

**SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



FROM: Supervisor Roy Wilson

SUBMITTAL DATE:
February 10, 2009


SUBJECT: Board Policy H-29, Sustainable Building Policy

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve proposed Board Policy H-29, Sustainable Building Policy; and
2. Direct all County departments, agencies, special districts, and authorities to comply with Board Policy H-29.

BACKGROUND: The proposed Board Policy provides specific guidance for the design of public facilities projects and certain improvements or works under the purview of the Board of Supervisors, and vests the authority for its implementation with certain officers, departments, and bodies established by the Board.

(Cont'd)



Roy Wilson
Supervisor, 4th District

BACKGROUND: (continued)

The County of Riverside is presently engaged in a significant capital improvement program that is intended to provide adequate facilities for the county's workforce, which is expanding continually in response to the growth in the county's population. The attached policy has been developed as part of an effort to ensure that future county facilities are constructed in a manner that makes them as efficient and environmentally friendly as possible.

County facilities should be financially viable to operate, easy to maintain, and durable, and they should also contribute to the productivity and well-being of those who work in and visit county properties. The county has the opportunity to require that its facilities serve as models of responsible stewardship of natural and financial resources, and be considered an enduring legacy that will remain useful to the public for a hundred years or more.

A study was made to assess the cost and benefits of sustainable public buildings using Leadership in Energy and Environmental Design (LEED™) criteria for the State of California. 33 public buildings were studied and assessed in detail to determine the additional cost of each building component in comparison to the costs associated with a conventional building of the same design; the results are outlined below:

- Average additional cost for LEED™ certification was slightly less than 2%
- Investment in sustainable design yielded average life cycle cost savings of ten times the original investment
- The earlier sustainable design concepts were introduced into the process, the lower the cost
- | <u>LEED™ level</u> | <u>Average Cost Premium</u> | <u>Energy Savings</u> |
|--------------------|-----------------------------|-----------------------|
| Certified | 0.66% | 28% |
| Silver | 2.11% | 30% |
| Gold | 1.82% | 48% |

Under the proposed policy, Facilities Management would be responsible for developing, updating, and distributing specifications and standards for public building projects to ensure that they comply with the Sustainable Building Policy.

The policy would not apply to infrastructure projects that are not designed for human occupancy (e.g. street improvements, water or sewer system projects) carried out in the normal course of business by the Riverside County Flood and Water Conservation District, Riverside County Parks and Recreation District, Transportation and Land Management Agency, Riverside County Housing Authority, or the Redevelopment Agency for the County of Riverside. These agencies and districts must adhere to specific government statutes for these types of public works projects.

COUNTY OF RIVERSIDE, CALIFORNIA

BOARD OF SUPERVISORS POLICY H-29

SUBJECT: SUSTAINABLE BUILDING POLICY

I. PURPOSE

It is the intention of this policy to establish the use of sustainable building practices in the design of county capital improvement projects in order to reduce pollution, protect natural resources, enhance asset value, optimize building performance, and create healthier workplaces for county employees.

Sustainable building design (sometimes referred to as "green building design") will help to reduce operating costs associated with heating, ventilation and air conditioning (HVAC) systems, lighting systems, municipal water consumption, storm water management, solid waste disposal, and recycling.

Sustainable buildings are designed to use as little energy as possible, with minimal or no use of fossil fuels. By providing these types of buildings, the county's utility costs will be demonstrably lower since the largest building operating costs are incurred through the use of artificial lighting systems and HVAC systems (for both heating and cooling cycles).

There is no single technique for designing and building a sustainable building, but sustainable building projects frequently include environment-friendly features, such as:

- Preservation of natural vegetation
- Conservation of natural resources
- Extensive use of non-toxic and/or recycled-content building materials
- Use water and energy efficiently
- Use of certified sustainable wood products
- Maximized access to natural lighting
- Incorporation of recycling facilities
- Convenient access to public transportation
- Flexible interior design to minimize tenant improvements when reassigning space
- Recycling of construction and demolition waste
- Maintenance of good indoor air quality with little or no off-gassing from volatile organic compounds (VOC)

County facilities should be financially viable to operate, easy to maintain, and durable, and they should also contribute to the productivity and well-being of those who work in and visit them. In addition, county facilities should serve as models of responsible stewardship of natural and financial resources and be considered an enduring legacy that will remain useful to the public for a hundred years or more.

II. POLICY

This policy shall incorporate by reference the latest version of the LEED™ rating system, a nationally recognized standard used to rate the performance of buildings and guide project design, in order to achieve the benefits of green building. The LEED™ rating

system components include sustainable site design, water efficiency, energy and atmosphere, indoor environmental quality, and materials and resources.

The use of LEED™ criteria reduces operating costs, enhances asset value, optimizes building performance and creates healthier workplaces for county employees and visitors. The county therefore declares its intent to promote green building practices and low impact development in the design, construction and management of all county-owned capital facilities.

All county building projects initiated on or after March 1, 2009 shall meet the criteria for LEED™ certification under the LEED™ Rating System, or a county-approved equivalent.

- For new building projects exceeding 5,000 square feet, LEED™ certification shall be sought unless the Board of Supervisors determines it is not practicable or appropriate considering such things as the type of structure (e.g. certain utility structures), available resources, construction costs, and life-cycle costs.
- For new projects under 5,000 square feet and for remodels and renovations where the scope of the project or type of structure limits the ability to achieve LEED™ certification, county departments shall incorporate cost effective green building practices based on estimated life cycle cost analysis and the limits of available funding.
- Departments affected by these policies are encouraged to budget for and attend sustainable building training and/or obtain LEED™ accreditation.
- All county building projects shall have a LEED™ accredited professional on the development team. LEED™ accreditation, experience, and abilities related to sustainable building design and low impact development design, engineering and construction will provide compliance with the intent of this Policy.
- For existing buildings, or for integration with existing structures, the county encourages the use of LEED™-EB (Existing Buildings) criteria.
- The county shall encourage the use of LEED™ building practices and low impact development in private development projects through its land use regulations, building codes, and development standards.

III. PERFORMANCE TARGETS

The following performance targets and goals should be met or exceeded:

- Design to the highest current version LEED™ rating approved by the County.
- Determine early in the process if a LEED™ application will be made.
- Design the site respecting all living systems.
- Search for opportunities to restore biodiversity and leave the site with more vitality than it had previously.
- Design as if each drop of water falling on the site stays on the site.
- Minimize the use of water first, then collect, reuse, and clean water on site.

- Establish energy effectiveness and performance goals prior to design using energy modeling to establish baseline data for the site. The following may be used: achieve a minimum of 40% more energy efficiency than a base building designed to meet ASHRAE 90.1, 1999, using LEED™ and ASHRAE (American Society of Heating, Refrigeration and Air Conditioning) energy modeling protocol as a basis for comparison.
- Establish a goal for renewable energy prior to design, (e.g. a goal of 5% renewable energy).
- Select regional building materials (within a 500 mile radius of the site) that balance: energy efficiency in the building; human and environmental health and safety; durability, maintenance and performance; resource limitation; and waste management.
- Create indoor environments that promote health and well-being by optimizing day lighting, effective ventilation, and the use of non-toxic materials.

IV. COMMISSIONING

In order for building systems to perform to their intended performance goals, it is imperative that building commissioning be performed. Commissioning is the process for achieving, verifying, and documenting the performance of a facility, and is used in part to determine whether the systems within the facility meet the design intent, and to ensure that it meets the functional and operational needs of the personnel it serves. A successful commissioning plan creates a procedure for documenting performance of a building's systems, strengthens communication between all parties throughout the project, and confirms the performance of building systems.

When the project is seeking official LEED™ certification, the commissioning prerequisite is to be completed as outlined in the LEED™ Reference Guide. The commissioning agent shall be involved throughout all phases of the building process, from the programming phase to the post occupancy phase. The following systems shall be commissioned at a minimum:

- HVAC systems and controls
- Lighting systems and controls
- Renewable energy systems
- Day lighting systems
- Energy generation systems
- Life safety systems
- Emergency power systems
- Water recycling systems

V. DEFINITIONS

- "Green building practices," as defined by the U.S. Green Building Council (USGBC) LEED™ Program, are practices that conserve resources, use recycled content materials, maximize energy efficiency, and otherwise consider environmental economic and social benefits in the design and construction of a build project.
- "Leadership in Energy and Environmental Design" or "LEED™" is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.

- LEED™ rating system means the most recent version of the Leadership in Energy and Environmental Design, or other related LEED™ Rating System (such as for Commercial Buildings and Existing Buildings) approved by the USGBC.
- “Life-cycle cost” represents the full costs, including financing, for designing, constructing, operating, and decommissioning a facility based upon the useful life of the facility and its components.
- “New construction” is any new building or structure.
- “Remodel” is to add on to or modify the structure of an existing building or structure.
- “Renovate” is to improve, repair, or upgrade the condition of a building or structure.
- “U.S. Green Building Council” (USGBC) is a coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.
- “Sustainability” means looking at solutions that simultaneously improve social, economic, and environmental vitality.

REFERENCES

The following sources were used in the development of the above document:

1. "A Guild to Sustainability for New and Renovated Facilities, Johnson County, Kansas" [From Ralph Linne, Director of County Facilities, 1000 Main Street B-95, Cincinnati, OH; 45202; (513) 946-5015]
2. "An Ordinance Adding Chapter 4.38 to Title 4 of the Administrative Code of the County of Alameda Relating to Construction and Demolition Debris Management and Green Building Practices for Certain County Projects" [From Debbie Bender, Alameda County Facilities Manager (925) 551-6572]
3. "A City Council Ordinance, Everett, Washington" [From Carlton Gipson, Facilities and Property Mgmt, (425) 257-8981]
4. The current San Diego county BOS policy (not LEED specific) [From April Heinze, Director, Department of General Services (858) 694-2527]
5. "Sustainable Design and Construction Standard for Regional Facilities" Board of Supervisor Policy "Report No. 4 of the Finance and Administration Committee, Regional Council Meeting of April 27, 2006" [From Subhash Bhatia, Program Manager, and Barry Crowe, York, Canada; (905) 834-4444]
6. "Energy Resource Conservation Policy Draft 3.doc" [From Dustin Knutson, Energy Resource Conservation Manager Arapahoe County Government, Arapahoe, CO (303) 795-4557]
7. "What is 'Green Building'?" Arlington County, Virginia, Green Building Policy [From John Morrill, Energy Manager, Arlington County, VA Department of Environmental Services (703) 228-4426]

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