs of pursuing formal LEED certification recognition from the United States Green Building Council. Currently there are two County projects seeking LEED certification: (1) the Crime Lab (Silver rating) and (2) Valley Health Center at Milpitas (Certified rating).

The Board's policy also establishes: a design goal to exceed California Title 24 Building Code energy consumption regulations; control of storm water runoff in accordance with the requirements and procedures set forth in the Santa Clara Valley Urban Runoff Pollution Prevention Program; and the evaluation of renewable and/or other alternative energy sources during the design of new buildings.

LEED Certification for Bed Building 1

SCVHHS Facilities and the project design team have determined that Bed Building 1 (BB1) can achieve a LEED Gold certification because of the use of high energy efficiencies and sustainable design features already incorporated into the design of the building, and recommends pursuing formal LEED certification. The LEED checklist attached shows the present evaluation of the project and how the points were achieved. Only three hospitals in the United States have achieved a Gold rating and as yet none in California.

A LEED rating is a benchmark of environmentally sustainable design and construction practice. Attainment of a LEED Gold certification is consistent with the County's Green Building Policy and the Santa Clara Valley Health and Hospital System's Sustainability Program goals. The attached table illustrates County Green Policy and efforts involved in the various levels of LEED. The program:

- Promotes “high performance” building practices through sustainable site design, water efficiency, energy efficiency, sustainable material selection and overall environmental quality
- Encourages use of environmentally preferred products and practices, improvements in employee health, comfort, productivity and reductions in operating costs and environmental impacts
- Promotes practices that can improve patient health outcomes, such as shorter hospital stays and need fewer medications

Achieving formal LEED certification would be evidence of the County’s leadership in sustainable design and energy conservation as measured by recognized national standards and provides a model for other jurisdictions, the private sector, and County residents as well as setting a national standard for public hospitals. The administrative cost for pursuing the formal LEED certification is estimated to be \$37,000, or less than one-tenth of one percent of the estimated construction cost.

LEED certification provides the owner of a certified building with a plaque that demonstrates to employees and the public that the owner is committed to a favorable work environment, and increases employee and public environmental awareness.

Further, LEED certification demonstrates government leadership and commitment to environmental stewardship. It demonstrates to the voters that the County is putting its investments not only into leadership in health care, but also into stewardship of the environment through energy conservation and sustainable design.

For these reasons, SCVHHS Facilities recommends pursuing the attainment of a Gold rating.

Evaluation of Renewable and/or Other Alternative Energy Sources

The County's Green Building Policy requires an evaluation of renewable and/or other alternative energy sources during the design of new buildings. A detailed energy analysis for the design of BB1 was completed by the Anshen + Allen design team. The attached LEED Energy Model Report summarizes the results of this study.

The report illustrates the makeup of the mechanical system being designed for the BB1 and shows that this design will exceed typical new construction standard performances. In addition, the report confirms that the Photovoltaic panels (renewable energy system) now being constructed on two parking structures on the SCVMC campus will provide over 1MW of the daily estimated energy costs to run the building.

SCVMC is currently constructing a large photovoltaic (PV) system on two parking structures on its campus. This PV system is intended to act as a campus-wide power source and will contribute toward the LEED rating of Bed Building 1. Since the space available on the roof of BB1 is very limited, SCVMC does not recommend implementing a separate PV system on this building.

In addition, SCVMC has submitted the BB1 Project for inclusion in PG&E’s Savings by Design Program. Since the building is designed to an energy efficiency over 43% greater than California Title 24 standards the project is eligible for a \$500,000 rebate. PG&E has finalized their calculations, and this amount will be payable to the County upon completion of the project. (See attached PG&E worksheet.)

BACKGROUND

Bed Building 1 is the major element in the Seismic Safety Project, Stage I. This project is a six-story, 370,000 gross square foot inpatient building which will house 168 single patient rooms in Intensive Care, Rehabilitation and transitional Acute Care nursing units.

In keeping with the Board's Green Building Policy, the SSP Project team has incorporated energy savings and environmentally friendly and healthy design principles onto the design. From the start, SCVHHS has set an aggressive goal to reduce energy usage in Bed Building 1. Both the directions given to the design team and the project budget anticipated features to reduce energy use and incorporate sustainable design features while maintaining a healthy and code-compliant facility.

The building is designed to provide high performance standards associated with a healthy indoor environment along with energy and water efficiency, and will exceed the energy standards of the Green Building Policy and Title 24 California Building Codes equivalent requirements for health care projects. These features will translate into a reduction of energy use of over 43% compared to California Title 24 requirements or 25% compared to ASHRAE 90.1 – 2004 requirements (and +36% over ASHRAE 90.1 including the savings from installation of the photovoltaic power system on the top of the existing Parking Structure 1 and Parking Structure 2 currently under construction). The photovoltaic power system on Parking Structures will provide approximately 1 MW of alternate energy source for the campus.

U.S. Green Building Council

The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) is the nation's leading green building rating system. It promotes "high performance" building practices which conserve energy, water and materials. It also encourages use of environmentally preferred products and practices, improvements in employee health, comfort, productivity and reductions in operating costs and environmental impacts.

Many governmental agencies including nearby Alameda and San Mateo Counties, and the cities of Berkeley, Los Angeles, Pleasanton, San Diego, San Francisco, San Jose and Santa Monica require or support LEED designs for their building projects.

The LEED program currently does not offer a standard for inpatient hospital buildings as the healthcare sector has been slower to adopt green building practices than have other building types. The nature of patient care building systems including the 24 hour/7 days a week operational demands, (specifically, the high-level requirement for 100% air exchange) has made achieving traditional energy savings difficult for hospitals. However, the LEED program promotes improved occupant health, which is a synergy with the goals of a healthcare facility.

LEED ratings are based on a point system, with various levels requiring additional points. LEED "Certified" requires a minimum of 26 points. "Silver" requires a minimum of 33 points. "Gold" requires a minimum of 39 points and "Platinum" requires a minimum of 52 points.

SCVHHS Facilities staff are confident the BB1 project can achieve a LEED Gold rating. Specific characteristics of this project recognized by LEED Gold certification include:

- Enhanced exterior wall system to minimize heat loss and gain, and improve patient and staff comfort
- Low-VOC (volatile organic compounds) building materials to reduce indoor air pollution
- Water efficient plumbing fixtures
- Photovoltaic cells on parking structures
- Three green roof areas to reduce surface water runoff and improve views from patient rooms
- Recycling of a high percentage of construction waste
- Use of sustainably harvested wood
- Healthy, energy-efficient ventilation system
- Landscape design to minimize irrigation
- Exterior lighting to reduce night-time light pollution

SCVHHS Facilities and the project design team do not recommend the Platinum rating due to the nature of the additional strategies, the impact on the Hospital's operations and the construction cost. For example, the treatment of ½ of the wastewater to tertiary standards would not be acceptable to OSHPD and not using potable water for the irrigation would require development of waste water treatment on the Hospital campus.

CONSEQUENCES OF NEGATIVE ACTION

The Seismic Safety Project may not have adequate direction regarding LEED rating and renewable energy features for Bed Building 1.

STEPS FOLLOWING APPROVAL

Provide Keyboard notification to the Duane Oberquell, Director of SCVHHS Facilities.

ATTACHMENTS

- County Green Building Policy
- Comparison of County Green Building Policy with efforts to meet LEED various rating levels
- LEED for New Construction v.2.2, Registered Project Checklist for the Replacement Bed Building 1, Estimate of LEED points (provided by Anshen+Allen (A+A))
- LEED Energy Model Report

- PG&E Savings By Design - Utility Incentive Worksheet