

Client: Navajo elders and tribal members
 Developer/Builder: Indigenous Community Enterprises
 Architect: Nathaniel Corum
 Builders: Western Strawbale Builders, Matt Robinson, Jaime Ballesteros

Project Engineers: Bill Druc, P.E., Art Fust, P.E.
 Project Partners: Navajo Housing Authority, Navajo Tribal Utility Authority, U.S. Department of Agriculture Rural Development, Arizona Department of Commerce, Architecture for Humanity

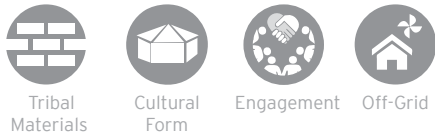


Photo: Harry Connoly

OFF-GRID TRADITION

Indigenous Community Enterprises (ICE), one of the first green builders for the Navajo Housing Authority, providing culturally-appropriate housing for low-income Navajo tribal members. The Elder Hoogan Homes initiative worked directly with Navajo elders who helped design floor plans that would support traditional life-ways while being efficient and low-impact. On off-grid sites, the homes often make use of traditional design knowledge, local skills, and materials from Navajo Nation, including straw bales from Navajo Agricultural Products Industries (NAPI) and timber from tribal forests.

CORE PROJECT EMPHASES:



LESSONS LEARNED

- Good building envelopes reduce heating costs, which is extremely important in rural, off-grid homes.
- Low-tech alternative building materials can provide needed job skills to a community.
- New materials can be used to construct traditional housing types.

BEST PRACTICES

- The project benefited many communities by introducing Navajo workers to green building skills.
- Unique elder-approved designs included traditional hoogan designs built with new materials.
- Off-grid systems enable elders to live in their traditional lands, often far from paved roads and power lines.

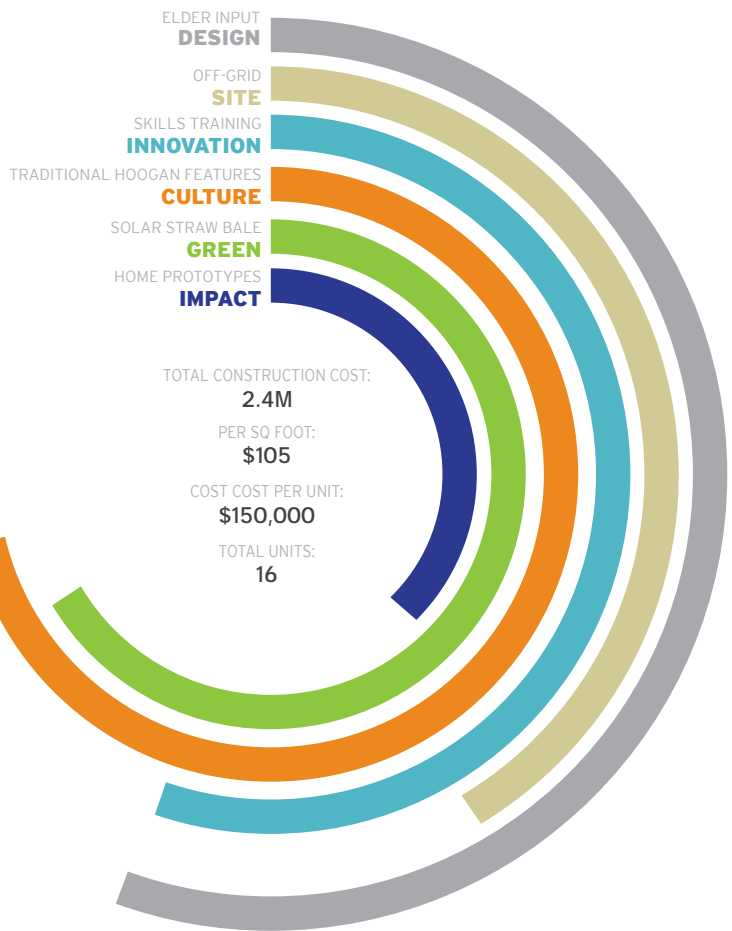


Photo: Harry Connoly



Single family



Southwest

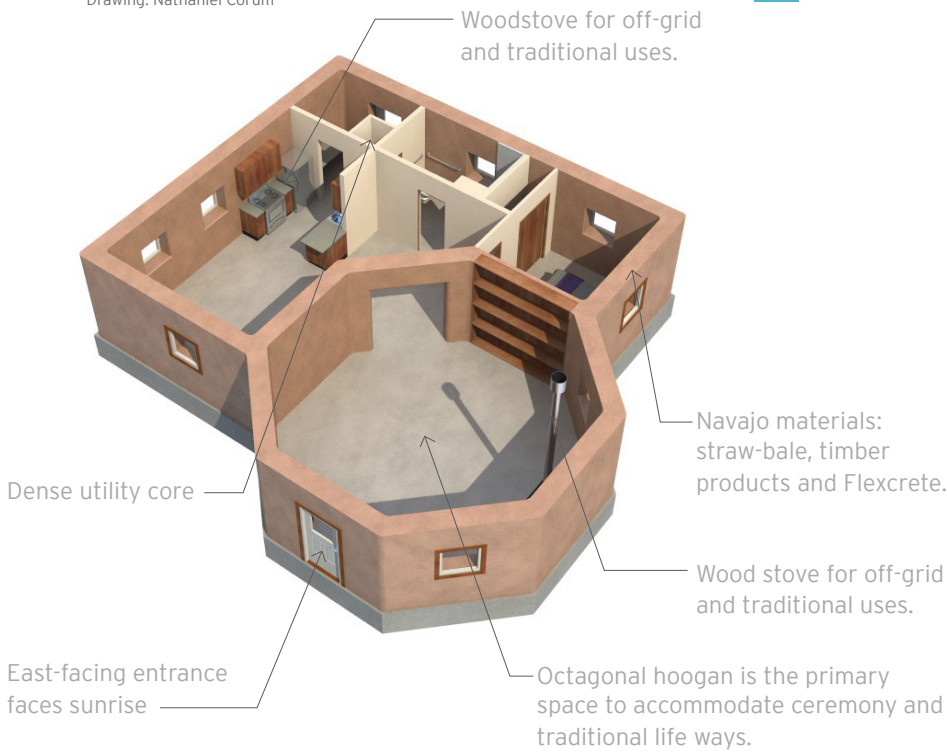
ELDER HOOGAN HOMES

DESIGN

Indigenous Community Enterprises (ICE) expressed an interest in designing a straw bale home with a culturally relevant design. To this end and with technical assistance from the Enterprise Rose Architectural Fellowship to explore the possibilities of traditional forms built of Flexcrete (a Navajo-owned, lightweight, energy efficient tribal building material) and with straw bales sourced from NAPI and SIPs systems. Several rounds of workshops with future homeowners and elders were held to determine floor plan variations and how to integrate hoogan forms with other rooms and features. 3 dimensional models were used so that elders could move walls and comment on their likes/dislikes among design options.

Passive Solar design | 1 bedroom | 1 story

Drawing: Nathaniel Corum



CULTURE

The designs and materials support traditional life in several ways. It was clear that an east entry and approach to the hoogan was important for cultural reasons. Additionally, the octagonal primary space on the interior supports ceremonial use while providing a traditional space for gatherings and ceremonies that reference the four directions. A wood burning stove has traditional as well as practical uses.

INNOVATION

This initiative represents a prime example of tribally staffed non-profits producing culturally-appropriate green home ownership opportunities. The Navajo hoogan, a traditional place-form, was designed and built with elder input and tribal workforce, with local and natural materials for the benefit of tribal families who wished to live in a more traditional manner. These traditional Diné hoogan plans utilized the off-grid systems, enabling elders to live in their traditional lands, even far from paved roads and power lines.



GREEN

This Elder Hoogan Homes initiative features passive solar design, natural materials, daylighting and efficient systems. In addition to solar-generated electricity, these off-grid homes use a cistern water system designed for Native houses that are too remote to hook up to a community water system. Homes feature green and culturally-appropriate features while focusing on efficiency, cost-effectiveness and ease of construction and maintenance. Tribal-member crews were trained in the 'tilt-wall' erection process. Straw-bale is a local, renewable, non-toxic and carbon-sequestering material. Stained concrete floors avoid many interior pollution issues. Other green features include: solar PV and/or hot water, post-consumer attic insulation (newspaper), rainwater harvesting, efficient fixtures and appliances, local wood and low/no VOC paints and stains and structural insulated panel systems (SIPs).

