

City of Garden Grove

INTER-DEPARTMENT MEMORANDUM

To: Matthew Fertal
From: Susan Emery
Dept: City Manager
Dept: Community Development
Subject: GREEN BUILDINGS AND ENERGY EFFICIENCY
Date: November 11, 2008

OBJECTIVE

To transfer information regarding green building programs and energy efficiency.


BACKGROUND

Attached are two manager memoranda that discussed green building programs throughout Orange County and green building standards approved by the California Building Standards Commission (CBSC).

- The memorandum "GREEN BUILDING PROGRAMS" gives a brief summary of green building programs, as well as some pros and cons of such programs. The memorandum also reviews green building programs in Anaheim, Irvine, and Mission Viejo.
- The memorandum "CA GREEN BUILDING STANDARDS" reviews statewide standards that the CBSC adopted in July 2008, which will be phased in over the next three years. For example, energy efficiency standards that will go into effect in July 2009.

Currently, Building Services staff enforces Title 24, which covers California's energy efficiency standards. Title 24 standards are updated periodically. The most current standards went into effect in 2005 and are effective through June 2009.

Furthermore, during the week of November 3rd, Building Services staff completed training courses about green building standards at the annual California Building Officials Training Institute's Education Week.


SUSAN EMERY
Community Development Director

Approved for Agenda Listing


Matthew Fertal
City Manager


By: Grant Raupp
Administrative Analyst

Attachment 1: "GREEN BUILDING PROGRAMS" Memorandum
Attachment 2: "CA GREEN BUILDING STANDARDS" Memorandum



City of Garden Grove**INTER-DEPARTMENT MEMORANDUM**

To: Matthew Fertal
Dept: City Manager
Subject: GREEN BUILDING PROGRAMS

From: Susan Emery
Dept: Community Development
Date: January 23, 2007

OBJECTIVE

To transmit a brief introduction to green building programs.

BACKGROUND

A green building, also known as a sustainable building, is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings have minimal impact on the environment due to the fact that they incorporate water, energy, and material conservation through thorough planning, design, material selection, and construction. Green buildings are designed to meet criteria that attempt to make the building use energy, water, and other resources more efficiently, protect occupant health, and improve employee productivity.

Most cities that have adopted some form of green building program have used the US Green Building Council's Leadership (USGBC) in Energy and Environmental Design (LEED) guidelines to certify projects as sustainable, although some cities have developed their own programs. A search of Orange County cities' websites found that only two cities have full green building programs in Orange County: Irvine and Anaheim; and one city is currently conducting a pilot program – Mission Viejo.

The LEED program is considered to be a holistic approach green building design as it incorporates site selection, recycled content building materials, alternative transportation, landscape design, exterior light pollution, indoor air quality, as well as energy efficiency and water conservation. To earn "green" certification, a building project must meet certain prerequisites and performance benchmarks ("credits") within a number of categories. Projects are awarded Certified, Silver, Gold or Platinum certification, depending on the number of credits they achieve.

The USGBC currently offers LEED rating systems in the following categories:

- New Commercial and Industrial Buildings
- Existing Buildings and Maintenance
- Core and Shell Development
- Commercial Interiors
- Homes

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- Neighborhood Development
- Schools

The USGBC also has guidelines for multiple building projects, on-campus projects, retail projects, and lodging projects four-stories and under.

Some examples of "green" design and construction practices are:

<i>Site</i>	Urban infill, erosion control, storm water management, parking, transit access, etc.
<i>Water</i>	Low flow faucets and toilets, waterless urinals, drip irrigation, native landscaping, rainwater capture and reuse, grey water systems, etc.
<i>Energy</i>	Whole building design, passive solar, insulation, lighting, windows, effective operation, tree plantings, appliances, etc.
<i>Materials and Resources</i>	Engineered wood, FSC certified wood, blown cellulose insulation, bamboo flooring, fiber cement siding, smart framing, linoleum, etc.
<i>Indoor Environmental Quality</i>	Source control (carpets, paints), ventilation, filtration, day lighting, etc.

DISCUSSION

Cities have approached the adoption of a green building program in a number of ways. All of the programs found in Orange County are voluntary. While some cities use LEED certification guidelines, many have adopted their own set of green building standards and certify buildings as "green" through their own process.

Some cities, like Irvine, only offer a certification for building "green," while others offer incentives through their programs, like Anaheim and Mission Viejo. Other municipalities have adopted green building standards for the construction of new city facilities.

The City of Irvine's Irvine Green Home Program certifies that buildings or remodeled homes are sustainable. The Irvine program has different certification levels depending on how "green" the projects are.

Unlike the Irvine's program, Anaheim's program offers incentives to developers for building "green." The program offers:

- Expedited plan reviews
- Plan check fee waivers (up to \$50,000 per project)
- Discounted rates for economic development
- New construction incentives (up to \$75,000 per facility)

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- Solar energy installation incentives (up to \$50,000)
- Design review assistance (up to \$10,000)
- Technical assistance and more

The City of Long Beach adopted a Green Building Policy for its municipal buildings in June of 2003. As of August of 2006, Long Beach had six building projects being designed to LEED standards. Starting in November of 2006, Long Beach requires residential or mixed-use developments with 50 or more housing units, and commercial or industrial projects of 50,000 or more square feet to meet the minimum LEED standards.

Whether or not a city's program includes incentives, the review of local Orange County programs shows that cities act as a clearinghouse of information about green buildings. Cities' websites are full of resource guides; links to green building organizations, lists of sustainable construction materials, etc. While the Irvine Green Home Program does not include incentives itself, they do provide links to incentive programs offered by Southern California Edison, the Gas Company, Irvine Ranch Water Company, and the US Environmental Protection Agency (Energy Star Program).

Green Building Program Benefits

A number of benefits, including environmental, health and safety, and economic, have been found as a result of green buildings.

In the US, buildings use 65.2 percent of electricity, 12 percent of potable water, 40 percent of raw material, and 25 percent of wood resources. Building construction and demolition debris makes up 25 percent of municipal waste (136 million tons/year) in the US. Some estimates claim that 62 tons of waste is produced to construct a 50,000 square foot office building.

According to the Massachusetts Technology Collaborative, residential and commercial buildings contribute 36 percent of total human activity-related carbon dioxide emissions. Green buildings help reduce fossil fuel consumption through energy efficiency and the use of clean energy technologies. The use of energy-efficient technologies for electricity, heating, cooling, and lighting requires less fuel for the buildings' systems.

The US Environmental Protection Agency reports that US buildings consume 12 percent of total national fresh water consumption. Green building features, such as ultra-low fixtures and well-planned landscaping, can minimize buildings' water use.

Sustainable forest products, usually certified by the Forest Stewardship Council and recycled materials used in green building programs, can significantly reduce buildings' impacts on forest ecosystems.

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According to a report in October of 2003 to California's Sustainable Building Task Force, green buildings provide a possible way to address a range of other challenges facing California. Such things as worsening electric grid constraints, pending water shortages and waste disposal issues, the rising incidence of allergies and asthma (especially in children), and the health and productivity of workers are only some of the benefits the reports claims green buildings can possibly help address, the report found.

The California Integrated Waste Management Board states that recent studies have shown that buildings with good overall environmental quality can reduce the rate of respiratory disease, allergy, asthma, sick building symptoms, and enhance worker performance.

There are financial benefits to green buildings as well. The Report to California's Sustainable Building Task Force states that an investment of two percent in green building design, on average, results in building life-cycle savings of 20 percent of the total construction costs. Hence, an initial upfront investment of \$100,000 to incorporate green building designs into a \$5 million project could net a savings of \$1 million over a 20-year period of time. The financial benefits result from lower energy, waste, and water costs, lower environmental and emission costs, lower operations and maintenance costs, and savings from increased productivity and health.

A possible benefit from green building construction in Garden Grove would be the decreased impact on the City's sewer system by new development. In 2005, a capacity evaluation and condition assessment identified \$54 million in deficiencies to the City's sewer system. Buildings designed to have a limited impact on the sewer system, because of reduced waste and water designs, could possibly allow for more growth in areas of the City with such deficiencies.

Green Building Program Issues

There are a number of issues that have been raised about green buildings. The issues include: concerns that certification programs do not guarantee dramatic effects on projects' environmental impact; potential costs to developers and costs for a city program.

Concerns have been raised that in certification programs like LEED, developers only seek to get "green" credits and do not design features into projects that add true environmental protection value. For example, a recreation center in Boulder, CO, received "green" credit for installing an electric-vehicle charging station that is only used once a year due to the fact that there are only six electric cars in the city.

Moreover, there is a larger upfront cost for building "green." Some claim that a LEED certified project could add one to five percent to the budget of a project. The Report to California's Sustainable Building Task Force found a premium of \$3-5 per square foot, which can be a possible roadblock for some projects to be developed "green." Although, some have found that projects "pay for themselves" in three to

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five years in lower utility costs alone. Furthermore, the buildings themselves have increased building valuation.

If Garden Grove were to adopt a green building program, the costs to the City would vary depending on the type of program adopted. If a certification program similar to Irvine is initiated, then the costs will include staff time toward program development, staff training about green buildings, printed materials for public promotion and education, and other costs. If an incentives program like Anaheim is initiated, it could cost the City by the collection of fewer fees and any other financial incentives that may be started (e.g. solar energy installation incentive, design review assistance, etc.), as well as the staff time and training necessary for program development.

Ultimately, the City of Garden Grove has the ability to adopt a green building program. The exact costs and benefits of the program will depend on its goals and size.



SUSAN EMERY

Community Development Director



By: Grant Raupp
Administrative Analyst



City of Garden Grove

INTER-DEPARTMENT MEMORANDUM

To: Matthew Fertal From: Susan Emery
Dept: City Manager Dept: Community Development
Subject: CA GREEN BUILDING STANDARDS Date: August 6, 2008

OBJECTIVE

To transfer information regarding the approval of statewide "green" building standards by the California Building Standards Commission (CBSC).

BACKGROUND

On July 17, 2008, CBSC approved the first set of statewide green building standards in the nation. The standards will become effective the spring of 2009. The California Department of Housing and Community Development (HCD) developed the standards, which will be phased into the state building code over the next three years.

The green standards include mandatory measures for residential construction and voluntary measures for other occupancies.

Some of the approved green standards include:

- Energy Efficiency (effective July 2009): The new standards will make new California homes approximately 20 percent more energy efficient than existing statewide standards.
Air Quality, Moisture Control, and Resource Conservation (effective January 2011): Among the remaining categories are requirements for low- or no-volatile organic compound adhesives, paints and coatings, high-efficiency air condition filters, and always-on exhaust fans to ensure better fresh air circulation in the home.
Water Conservation (effective July 2011): The new standards require a reduction in overall water use within all new homes by 20 percent. The new code will allow for a variety of compliance options; although, it is predicted that most will meet the new water conservation requirements by installation of super-low flow toilets and showerheads.

Susan Emery signature
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Community Development Director

Grant Raupp signature
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Administrative Analyst