

CITY OF SAN DIEGO, CALIFORNIA
COUNCIL POLICY

SUBJECT

GREEN BUILDING

POLICY NUMBER 900-14

EFFECTIVE DATE

BACKGROUND

Over the past two decades there has been a wide-spread boom in construction, at a high cost to the environment. Approximately 36 % to 40% of total energy produced in this country is consumed by the built environment. It has been estimated that at the current rate of consumption, world oil resources could be depleted by 2050. Other problems associated with conventional building methods are building related illnesses, deforestation and excessive generation of waste.

A highly effective solution to these problems is the concept of Sustainable Building which essentially means providing for the needs of the present without detracting from the ability to fulfill the needs of the future. The synonymous term "**Green Building**" means **designing, constructing and operating buildings that give a high level of environmental, economic and engineering performance.** Areas of importance include occupant health, energy and transportation efficiency, resource and material conservation (air, water, land, fuel), as well as reuse and recycling during building construction, operation and demolition. The concept applies to all buildings, including residential, commercial and industrial.

The benefits of "**Green Building**" have been shown through several pioneering and demonstration projects across the country. Two examples in this region are the Southern California Resource Center in Downey, CA, and the City of San Diego's Ridgehaven Green Building Demonstration Project. The Ridgehaven project has met or exceeded all indoor air quality and energy efficiency objectives; it consumes 50% less energy than allowed by California's Title 24 and places in the lowest ten percentile for energy consumption in the region.

In addition to energy savings and environmental benefits, Green Building generates significant productivity improvements resulting from better indoor air and reduced absenteeism. Productivity improvements typically have been estimated to be ten times greater than energy savings. Also, Green Building practices applied to new construction and retrofits provide a boost to the local economy. The USDOE estimates that 85% of the investment in Green Buildings will be spent in the local economy with a three-fold multiplier effect in urban areas.

PURPOSE

Vigorous action is needed to address the undesirable effects that conventional building methods exert on the citizens, the community, and the environment. Green Building design strategies are the way to enhance our built environment by improving indoor air, reducing pollution, and conserving natural resources on a global scale. It is vital for San Diego to innovate the way we build, and incorporate these strategies in the design and construction. Although sustainability is a global issue, building plans are developed and implemented locally, and it is at this level that action needs to be taken. **The purpose of this policy is to assert the City's commitment to green building practices, and provide leadership and guidance in promoting, facilitating, and instituting such practices in the community.**

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POLICY

The following principles shall guide construction and renovation activities of City facilities:

The natural environment and built habitat are interdependent; ways have to be found for both to coexist in harmony.

Global environmental protection can not be achieved without proactive measures at the local level.

High environmental quality, outdoors and indoors, is essential for the City's long-term health and welfare.

Innovative methods and up-to-date technologies should be used in the design, construction, and renovation of City facilities in order to bring our consumption of energy and natural resources in line with the goals of sustainability.

Education of the citizenry and community involvement are instrumental to the protection of our natural resources and improvement of the built habitat.

In order to achieve the necessary improvements in our natural and built environment, City development projects shall be planned and executed using the following guidelines to the extent they are economically sound for any given project. The City encourages voluntary participation and innovation by the private sector.

HEALTH AND RESOURCE CONSERVATION

1. In general, City development, building, and renovation projects shall be designed and constructed in ways that preserve the natural outdoor environment and promote a healthful indoor habitat.

2. Projects shall be designed to avoid inflicting permanent, adverse impact on the natural state of the air, land and water, by using resources and methods that minimize pollution and waste, and do not cause permanent damage to the earth, including erosion.

3 Buildings shall be designed to take the maximum advantage of passive and natural sources of heat, cooling, ventilation and light.

4 Projects shall include innovative strategies and technologies such as porous paving to conserve water, reduce effluent and run-off, thus recharging the water table.

5. Projects shall be planned to reduce the need for individual automobiles, use alternative fuels, and encourage public and alternate modes of transportation, such as bicycling.

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6 Buildings shall be constructed and operated using materials, methods, mechanical and electrical systems that ensure a healthful indoor air quality, while avoiding contamination by carcinogens, volatile organic compounds, fungi, molds, bacteria, and other known toxins.

7 Projects shall be planned to minimize waste through the use of a variety of strategies such as: a) reuse of materials or the highest practical recycled content; b) raw materials derived from sustainable or renewable sources; c) materials and products ensuring long life/durability and recyclability; d) materials requiring the minimum of energy and rare resources to produce and use; and e) materials requiring the least amount of energy to transport to the job site.

ENERGY EFFICIENCY

8 Mechanical and electrical systems shall be designed and constructed to achieve the maximum energy efficiency achievable with current technology. Computer programs such as DOE-2 shall be used where feasible to analyze the effects of various design options and select the set of options producing the most efficient integrated design.

9 Creative design and innovative energy sources and uses shall be encouraged to reduce the consumption of energy from non-renewable sources. A deliberate effort shall be made to convert to renewable energy sources to the extent that such options are feasible.

10. Energy efficiency measures shall be selected to achieve energy consumption at 50% below California's current Title 24 standards, to the extent such measures are economically justified. An average pay-back period of five years shall be used as a guide for the aggregate of all energy efficiency measures included in a project. In order to achieve the five-year or better pay-back, projects shall be designed to balance efficiency measures requiring longer pay-back periods with measures requiring shorter periods.

11. For the purpose of evaluating the economic feasibility of green building products and materials, a "life cycle cost analysis" shall be used wherever applicable, as opposed to a simple cost of purchase.

12. For each major project involving architectural, transportation, mechanical and electrical systems, a design team shall be organized to coordinate the professions and disciplines required for the project, in an effort to integrate the various design elements and systems and maximize the total energy efficiency.

OUTREACH / EDUCATION

13 An education and outreach effort shall be implemented to make the community aware of the need for, and benefits of, Green Building. Methods of the outreach may include literature distribution, reports and promotional items in the media, work shops and seminars, and community events., An environmental resource library, with public access, shall be established in the City as part of the effort.

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14 The City shall develop a recognition program for innovative Green Building projects implemented in the public as well as private sector in an effort to encourage and recognize outstanding environmental protection and energy conservation projects. The City shall appoint a committee to recommend projects for recognition by the City Council.

IMPLEMENTATION

15 The City shall seek cooperation with other governmental agencies, public interest organizations, and the private sector to promote, facilitate, and implement Green Building in the community.

16 Ad-hoc partnerships should be formed for individual major projects, to the extent practical, in order to involve various groups and elements in the community to maximize the benefit-to-cost ratio in terms of environmental protection and energy conservation. These groups may include: government agencies, utility companies, educational institutions, public interest organizations, financial institutions, building owners, manufacturers and vendors.

17 The City shall develop and promulgate a comprehensive set of technical guidelines for Green Building and provide appropriate training for City staff. Until the City's guidelines are completed, The Sustainable Building Technical Manual published by Public Technology, Inc. and the Environmental Resource Guide published by the American Institute of Architects shall be used as guides in new construction and renovation.

18 The City shall evaluate its existing facilities and prioritize them for retrofit projects to improve energy efficiency and indoor air quality. Monetary savings from initial energy conservation projects shall be used to fund additional projects and related administration expenses.

LEGISLATION

19 The City shall support State and Federal legislation that promotes or allows sustainable development, conservation of natural resources, and energy efficiency technology.

REFERENCES:

- Related existing Council Policies:
- 400- 11, Water Conservation Techniques
- 400- 12, Water Reclamation/Reuse
- 900-02, Energy Conservation
- 900-06, Solid Waste Recycling