



The Untold Story:

Extreme Solar Hero's Step Up to Save Extreme Makeover "Home Edition" Solar Water and Space Heating Systems

Yazzie Residence, Zero Energy - Home Pinion, Arizona



Project Name: Yazzie Residence

Year: 2007

Client: The Yazzie Family

Location: Piñon, AZ, USA

Building Type: Single-Family Residential

Donated Solar System Manufacturer:

SolarRoofs.com, 5840 Gibbons Drive Suite H, Carmichael, CA 95608

Contact: Al Rich: 916-481-7200,

RichSolar@SolarRoofs.com

Manufacturer's Brand: "Skyline"

Solar System Size: 800 square foot
comprised of 20 custom "Skyline" collectors,

10 collectors and 10 mounting rail system
were donated by SolarRoofs.com. 10

SunEarth collectors were paid for by ABC.

Storage Size: 2,000 gallons

Collector Slope: 60 degrees

Access: Inaccessible, Private

Submitted by: Al C. Rich

"Extreme" Solar Team Leads:

-John Tuttle and Paul Schlenz owners of
Inland Solar, Hemet, CA.

Mark Snider, Owner of Snider Electric,
Poway, CA.

-Al Rich, President of SolarRoofs.com,
Carmichael, CA.

ABC Host: Ty Pennington,

Designer: Paul Di Meo, Extreme Makeover

- Home Edition

General Contractor: HomeLife

Communities, Steve Sasso, Regional

President, Southwest Division,

Lance Guest, Vice President of Construction

Extreme Solar Hero's Step Up with Extra Trips and a Lot of Hard Hours:

In early April 2007, Al Rich of SolarRoofs.com Inc. was contacted by Snyder Electric at the Recommendation of Gary Klein of the California Energy Commission to supply materials and help install a solar water heating system. Al Rich, President and Founder of SolarRoofs.com, quickly agreed. What was initially expected to be a simple 60 square foot, 80 gallon "Skyline" freeze area water heating donation soon turned into a last minute huge 800 square foot, 2,000 gallon space and water heating system.

This large system was needed as a solution to a first Zero Energy Home "100% Green" Extreme Makeover - Home Edition in the Arizona desert. The project is a residence built in the northeastern Arizona community of Piñon, in Navajo County, in the Navajo Nation, northeast of Flagstaff, AZ for a single mother and her children. Seeing that his family's mobile home had no heat, at 13 years old, son Garrett, used his scientific intuition to create a solar air heater and a water heater. For his invention, Garrett became the first Navajo to win 9 out of the 10 Discovery Channel Young Scientist Awards.



All the collectors and arrangements were made within a week, and after driving the solar equipment in a rented Enterprise truck from Sacramento, CA to Pinion, AZ the real work began. Al Rich met up with Solar Heros John Tuttle and Paul Schlenz of Inland Solar. John and Paul had already been there for 3 hard days setting the mounting rails for the collectors in concrete.

John, Paul, and Al, along with wonderful volunteers set about installing the collectors in weather that had extremes from hail, cold and hot all in one day. Compounding the work was the insidious wind storms and choking fine red dust that got into everything.

After installing the 20 light-weight Skyline collectors, installing the 10, 160 pound collectors was quite a chore but all toughed it out in nasty, dusty, weather. The tank room went up amazingly fast and the 2,000 gallon tank was installed. A lot of hard work went into installing the three PEX heat exchangers. We all joked about ordering some "We Survived Extreme Home Makeover" t-shirts.

Because of the high stagnation temperature potential of the solar thermal systems, John, Paul and Al were very skeptical about using the specified PEX lines for the solar side heat exchangers. Unfortunately, their skepticism proved out as both of them blew out from the heat of the solar collectors after the power went out. Fixing the melted heat exchanger required an Extreme heroic effort by John, Paul, Al and Al's helper, Chris McKay, to replace it with a Stainless Steel heat exchanger. John and Paul made yet a third of the long and hard drives to the Yazzie home after the second PEX heat exchanger blew. They are three time Extreme Solar Heros!

On the second volunteer trip, Mark Snider and Barry Brooks did a heroic job of correcting and reinstalling the Heat and AC system to solar specs. There had simply not been enough time to get this right the first time. They did other improvements while Gary Stillwell and Bill Kincaid installed the Air Collectors that were delivered late. The Skyline collector covers were replaced and sealed by Chris McKay as they were not designed for the extreme red dust of the area. The team also replaced a mysteriously broken glass cover to one of the SunEarth collectors. Lance Guest of HomeLife Communities lent support and installed a special ventilation system.

After this Extreme effort, the space and water heating systems are online and producing large quantities of heat to keep the Yazzie family warm in winter and with hot water all year round. Extra power generated from the Yazzie's solar Electric PV panels and wind equipment will be funneled into the Piñon grid.



The "96-hour build happened with the help of hundreds of construction and other volunteers, who work in construction, help with meals, clean up around the jobsite and perform various other behind-the-scenes tasks. They're working hard, everyday. In fact, some get just 4 or 5 hours of sleep each night." ABC journalist and blogger, Jenn Burgess.

