

Main Street Village Apartments *Compliance with Green Building Education*



Introduction to LEED

Main Street Village has been designed and built as a green building that qualifies for LEED-NCv2.2 (Leadership in Energy and Environmental Design for New Construction) certification under the US Green Building Council. LEED is a green building rating system based on national standards for developing sustainable buildings. LEED was created by the US Green Building Council (USGBC) to provide a framework for meeting sustainability goals and assessing building performance. The USGBC is the nation's foremost coalition of leaders from every sector of the building industry working to promote buildings that are environmentally responsible, profitable and healthy places to live and work.

LEED™ is a voluntary, consensus-based, market-driven building rating system based on existing proven technology. It evaluates environmental performance from a "whole building" perspective over a building's life cycle, providing a definitive standard for what constitutes a "green building." The LEED™ rating system applies to new and existing commercial, institutional, and high-rise residential buildings. It is a feature-oriented system where credits are earned for satisfying each criterion. Different levels of green building certification are awarded based on the total credits earned.

The LEED-NCv2.2 rating system is comprised of 5 different credit categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality.

Sustainability at Main Street Village Apartments

Main Street Village Apartments (MSVA) has incorporated the following "green" elements in fulfillment of the LEED-NCv2.2 requirements:

Sustainable Site

A total of eleven (11) credits were achieved in this credit category. A few of the more notable credits are: Avoid development on an inappropriate site and reduce the overall environmental impact a building has on a site; Encourage development in urban areas with existing infrastructure such as municipal mass transit; Lessen heat islands by installing a high reflective, energy efficient roof and planting native trees for shade to minimize the impact on the local environment.

Specifically, MSVA is located within close walking distance to more than 10 community services such as a restaurant, fitness center and grocery store. It is also located in close

proximity to 6 public bus lines. Alternative forms of transportation are encouraged by providing secure bike storage, and preferred parking spaces to carpools, vanpools and low-emitting vehicles.

Water Use Reduction

A combination of water efficient plumbing fixtures was utilized to conserve water usage throughout MSVA. A reduction in water usage results in less of a burden on the municipal water supply and waste water systems. Water savings, as it relates to LEED, is based on the guidance of the Energy Policy Act of 1992 (EPAct). MSVA incorporated low-flow faucets (1.5 gpm), dual-flush toilets (1.6/0.8 gpf), and low-flow showerheads (1.8gpm) to achieve a water reduction of more than 30% below baseline EPAct measures.

To minimize the use of water for irrigation purposes, drought tolerant shrubs were planted for landscaping. The Irvine Ranch Municipal Water District will be providing the reclaimed water to the site rather than using potable water for irrigation.

Optimized Energy Performance

MSVA has taken measures to optimize the energy efficiency of through the use of commissioning, installing energy efficient lighting systems, and established minimums for cooling, air circulation and filtration systems.

The energy performance of MSVA is 17.5% below the CA Energy Code, Title 24. By reducing energy consumption, MSVA will be cutting back on the amount of greenhouse gas emissions (a leading cause of global warming) released into the atmosphere. Another benefit of minimizing electrical usage is that heat generation within the interior space will be reduced, resulting in less of a need for air conditioning and cooling, which further reduces green house gas emissions.

Materials & Resources

The environmental impact of construction at MSVA has been lessened through responsible management of construction waste, reusing existing resources, selecting products with recycled content, using locally manufactured or harvested materials and designing for the collection of recyclables.

More than 50% of all the construction and demolition waste generated on the project was diverted from the landfill, and instead sent to a recycling facility. The Environmental Protection Agency (EPA) estimates that 136 million tons of building-related C&D debris was generated in the United States in 1996. Through effective construction waste management, it is possible to extend the lifetime of existing landfills, avoiding the need for expansion on new landfill sites.

At least 10% of the materials and furnishings that are used in MSVA were manufactured within a 500 mile radius of the project site, and half of those materials and furnishings were extracted or harvested within a 500 mile radius. An increase in demand for locally extracted and manufactured building materials and products supports the regional economy and reduces the environmental impact resulting from transporting materials

around the country (and sometimes around the world). By reducing transportation activities, there is a reduction of pollution (global warming emissions) and traffic that is associated with delivering materials to the job site.

Indoor Environmental Quality

Conscious measures to enhance the indoor environment for occupants have been implemented at MSVA such as ensuring ventilation effectiveness, control of contaminants, use of low-emitting materials, thermal control, and a connection to the outdoors through daylight views.

Since smoking is permitted in some residential units, extraordinary construction measures to prevent air leakage to spaces outside of these units have been employed and thorough air leakage testing has ensured proper control of tobacco smoke.

MSVA has taken a step to improve the quality of its indoor environment by using low-emitting materials. All adhesives, sealants, paints, coatings, and carpet installed have a low-VOC content, or are considered low-emitting. VOCs, or Volatile Organic Compounds (i.e. the “new car smell”), are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. More information can be found about VOCs at <http://www.epa.gov/iaq/voc.html>

To maintain a healthy indoor environment MSVA has provided resident manuals that will assist residents with “green” housekeeping. Green housekeeping is characterized by the use of environmentally and human friendly cleaning products and practices. MSVA has specifically chosen to use cleaning products that are certified by Green Seal. Green Seal-approved products are safer for cleaning personnel and building occupants (i.e. they don’t have malodorous fumes) and they are manufactured in an environmentally responsible manner. More information about green housekeeping practices and a list of approved chemicals can be found at <http://www.greenseal.org>