



**Legacy Home**  
**Phoenix, AZ**

**\$0** Estimated monthly electrical bill

**0%** Ave. annual Kwh consumed from non-renewable sources

**-16** Home Energy rating score

**LEED Facts**

**Legacy Home**  
**Phoenix, AZ**

LEED - FOR HOMES  
Certification Awarded September 21, 2010

**PLATINUM 102.5\***

Sustainable Sites	15/22
Water Efficiency	10/15
Energy & Atmosphere	37/38
Materials & Resources	9.5/16
Indoor Environmental Quality	13/21
Locations & Linkages	9/10
Awareness & Education	2/3
Innovations & Design	7/11

\*Out of a possible 136 points

The information provided is based on that stated in the LEED® project certification submittals. USGBC and Chapters do not warrant or represent the accuracy of this information. Each building's actual performance is based on its unique design, construction, operation, and maintenance. Energy efficiency and sustainable results will vary.

# Habitat for Humanity – Legacy Home

## PROJECT BACKGROUND

Habitat for Humanity Central Arizona (HFHCAZ) is a non-profit affordable homebuilder for low-income families. This LEED Platinum Certified Net -Zero Energy project was selected as a Legacy Project for the 2009 GreenBuild International Conference & Expo. A Net Zero Energy home has demonstrated that on an annual average, it will produce the same amount of energy that it consumes. As the Legacy Project, the home was featured during conference presentations, through conference attendee tours and in promotional materials. HFHCAZ built the home in four and a half days during the conference with the goal to galvanize community spirit and collective resources for a local effort that contributes to long-term growth and development of sustainable communities in Arizona.

## SUSTAINABLE STRATEGIES

- **SS** - The site was designed to capture 100% of the rainfall that falls on the property. Pieces of a demolished concrete driveway from the same neighborhood were diverted from the landfill and laid down as pavers to make a permeable driveway.
- **WE** – The Landscape design eliminated the use of turf and instead utilized low-water use native desert planting coupled with a drip irrigation system.
- **EA** - This home's envelope was built with steel stud Styrofoam SIP panels, polyurethane insulated attic space, and high efficiency windows. The systems installed include a 17 SEER dual speed split heat pump, solar hot water heater, Energy Star Certified appliances, 100% CFL light bulbs, and a 5-kilowatt photovoltaic system.
- **MR** - SIP panels, a minimized waste order factor, and diligent recycling diverted 74% of the construction waste material away from landfills.
- **IEQ** - Indoor toxins are minimized through exposed concrete floors, wire shelving, low VOC sealants and adhesives, and a shoe removal area.
- **LL** - Previously developed, the site is located within the vibrant neighborhood with walkable transit and community resources.
- **AE** - As the Legacy Project for the 2009 Greenbuild Conference and Expo, the project was shared with the public through presentations, lectures, and on site tours.
- **ID** - The address for this corner property was changed to allow us to orient the home for passive and active solar applications.

## MEASUREABLE RESULTS

- **Energy Savings:** On a yearly average, this home has been estimated with energy modeling software to produce 2,350 more kWh than it consumes. Actual, results will vary with homeowner lifestyle but through a net metering utility program, the homeowner could earn over \$100.00 a year from surplus electricity sold back to the power company.
- **Water Savings:** Annually this home is predicted to use 38,700 gallons per capita LESS than the Desert Water Agency per capita water usage. A 50% reduction achieved with desert landscaping, drip irrigation, a compact plumbing system and all low-flow plumbing fixtures.

## SUSTAINABLE DESIGN CHALLENGES

Habitat knew they would face challenges in trying to build a LEED Platinum certified, affordable home in 5 days with 500+ unskilled volunteers while incorporating new green techniques, and then facilitating tours and presentations of the project within those same five days of construction.

However, when it came to sustainable challenges, the greatest challenge faced was that of achieving a Net-Zero level. We meet with industry professionals to redesign an existing plan awarded LEED Platinum certification the year prior. Our team worked on ways to make the existing model a more energy efficient home by utilizing the Bii SIP wall system and moving bathrooms to create a compact plumbing core. In order to obtain enough south facing roof area, the address was changed. This decision allowed the roof to be oriented to support passive and active solar applications. In addition, window overhangs were utilized to control heat gain according to seasonal needs. This challenge was over come through long term planning and teamwork throughout the process.



Photo by Matthew Strauss Habitat for Humanity Central Arizona



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## PROJECT TEAM

**Owner:** Habitat for Humanity Central Arizona  
**Architect:** Orcutt Winslow  
**Civil Engineer:** Griffins-Jacobs Engineering  
**Structural Engineer:** Felton Group  
**Landscape Architect:**  
**Mechanical Engineer:**  
**Electrical Engineer:**  
**Contractor:** Habitat for Humanity Central Arizona  
**Provider:** Energy Inspectors

**Project Size:** 1,314 S.F.  
**Bedrooms:** 3



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