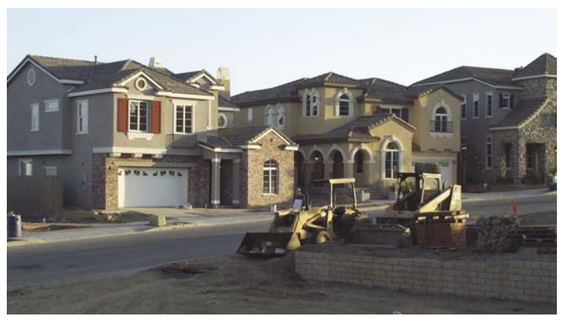
Green Building Measures for VENTURA COUNTY

A Green Building is sited, designed, constructed and operated to enhance the well-being of its occupants, and to minimize negative impacts on the community and on the natural environment."

Green building design concepts and practices can be integrated into just about every aspect of the urban environment in the Ventura region. Recommended concepts and practices fall into five major categories: site, energy, materials, water and indoor environmental quality.



Site

A building that is well integrated with its site uses less energy and supports a more comfortable interior environment. Similarly, an integrated landscape design and maintenance plan conserves water and enhances the local ecology. We can also reduce a building's transportation related impacts by locating it near public transit, bicycle and pedestrian routes.

Green site practices for urban redevelopment and downtown areas include:

- Develop urban in-fill and mixed-use projects on "brown-field" sites, and avoid remote low-density "green-field" locations. Where possible, reuse existing buildings and infrastructure.
- Avoid unnecessary disturbance to existing trees, creeks, barrancas and wetlands. Control storm water run-off during site preparation and construction.
- Design landscaping, building exterior and outdoor paving areas to reduce unnecessary heat gain and the demand for air-conditioning.
- Orient buildings to maximize interior daylighting and solar access.
- Eliminate light pollution from exterior light fixtures into the night sky.
- Encourage resource-efficient transportation such as walking, bicycling, transit, carpooling, and other less-polluting means of transportation. Provide secure bicycle parking.
- Reduce storm water run off and where possible manage storm water on site. Use permeable paving materials wherever appropriate.
- Minimize bird / building collision problems; for example, by avoiding highly reflective surfaces and glazing that wraps around building corners, and by using mullions, patterned glass, window shading devices and screens, to create visual 'noise.'

"Buildings too, are children of Earth and Sun"
– Frank Lloyd Wright

Energy

Reduce building energy demands by maximizing the use of natural light, natural ventilation, and renewable energy systems – especially solar hot water systems. Specify energy efficient lighting and heating, ventilating, and air-conditioning (HVAC) equipment.

- Reduce energy use through passive solar and integrated building systems design.
- Optimize beneficial building orientation, and maximize natural daylighting.
- Maximize the thermal efficiency of the building envelope (windows, walls, roof).
- Install high-efficiency motors and heating and cooling equipment – boilers, furnaces, air conditioners, on-demand "tankless" water heaters.
- Install high-efficiency lights, refrigerators and other appliances.
- Optimize the interaction of daylighting, HVAC, lighting, and system controls.
- Use renewable energy sources such as solar photovoltaics and solar hot water systems.

"The cheapest watt of electricity is the one you don't use."

Materials

Use building materials containing recycled content, such as recycled flyash in concrete, recycled-content thermal insulation, recycled steel and aluminum, recycled decking and carpet. Choose materials that can be recovered for reuse or recycling at the end of their service life. Choose materials manufactured in a sustainable manner and from renewable sources, such as certified sustainably harvested wood. Use engineered lumber and 'I' joists, and reduce and recycle construction and demolition waste.

- Conserve, renovate, and re-use existing buildings infrastructure and construction materials.
- Use building materials and products that are made from renewable or recycled resources, and that are themselves also recyclable.
- Where possible, use locally produced materials to minimize unnecessary transportation.
- Use durable materials that will last and require minimum maintenance.
- Use materials and products manufactured in a manner that minimizes damage to the environment, and that emit little or no environmental toxins or volatile organic compounds (VOCs).
- Help building users to reduce and recycle waste materials by allocating adequate space for recycling facilities. Locate kitchens and copy rooms near exits, and provide waste-staging areas at loading docks to optimize sorting of recyclables and efficient waste collection.

"Pollution is nothing but the resources we are not harvesting. We allow them to disperse because we have been ignorant of their value."
— R. Buckminster Fuller

Water

Integrate water conservation into the landscape design and irrigation system, and into the building's plumbing, heating, ventilating and air-conditioning (HVAC) systems. Specify water efficient appliances and fixtures, and consider the use of recycled water systems.

- Manage storm water on site, and collect rainwater to irrigate landscaping.
- Use permeable paving to aid the recharging of local groundwater basins.
- Minimize the use of conventional lawns and instead use water efficient landscaping, especially native and drought tolerant plants, and use water-efficient delivery technologies such as weather-based irrigation controllers.
- Specify low-water use toilets, urinals, faucets and showerheads.
- Use gray water from clothes washers, showers, and some sinks for flushing toilets and irrigating plants and landscaping.
- Choose water and energy efficient air conditioning systems.

"We forget that the water cycle and the life cycle are one."
— Jacques Yves Cousteau

Indoor Environmental Quality

Maximize natural ventilation, and optimize indoor air quality by reducing toxics in interior materials, such as paints, carpets, plastics and wood products. Provide thermal and visual comfort through optimized daylighting, HVAC, and lighting designs.

- Improve indoor air quality (IAQ) by maximizing natural ventilation.
- Avoid building materials that may "off-gas" over time, or encourage the growth of mold and mildew.
- Avoid compromising indoor air quality during construction through careful duct installation, avoiding dirt and dust trapped inside enclosed plenums and minimizing the use of toxic solvents.
- Locate outside ventilation air intakes away from sources of pollution such as roads, bus stops, laundry and kitchen vents, parking areas, etc.
- Locate and ventilate photocopying and cooking areas, and other sources of indoor pollution, to avoid contaminating indoor air.
- Provide "walk-off mats" at primary building entrances. Minimize the use of carpeting.
- Maximize natural lighting and acoustical privacy, to enhance comfort and reduce fatigue.
- Provide occupants with control over the lighting, heating and cooling in their own workspace.

"Build it tight and build it right."

Green Building Information Resources

The California Local Energy Efficiency Program (CaLeep) was launched in January 2004 by Navigant Consulting as a pilot project to develop a "best practices" protptype process to help California's local governments design and implement highly effiective energy efficiency strategies for their communities by maximizing the use of existing initiatives and resources within their jurisdictions. For more information see www.caleep.com

This innovative initiative has been funded by California ratepayers under the auspices of the California Public Utilities Commission.

Alameda County Waste Management Authority
San Leandro, CA • 510.614.1699 • www.stopwaste.org

California Integrated Waste Management Board
916.341.6474 • www.ciwmb.ca.gov

Environmental Building News
Brattleboro, VT • 802.257.7300 • www.BuildingGreen.com

Global Green USA
Santa Monica, CA • 310.851.2700 • www.globalgreen.org

Green Building Council of Ventura County
www.gbcvc.org

US Department of Energy, High Performance Building Database
www.highperformancebuildings.gov

US Green Building Council
www.usgbc.org

Ventura County Regional Energy Alliance
1000 Hill Road • Ventura, California 93003 • (805) 289-3335 • www.vcenergy.org
A joint powers agency to develop and implement sustainable energy and home of the Ventura County Energy Resource Center