

**CITY OF HERMOSA BEACH
COMMUNITY DEVELOPMENT DEPARTMENT**

MEMORANDUM

Date: January 11, 2007

To: Honorable Chairman and Members of the Planning Commission

From: Sol Blumenfeld, ~~Director~~ Director
Eva Choi, Planning Assistant
Community Development Department

Subject: Draft Sustainability Guidelines for Residential Development

Recommendation

To consider the list of recommended sustainability standards for new residential discretionary permit projects, and direct staff to codify them as standard conditions for project approval.

Background / Analysis

In response to growing environmental concerns, many cities have enacted policies that promote green building design concepts in an effort to ensure a sustainable future.

The principles behind green building and sustainable design include promoting quality design, aesthetics, functionality and comfort. Green buildings conserve energy, water, material resources and improve user comfort and productivity. There are many green measures that are not costly to implement and also save money in operating and maintaining the home.

A number of cities in California have adopted policies that required architects and developers to incorporate sustainable designs in their projects¹. These cities included Los Angeles, Calabasas, Santa Monica, West Hollywood, Oakland, and West Sacramento.

The following is a list of recommended practices for Commission consideration:

I. Site

- Use permeable paving for walkways, patios and driveways to reduce flooding and the volume of polluted storm water that reaches the river or ocean. It also reduces the need to irrigate.
- Use certified sustainable wood; this type of wood can be used in any application that normally uses conventional lumber. Sustainable forest certification assures that the forest from which the redwood or cedar is produced is managed in a

way that will assure the long-term availability of these precious woods and do not damage ancient, old-growth forests.

- Use wall insulation to meet or exceed energy code requirements, minimum required standard per Title 24 is R-12 wall insulation.
- Use ceiling insulation to meet or exceed energy code requirements, minimum required standard per Title 24 is R-19 ceiling insulation. This method decrease heating and cooling requirements, decrease energy consumption and cost.
- Locate and orient the building to control solar cooling loads.
- Locate and orient the building for passive solar heat in winter.
- Design windows to maximize day lighting and views.
- Shade windows during cooling periods with awning, trellis, and planting.
- Use reflective films on east and west facing glass.

II. Landscape

- Locate landscaping and landscape structures to shade buildings.
- Use landscape to shades east and west facing windows.
- Landscape materials which have different watering needs should be irrigated by separate control valves. Water coverage should be limited to plant areas only.
- Use low volume irrigation systems with automatic controllers which includes low volume sprinkler heads, drip emitters and bubbler emitters.
- Set automatic controllers to operate between 5p.m. and 10a.m. to reduce evaporation.
- Use landscape with plants to help filter pollutants, treat stormwater and recharge groundwater.
- Install curb extensions, where possible, to capture stormwater or consider using lowered planter strips, landscape swales, porous paver block and pervious concrete.

III. Roofing

- Install green roof (a roof of a building that is partially or completely covered with vegetation and soil, or a growing medium, planted over a waterproofing membrane²) where practical.
- Use light colored roofing or 'Cool Roof' on flat roofs that reflect heat away from the building.
- Use minimum 25-year compositions roofing that are durable, more effective and reduce landfill requirements over typical 15-year shingles.
- Install solar electric panels (Photovoltaic). Excess electricity can be sent back to the electric grid for a credit on electric bills. The collected energy can also be stored in large batteries to meet the needs of nighttime energy requirement. The panels reduce air pollution and decrease reliance on conventional power plants.

IV. Electrical Systems

- Use ENERGY Star-rated electrical appliances.
- Use compact fluorescent bulbs in all utility and service areas. Fluorescent bulbs consume only one-third of the electricity used by incandescent bulbs and may last up to ten years and save up to \$120 over the life of the bulbs.

V. Cooling and Heating (including HVAC Systems)

- Select high-efficiency heating and cooling equipment to reduce energy consumption and demand.
- Use digital electronic control of lighting and HVAC systems for energy and demand savings.
- Install operable skylights which can enhance natural cooling by allowing rising hot air to escape.
- Install hydronic radiant heating system which does not blow allergy-inducing particles into the air and reduce energy consumption in comparison to conventional forced air units. (Hydronic radiant floor systems pump heated water from a boiler through tubing laid in a pattern underneath the floor. In some systems, the temperature in each room is controlled by regulating the flow of hot water through each tubing loop. This is done by a system of zoning valves or pumps and thermostats.)

VI. Plumbing Systems

- Install low flush model toilets. Each low flush toilet can save up to 4,000 gallons of water per year.
- Install hot water jacket insulation. Water heater jacket insulation can reduce heat loss by about 10%; or more on older hot water heaters.
- Install flow reducers on faucets to help save water and money by slowing the flow from 2-3 gallons per minute to 1 gallon per minute or less with little noticeable effect.

VII. Cost

- It is commonly assumed that green building features and products translate into additional costs in comparison to conventional buildings. It is often overlooked that green building features that contribute to energy efficiency, improve indoor air quality and building durability should be looked at through a life cycle cost methodology, not just evaluated in terms of upfront costs. From a cost savings standpoint, savings resulting from additional costs in employing green building features and construction dramatically exceed any additional upfront costs.

¹ Terramor, a master-planned village within a 4,000-acre master-planned community called Ladera Ranch in South Orange County, is one of the largest solar-powered communities in North America. Homebuilders at the Terramor Village were required to employ green principals and renewal materials in site planning, water conservation, energy, materials and resources and indoor environmental quality. Some of the specific requirements included building Energy Star homes and incorporating Energy Star appliances; exceeding California's energy code (Title 24) by at least 20 percent; installing solar panels in at least one model; making photovoltaics standard in some homes; using low-VOC paints, recycled materials, sustainably harvested wood; and removing and recycle at 60 percent of construction waste. While meeting other sustainable design requirements, the end results were products that appealed to the targeted homebuyers with a 32 percent increase in demand, and a 5 to 10 percent increase in average home prices, compared to other non-green villages in Ladera Ranch.

² Existing buildings may require retrofitting or additional engineering to accommodate the additional weight ranging from 15 to 150 pounds per square foot depending on the type of green roof desired.

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