



Shade Tree Shelter Solar and Energy Efficiency Retrofit

Summary

The first Green Chips project, in cooperation with the Nevada Conservation League, is a Solar Energy installation and energy efficiency audit and retrofit at The Shade Tree, a woman's shelter and prominent Las Vegas regional non-profit organization. Shade Tree's electric bills are currently in the range of \$5,000 per month, and the energy produced from the installation of solar panels and saved by improving energy efficiency is expected to reduce that bill by up to 10%. At a time when the demand for Shade Tree's services are at an all-time peak, saving up to \$500 per month on energy costs will provide significant help toward the shelter's mission of serving the community needs.

The project was initiated by Nevada Conservation League to promote the advantages of renewable energy and the simple steps that regional homeowners, businesses and non-profits can take to save energy and improve the area's long-term environmental sustainability. The solar panels and installation were donated by Bombard Electric, LLC, the leading solar PV contractor in the state of Nevada, with over 20 Megawatts of solar photovoltaic systems installed. The solar panels were installed on the roof of the animal shelter building at The Shade Tree, and are already operational.

Green Chips is paying for the full energy audit that is currently being conducted, and will cover the costs of energy efficiency retrofits such as sealing ductwork and installing insulation, up to a total cost of \$20,000. Green Chips is also coordinating the donation of labor to minimize expenses associated with the energy efficiency retrofits. Local 525 of the Plumbers and Pipefitters is participating in the audit to help improve water conservation by identifying and sealing any potential water leaks.

The retrofits and repairs are being performed on the main building of The Shade Tree. Although that building is only 9 years, a preliminary analysis prior to the complete energy audit indicates that energy efficiency measures can save up to 3 – 5% of the current electric cost, a significant component of the up to 10% savings expected from the complete project.

Green Chips selected this project as the first demonstration program not only to provide a significant benefit to a leading community resource, but also to highlight the fact that simple steps to save energy and to promote energy sustainability can be undertaken by almost any homeowner, business or non-profit in the Las Vegas region at little cost. Links to valuable information pages on what those individuals, businesses and organizations can be found on Green Chips' website at www.greenchips.org.

Shade Tree Solar and Energy Efficiency Project Partners

- Nevada Conservation League
- Green Chips
- Bombard Electric, LLC
- Plumbers and Pipefitters Local 525

Green Chips Regional Partners

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Harrah's Entertainment
- Las Vegas Convention and Visitors Authority
- McDonald Carano Wilson, LLP
- MGM Mirage
- Nevada State Bank
- Southern Nevada Water Authority
- NV Energy
- Clark County

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GREEN CHIPS

ENVIRONMENTAL SUSTAINABILITY IN NEVADA

Shade Tree Shelter
Solar and Energy
Efficiency Retrofit

Quick Facts

- What is the scope of the solar and energy efficiency project at The Shade Tree?
 - A 3 Kilowatt solar photovoltaic system has been donated and installed by Bombard Electric, LLC. A full energy audit is currently being conducted and based on that analysis, retrofits and repairs will be made to the main building of Shade Tree, such as sealing ductwork and installing additional insulation. Green Chips is providing \$20,000 for the audit and retrofits.
- How much will Shade Tree save on its annual electric bills?
 - Shade Tree's monthly electric bills currently run approximately \$5,000. The combination of the solar photovoltaic installation and the energy saved by the efficiency retrofits and repairs is expected to save up to 10% on those bills, or approximately \$500 per month. Annual savings are expected to exceed \$5000.
- What are the details on the solar photovoltaic installation?
 - Bombard Electric, LLC donated and installed a 3 Kilowatt system consisting of 14 Sharp® solar photovoltaic modules, manufactured in the US. The system was installed on the roof of the animal shelter building at The Shade Tree and will produce 6000 or more Kilowatts per year, about the usage of the animal shelter; any excess will go to the regional electric grid.
 - Bombard Electric, LLC is Nevada's largest photovoltaic contractor with over 20 Megawatts of renewable solar energy installed in the State.
 - The system value is approximately \$20,000 (including installation), and takes 1 to 2 days to install. The Shade Tree installation took 2 days over the past week.
- How does this solar system compare to one that a homeowner might install?
 - A system twice the size of the one installed at The Shade Tree would be needed to provide energy sufficient to cover most or all of the annual usage of an average-sized home in Las Vegas.
 - For individual homeowners, subsidies are available that will cover up to half the cost of the purchase and installation of the system.

- What do the energy audit and energy efficiency retrofits consist of?
 - The energy audit is a full examination and analysis of the energy usage in the main building of The Shade Tree. Based on the analysis, retrofits will be proposed to minimize energy waste and to reduce energy usage. Common retrofits include sealing air-conditioning duct work and installing additional insulation.
 - Green Chips is paying \$20,000 to cover the energy audit and retrofits. Repairs and retrofits will be maximized by using donated labor whenever possible.
 - In addition, Local 525 of the Plumbers and Pipefitters will be conducting an analysis of water usage to identify and repair any potential leaks.

- The Shade Tree main building is only 9 years old; will there be significant ways to improve energy efficiency?
 - Yes. Almost any building not constructed to the highest LEED standards can be improved with simple steps such as sealing and insulating air-conditioning ductwork and installing additional installation.
 - In some older buildings, energy savings can be far more significant than those expected at The Shade Tree.

- How is the project at The Shade Tree being paid for?
 - Bombard Electric donated and installed the solar photovoltaic modules.
 - Green Chips is providing \$20,000 for the energy audit and recommended retrofits to improve energy efficiency.
 - Plumbers and Pipefitters Local 525 is providing an examination of water systems, and labor for repairs.
 - Other organizations, including employees of the City of Las Vegas, are planning to donate labor to provide retrofits and repairs once the energy audit is complete.

- What can an average homeowner or business owner do?
 - A variety of renewable energy systems are appropriate in the Las Vegas region, including solar, wind and geothermal installations.
 - An energy audit can reveal many simple steps and repairs to reduce energy usage.
 - The average homeowner and business can significantly reduce energy usage and costs through a variety of conservation initiatives, from turning off unnecessary lighting to reducing usage of major electric appliances.
 - A variety of subsidies are available to help homeowners make repairs and retrofits that improve energy efficiency.
 - Links are available on the Green Chips website (www.GreenChips.org) to hundreds of useful tips and sources for more detailed information.