



Green Building Benefits

“Most green buildings are high-quality buildings; they cost less to operate and maintain and provide greater occupant satisfaction than standard developments. Sophisticated buyers and lessors prefer them, and are often willing to pay a premium for their advantages. What surprises many people unfamiliar with this design movement is that good green buildings often cost no more to build than conventional designs.”

--from the Santa Monica Green Building and Construction Guidelines Web site

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DESIGNING COMMUNITIES WITH BUILT-IN ENERGY EFFICIENCY

Building energy efficiency and sustainability into one building at a time is a great idea, but cities across the country are recognizing the collective benefits of populating their communities with sustainable buildings. Cities such as Austin, Denver, Tucson, Seattle, and New York City have raised the bar, community-wide, above basic minimums on sustainability issues.



Here in California, one city has taken an additional step by enacting higher energy performance requirements

for non-residential buildings. In September 1994, Santa Monica's City Council adopted the Santa Monica Sustainable City Program developed by the city's Task Force on the Environment to create the basis for a more sustainable way of life. To meet the program goals, the Task Force recommended that the City adopt a set of guidelines for developing "green" buildings in Santa Monica without forcing excessive costs or other burdens upon developers, building owners, or occupants.

The resulting Green Building Design and Construction Guidelines were developed over a three-year period with extensive input from the local design, construction, and development community.

EDR E-News recently spoke with Susan Munves, city project manager with Santa Monica's Environmental and Public Works Management division, about the energy performance aspects of these guidelines. She is a member of the city's Green Building Project Advisory Committee and was a contributing author of the Green Building Design and Construction Guidelines.

“Throughout the development of the program, we were careful to include feedback from architects, the financial community, and building owners,” reports Susan. “In addition, the guidelines

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The Green Building Design Process

The process of green building design and construction is fundamentally different from current standard practice.

Time after time, successful green buildings result from a design process with four critical features.

- Commitment to stringent health, ecological, and resource use performance targets by developers, designers, and builders.
- Close collaboration in multi-disciplinary teams, from the beginning of conceptual design, throughout design and construction.
- Computer energy simulations assess energy efficiency impacts early and throughout the design process.
- Design alternatives are evaluated on the basis of reduced life-cycle cost, as well as capital cost.

This process involves deeper analysis than is typical of traditional design practice, and requires more effort from design consultants. Design fees for this additional work typically reflect the increased work involved, but the investment is small compared to the environmental and cost impacts over the life of a typical building.

--from the Santa Monica Green Building and Construction Guidelines Web site

were peer-reviewed internationally. We wanted to ensure that the requirements would not include more than a three percent incremental cost increase, or more than a three- to five-year payback period.” With this stringent review, the Guideline authors were confident that the requirements were easily attainable without a cost burden.

Performance Criteria

Each of the required and recommended practices in the Green Building Guidelines have been evaluated for such features as:

- Environment: how well the practice addresses environmental, health, and resource-conservation issues.
- Ease of use: how easily the practice can be implemented in design or construction.
- Benefits: the advantages of the practice in addition to reduced environmental, health or resource impacts.
- Capital cost: the effect of the practice on total construction cost, relative to current standard Southern California practice.

Building Performance Ordinances

Two new Santa Monica Municipal Code ordinances focus on reducing energy consumption and runoff of untreated stormwater. Each of them aims at higher environmental and resource performance of buildings than state or federal requirements. These performance-based ordinances require building projects to meet or exceed a performance target, but allow flexibility in the methods used to achieve them. The ordinance sets the targets using cost-effective and well-proven design and construction strategies.

Santa Monica's building energy performance ordinance is based on California's Title 24 regulation and requires use of computer simulations following Title 24's Performance Approach to demonstrate that non-residential buildings meet the energy target.

The Building Energy Conservation Ordinance requires more stringent energy budgets than California's 1998 Title 24 regulation. Annual Source Energy Conservation Targets by building occupancy are:

- Multi-family residences 20% less
- Hotels and motels 25% less
- Commercial and institutional offices 25% less

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- Light industrial 25% less
- Retail 20% less

Design teams must submit two reports to the City on the expected energy performance of their designs:

- A summary of preliminary computer energy analysis performed during conceptual design, as part of the development permit application; and
- A summary of the final computer simulation demonstrating that the final design complies with the above targets, as part of the building permit application.

The Key Component: Design Team Interaction at the Outset

“These standards are easily achievable,” reiterates Susan. “It just requires that the designers and builders and mechanical engineers work together at the outset of the project. Commitment to better performance, close teamwork throughout the design process, openness to new approaches, and information on how these are best applied are more important than a large construction budget.”

You can read more about Santa Monica's Green Building Design and Construction Guidelines at greenbuildings.santa-monica.org/Main.htm

For specific questions about the program, you can e-mail Susan Munves at susan-munves@ci.santa-monica.ca.us