

A Study in



**2017
HOUSES
AWARD**

EDITOR'S CHOICE

The 2017 Editor's Choice Award goes to Design Build Bluff—the graduate architecture program at the University of Utah—for their Badger Springs house, a striking modern home that is sensitive to the traditions of its Navajo owners and the desert landscape. Designed and built by students on a shoestring budget, this home, like all Design Build Bluff projects, is the result of ingenuity and passion, and is as much a study in culture and social responsibility as it is a lesson in keen design.

Design/Build

BY BRIAN PONTOLIO

This new home for a Navajo family blends traditional values with modern details and materials

If you love to design and build homes, and if you'd like to make a positive impact on the world, then this article may make you want to give up your career and go back to school for a graduate degree in architecture at the University of Utah, where each year the students design and build a custom home for a family of the Navajo Nation. The result of the intensive two-semester course is an inspired new home that is sensitive to the lifestyle of the modern Navajo people and the desert climate of the Four Corners region. And with each year and each house, a class of graduate students is more prepared than most for a successful career in architecture.

Architect Hank Louis, inspired by Samuel Mockbee's Rural Studio at Auburn University, recognized the Navajo Nation as a client-of-need and in 2000 launched a similar hands-on architecture program for graduate students at the state university in Salt Lake City. In 2004, the program moved south to a small campus in Bluff, Utah, where Hank and a team of students completed their first project on Navajo land—Rosie Joe, a unique off-the-grid home with a butterfly roof supported by an ingenious metal exoskeleton (photo p. 67).

Since 2004, Design Build Bluff students have finished 16 more homes as well as a handful of non-residential design/build projects. The 730-sq.-ft. Badger Springs

SPECS

Bedrooms: 0

Bathrooms: 1

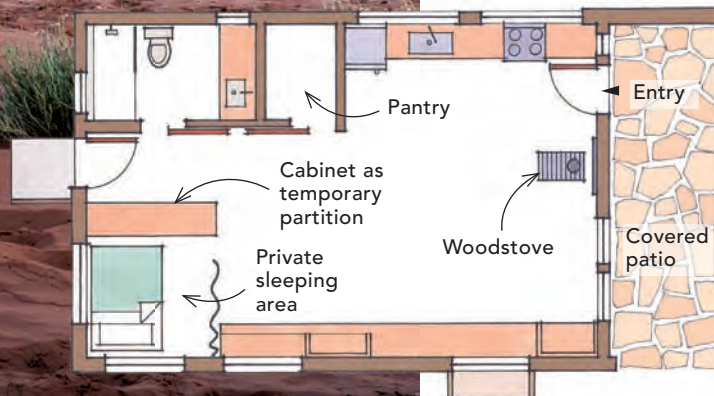
Size: 730 sq. ft.

Completed: 2015

Location: Mexican Water, Navajo Nation

Architect: Design Build Bluff

Builder: Design Build Bluff



HOGAN MEETS MODERN

Though far from round, this plan is arranged similarly to a traditional Navajo hogan. The open plan has only a temporary partition for a private sleeping area and only the bath and pantry have doors. Keeping with tradition, the entry faces east and the wood stove is positioned as the heart of the gathering space.



EARTH, WIND, AND FIRE

The exterior details—including the patio roof overhang and wall extension and the jamb extension on the south-facing picture windows—are designed to protect the living areas inside and outside the house from the harsh desert sun and wind. Exterior finishes include natural plaster made with clay harvested on site, shiplapped white cedar used as siding and for the deep soffit above the patio, and corrugated steel that has been left to acquire a rusted patina over time.



house featured here was completed in 2015. It has an open and adaptable plan ideally suited to the family that lives there. While the home has an edgy, modern aesthetic and many of the hallmarks of a small city loft, program director Jose Galarza, who inherited Design Build Bluff from Hank in 2013, explains that in many ways it is true to how the Navajo have lived for centuries in traditional structures known as hogans.

In keeping with tradition

Though there are a variety of different hogan types—one for women, one for men, one for shade, and one for ceremony, for example—they share similar traits. They are typically built from logs and clay, and are mostly round and domed. They have east-facing entries and a central fireplace. And even the hogans meant for daily life are typically one large open room where families and friends gather and sleep in the same adaptable space.

“If I were to ask you to draw a caricature of a traditional house, you’d draw a square with a triangle on top of it,” says Jose. “Well, that’s not traditional to the Navajo. They’d draw something round.” And yet the modern, rectilinear Badger Springs footprint allowed the students to overlay the hogan’s “cosmological blueprint,” as Jose calls it—a floor plan that is as much about Navajo spirituality and community as it is about domestic life.

The modern Badger Springs house embodies many of these cultural principles. The entry faces east, there’s a wood stove in the main gathering area, and there’s barely a bedroom—just a temporarily partitioned space for the homeowners’ daughter Janice. Mary and Gary sleep traditionally—on the floor of the main living space.

Tradition isn’t the only reason that keeping the custom of an open floor plan was important. Mary works with victims of domestic violence and regularly hosts gatherings of various sizes. An open space is easily adaptable to the family’s shifting day-to-day and future needs.

Like the Navajo’s traditional summer hogans that are designed to be well-shaded and cool, the windows in this house are carefully located to keep the home from overheating under the intense desert sun and were installed to be protected from the often penetrating southwest winds. The one large south-facing window is sheltered by a jamb extension that projects far beyond the plane of the siding. The patio is similarly protected



CLASS IS IN SESSION

The Badger Springs house was designed and built by the graduate architecture students at the University of Utah's Design Build Bluff program. With little to no prior construction experience, the students poured the footings and slab, framed the staggered-stud wall, and installed mechanicals and finishes with the help of technical advisors Atsushi and Hiroko Yamamoto and a few local contractors who volunteered their time. Grid Alternatives assisted with the solar install. The 2015 crew of students included Nathan Blair, Danny Carmen, Kirk Chadwick, Barton Done, Tommy Hancock, Josh Riffe, Spencer Swalberg, Megan Wayment, Jeremy White, Hangfei Zhang, and Shuo Zhao.



by a cantilevered roof and the extension of an exterior wall.

It's about people

Glance at the advisory team at Design Build Bluff and the program's mission comes into focus. Supporting Jose's leadership and the continued mentorship of Hank Louis are the

chair and dean of the architecture schools at the University of Utah, Mimi Locher and Keith Diaz Moore. The program also has two cultural advisors, Ceceilia Tso and Anthony Shirley, and a community-engaged learning assistant, J. Abubo.

Design Build Bluff is not only about building homes for people in need and coaxing

aspiring designers to get their hands dirty for the sake of a few valuable lessons in construction. It's about understanding architecture at the intersection of cultures, and learning how to work together toward solutions that respect the way different people live.

Jose and his team work with elders in the Navajo Nation each year to identify a client

for the project. They attend Navajo chapter meetings to understand the needs and desires of potential homeowners and use questionnaires to identify and prioritize the program for each project. This intake is done at the start of the fall semester and design work continues until the school's winter break. When the students return, they head imme-

diately south to Bluff where technical advisors Atsushi and Hiroko Yamamoto are waiting for them, ready to break ground.

Atsushi is a Design Build Bluff graduate who joined the staff after completing the program. Hiroko is an architect trained in Japan who spent many years as a project manager for one of Tokyo's largest construction com-

panies. As her interest in building with natural materials grew, she joined Atsushi in Bluff. The natural plaster finish found on the Badger Springs house is the result of her passion for natural materials. The clay used for the plaster was collected on site.

Each spring, with the help of fabrication consultants Mark Haslam and Adam Kilmer and a few local contractors who volunteer their time, Atsushi and Hiroko lead the student team through the build, including all aspects of construction and project management. This includes managing the cash build budget of \$25,000.

If that sum seems small for this home, consider that the true material costs are about \$55,000 when the value of in-kind donations and salvaged materials is included (the program currently has about 50 corporate sponsors listed on their website). If that number still seems low, consider that the value of the students' time is not included. But no matter how you look at the costs, this house is first and foremost an example of what can be done when ingenuity and passion collide.

"We spent the semester researching how to do things that none of us had done before," said Tommy Hancock, a former student who hopes to launch his own design/build firm. "Fortunately, there was always someone to bounce ideas off ... an electrician, a plumber ... and Atsushi has done this enough to know where we were going to need help."

Making materials count

Like most Design Build Bluff homes, the Badger Springs house is built on a concrete slab that serves as the finished floor. The wall framing is a staggered-stud assembly insulated with cellulose. With the help of the program's structural engineering consultant, Kyle Mullikin, the students designed and built the cantilevered flat roof to shade the porch and collect rain water. An EPDM membrane for the roof was one of the most significant single expenditures of the project.

Most of the siding is corrugated steel that will develop a rusted patina. Shiplapped white cedar is used as an accent on the south- and north-facing walls and on the underside of the cantilevered roof. All of the windows were donated or salvaged and the protruding jamb extension around the south-facing picture window is made from salvaged aluminum (and XPS foam) donated by 3Form.

Inside the house, the students fit the southern wall with full-height Baltic birch



OPEN AND INGENIOUS

The students used materials wisely to make an impact on the way the home looks and functions. The slab is scored and polished to be the finished floor. The kitchen cabinetry is made with birch plywood and a single open shelf is installed under the kitchen's high transom windows. In the bathroom, the barrier-free shower is integrated into the slab. The students fabricated a custom linear drain from donated salvaged aluminum.



DESIGN BUILD BLUFF THROUGH THE YEARS



2009
White Horse



2004
Rosie Joe



2012
Little Water



2014
Sol Rose



2016
Cedar Hall

plywood built-in shelves and long sitting benches with storage beneath. The kitchen cabinets are made from the same plywood and have donated PaperStone counters.

There is a feature wall at the bathroom and pantry with horizontal wall paneling and barn-style sliding panel doors made from old-growth Douglas fir salvaged from baseball bleachers. The slab-on-grade construction and open space make the Badger Springs house accessible, and this is carried through in the barrier-free bath. The pantry includes a place for storage, one of the keys to making the open space work.

Navajo people build their homes on leased sites. Being granted a land lease, however,

does not guarantee that utilities will be available at the particular site, and getting electricity or water hooked up can take a while. Mary and Gary were fortunate to be granted a lease near a highway where utilities are available. However, GRID Alternatives installed a PV system on the house, so the homeowners are typically only responsible for the minimal electrical service fee. The house relies on passive-cooling strategies with a little help from a donated Haiku ceiling fan. The wood stove provides any necessary heating.

Without discounting the significance of living in a great house, Jose is quick to point out that by building one home per year, Design

Build Bluff isn't making too much of an impact on the Navajo Nation. At the same time, the dedication of Jose, Atsushi, Hiroko, and the staff of advisors to the program and to each client, each house, and each class of students is clear in the work they do and the passion with which they speak of it. And, of course, Jose is being modest. While the full impact of a program like Design Build Bluff is unknowable, learning to listen, teach, and reach across borders and cultures is likely to have an impact greater than any house anyone will ever build. □

Brian Pontolilo is design editor. Photos courtesy of Design Build Bluff.