

# FIFTH ANNUAL SUSTAINABLE HOMES TOUR

## LAS VEGAS

**Saturday FEB. 9, 10 am - 4 pm**

The self-guided tour will begin at the Las Vegas Arts Council building at 140 Bridge Street starting at 10 am where maps of the featured sites can be obtained. Each of the featured buildings can be viewed in any order and experts will be on hand to explain key features.

Sustainable Las Vegas, the sponsor of this event, announces a long-awaited break-through for potential solar electricity customers in Las Vegas: commercial financing of photovoltaic systems.

Also new this year is a house heated and cooled with a geothermal system (ground-source heat pump). At least as important are 3 other sites, though their technologies have been featured on our previous tours: a passive solar home and workshop; a pergola-mounted photovoltaic system; energy efficiency measures; and an example of a commercial energy saving project.

**Financing Solar Electricity:** New on the renewables scene are loans and leases which allow homeowners to have solar power without the need for all the cash up front. Instead, financing a project may cost no additional money since loan payments in many cases will be about the same as the monthly electric bills that the photovoltaic systems replace, making solar power available to more households. The first explanation of financing options will be presented at 10 am at the Arts Council building, by representatives from Energy Concepts, a Las Vegas company that has installed solar systems for decades, and can now arrange for financing. The second explanation will be at a home site where the homeowners have enjoyed their system for about a year, installed by CST out of Albuquerque.

**Geothermal Heating and Cooling System:** This new home relies on a ground-source heat pump to reduce electrical demand. Because the earth is a constant 55 degrees or so, these systems make use of this constant temperature to run a conventional heat pump. Seven 6 inch holes were bored 200 feet deep; tubing was placed in the holes and then were filled with grout to give them good earth contact. A solution of alcohol and water is pumped through these tubes to the heat pump; now the heat pump need only heat against the ground temperature rather than the low outdoor temperatures which requires less energy. Similarly in the summer the heat pump running in cooling mode can transfer the home's excess heat to the cool ground rather than to the hot outside air. Such systems can drastically reduce energy use. A representative from the design team will be present to explain the system.

**Passive Solar and Energy Efficient Home:** This four year old home has lots of south-facing glass to absorb the sun's heat and is massive enough with concrete floors and thick walls to store it for a constant overall temperature even through cold nights and hot summer days. The home is nestled into the ground on its north and west sides to protect it from the cold and to keep it cool in summer. Domestic water is heated using roof-mounted solar panels and stored in an 80 gallon tank. To conserve water, an increasingly important consideration in our area, a composting toilet is used. A rainwater catchment system collects water from the roof. Some cooking can be done using a built-in solar oven. Back-up heat comes from firewood. These innovative yet simple

principles reduce energy and resource use while providing a very comfortable dwelling. With careful design such energy efficiency measures need not cost more than conventional building techniques.

**Photovoltaic Systems:** Two solar arrays can be visited. One home has installed 32 panels on the roof, enough to supply the all-electric home with its entire energy needs. Half of this system was financed by the solar installer; representatives will be on hand to explain how this might work for other homeowners.

The second system is mounted on the roof of a 'pergola', a shade structure in the back yard. This novel approach gets around poor solar access caused by shading by trees and nearby buildings and poor orientation-the home, like many, does not face south. So, in addition to supplying solar electricity the 4 kW array provides a shady backyard retreat

**Commercial Sustainability:** A local bank has invested in photovoltaics to reduce fossil fuel energy use. This investment has made the owners more conscious of other opportunities to save energy. They are experimenting with LED lighting and introducing paperless banking to their customers. The lighting array can be visited. The bank will host a reception with information and refreshments all day.

Info: Emelie Olson 505.454.3920, [eolson@desertgate.com](mailto:eolson@desertgate.com).  
[http://www.nmsea.org/Chapters/Las\\_Vegas.php](http://www.nmsea.org/Chapters/Las_Vegas.php).