

DesignBuildBLUFF
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Our Mission: To provide architectural students a real-world, educational experience in physically connecting the experimental and standardized aspects of design. We aspire to open the minds of students, providing an unrivaled educational experience. Within this process, we hope to improve the lives all who experience architecture.

Our History

For years, DesignBuildBLUFF (DBB) founder Hank Louis dabbled in the design/build concept of architecture. Even before studying architecture, he built a home by himself in the jungle of Costa Rica without any further materials or knowledge than what he could scrounge from the landscape around him and a few borrowed books. After moving back to the states, Hank received a Masters of Architecture from the University of Utah in 1987 and began teaching graduate students at the U's College of Architecture+Planning (CA+P). Later, he started his own for-profit architectural firm, Gigaplex, Inc. in Park City, where he lived. He also began looking for some design/build opportunities that would serve the higher purpose of helping others he felt burgeoning inside of him. While on a trip to visit the Rural Studio at Auburn University, a design/build program providing homes for poverty-stricken residents of the Black Belt in Alabama, he was inspired. Hank realized that his students needed this type of real-life experience in their chosen field. Having always had a keen interest in the drastic need for sustainable housing on the Navajo Nation Reservation, he married these two passions and suddenly recognized his mission, founding The Center for Life Specific Design.

Unable to persuade the U to back his "radical" idea of a design/build Studio, Hank funded our first three projects himself, with the students volunteering their time. Our breakthrough came in 2003, when the U, finally convinced of the educational benefits of the program, agreed to give a Studio to Hank at the CA+P. Our first home, the Kunga House in Salt Lake City, was completed for a Tibetan refugee family of eleven over that school year. The Kunga House was the first straw bale home to be built in Salt Lake County. The attention that the Kunga House brought allowed us to take our program to Hank's intended location: the Navajo Nation Indian Reservation in the four corners region of Utah.

More than 250,000 Navajos live on this tribal land. They face some of the worst housing conditions in our country. The unemployment rate is more than double the national average and nearly half (43%) live below the poverty line. Over forty percent live in overcrowded or dilapidated housing. Basic infrastructure, including water, sewer and roads, are often severely inadequate (indeed, most of the reservation is off-grid). Add to this the unique situation of building on sacred land, which requires careful, non-disruptive techniques, and it is obvious that the reservation is the best educational environment for our students and projects. (And, as Hank is fond of saying, it is just far enough away from Salt Lake City-a six hour drive-that the students won't run home if they get the sniffles!) Hank purchased the historic Al Scorup House in nearby Bluff, UT as a dorm for the students. At this time, realizing that his dream had come to fruition, Hank changed the name of the organization to DesignBuildBLUFF, reflecting the program's physical home and its commitment to the area. In 2006, DBB became a 501 c3 nonprofit and we lent ourselves to the University of Utah as a "supporting organization".

Our Commitment to Environmentally-Friendly Design/Build

The need for architects and builders to confront the realities of our untenable built environment has never been more pressing than now. Because we are a nonprofit, and our projects are on the Rez, taking place over the course of only two semesters, the unique time, material and monetary constraints imposed by our program addresses this need. The “green” nature of our projects, which entails using techniques such as earthen plaster walls, solar power, permaculture construction and rainwater reclamation systems, as well as utilizing the natural environment (dirt!) and recycled and found materials to build, is not only critically important for future architects to recognize, but it also maintains excellence in eco-sustainability in an environmentally friendly and responsible manner. Over ninety students have participated in our program. The impact that participating in DBB has on them, both personally and professionally, is powerful. As students in this field are preparing for their careers, they rarely have the opportunity to learn the practicalities of their profession. The studio culture prevalent in most academic institutions focuses on theory and design and little on the hands-on application of architecture and its impact on surrounding communities. In addition, the greater emphasis of a personal investment in a project benefits the development of students’ design methodology; DBB students become architects of their own education. We espouse the Chinese proverb: “I hear and I forget. I see and I remember. I do and I understand.” In the end, what the students learn inspires all, ultimately elevating the profession of architecture and opening eyes and minds of the design/build community.

Our Accomplishments

Project 2008; ship/SHOP and Tositsa

Our 2008 project was a very different circumstance from past years: With fourteen students enrolled in the Studio, we lacked housing for six students. Mr. Pat Tripeny, the Associate Professor who tracks enrollment at the CA+P, has assured us that the Studio will continue to attract between twelve and fifteen students per year, guaranteeing an ongoing issue in student housing. Over the last two years, we have experienced student overflow to a smaller extent and have rented additional housing; this option was now prohibitively expensive. As a result, we took the 2008 year to build a facility on the Scorup property that will accommodate more students as well as provide much-needed work space. The structure, dubbed “ship/SHOP”, is designed around two discarded steel shipping containers and includes a fabricating workshop, bathroom, and sleeping quarters for six. As we grow, it is our long-term goal to be able to pre-fabricate certain proto-type housing pieces in the workshop (such as rammed earth walls, passive solar gabion cages, and rainwater reclamation roofs) that can easily be transported to building sites on the reservation. ship/SHOP will allow us to realize that objective, as well as accommodate student growth. Additionally, the students designed and built a bathhouse. “Tositsa” is made out of the sandstone earth that covers the reservation and FlexCrete, a locally produced flyash material. It will provide two additional showers and toilets for students, as well as a warm, relaxing sauna and saltwater tub (with killer views!) for students to ease their aching muscles after long, cold, hard days of construction.

We look forward to our 2009 project, beginning in October 2008, when we will again design and build green sustainable homes for needy Navajos, completing the homes in an even more efficient manner with the aid of our new workshop.

Project 2007; Benally

(Bluff, UT) The beginning point for designing this home was the “central hearth”, which in Navajo culture is traditionally an exterior fire pit; a family and community gathering place. After we designated this area (with an X drawn in the earth), mere steps from the breathtaking sweep of the red bluff that rises behind the Benally lot, we drew lines from the pit itself connecting each of the four sacred mountains from the Navajo Creation Story. The pie-shaped parapet walls were then designed on these lines in four forms, with the pitch of the roof wrapping around the walls. They are wide open, allowing easy access to all 1100 square feet of the Hogan-shaped home. Once the building process began, we decided that the interior walls would be hand-made adobe-like brick, made from rejected road base found dumped nearby. Icynene foam, a green, water-based, open-celled product, insulates the roof and the three framed walls; donated birch-veneered plywood covers these same walls. Various pipes and metal pieces discarded and salvaged from commercial construction sites in surrounding urban areas serve as supportive interior columns. The floor was left the bare concrete foundation, and sealed. A river rock trombe wall (rocks hand moved from the San Juan River to the building site by the students) runs the length of the main bedroom. The trombe wall provides whole-house solar heat on winter evenings. Raw cork found in a local elementary school dumpster covers the ceilings. The Benally home is the first built by DesignBuildBLUFF with availability to electricity, so we were able to install a donated radiant floor heating system, which was a fantastic learning experience for the students. The casing for the exterior evolved into ungalvanized corrugated metal, found at the local gravel pit/dump and pounded flat by the students to conform to the round shape. Rusted mesh found at the same pit serve as soffit. Discarded rubber tires, collected from the land on the Reservation, form a courtyard that greets visitors at the front of the home. Finally, the central hearth fire pit was constructed from a giant inverted funnel salvaged from, again, the local gravel pit.

Project 2006; Sweet Caroline

(Navajo Nation, UT) The design of this home was based on the idea of two different worlds, or cultures merging together: Anglos and Navajos. Our concept is first represented in plan. There are two central walls. One wall is straight and the other is curved. This is where the Modern Anglo rectilinear home breaks off from the Navajo Traditional Hogan. It is the central space between the two walls where these two worlds merge. As in traditional Navajo homes, this home features a door entrance on the east and a central fireplace. The idea continues through the use of materials. For example, Hardiboard is a newer product used for siding in comparison to more traditional earthen plasters used to cover and strengthen walls. To merge the new with the traditional, a major material used throughout the building is Flex-Crete. This home also employs sustainable building techniques including a rammed earth trombe wall and passive solar design.

Project 2005; Big Johnson

(Navajo Nation, UT) The Johnson House is a 1400 square foot straw bale home and carport. The finished house consists of a great room and kitchen, four bedrooms, one full bath, one half bath/laundry room, and a 300 square foot carport. It utilizes a post and beam structure with custom designed steel trusses that allow an open span of 28' in the great room. The straw bale acts as an insulator, providing the residence with double the insulation of a conventional home. The south wall of the home has large windows that

allow passive solar gain which is captured by the thermal mass of the concrete floor and dissipated throughout the house during the day and night. The roof casts a shadow over these windows during the summer but allows the sun in during the winter. In addition to the sun, a wood burning stove provides an additional heat source. The exterior structure consists of three simple shed roofs for the carport, main level and split level bedrooms. Bales are finished in an earthen plaster, made from a local top soil and sand. The cantilevered bedroom corner is clad in metal, creating an interesting juxtaposition between materials. The carport uses a post and beam structure as well with river rock filled gabion cage walls. The rock gaps allow for a gentle breeze, but block the sun and high winds. A roof above protects from the rains and snow, while open top windows allow light and ventilation.

Project 2004; Rosie Joe

(Navajo Nation, UT) The Rosie Joe house is built around the great room concept, with three bedrooms and a bath, a total of 1200 square feet. Rammed earth was first, for its aesthetic (geological-like striations and connection with the ancient Anasazi architecture), beauty, ready availability (sand for miles and miles, and clay deposits in the vicinity) and thermal mass capacity (18 inches thick). The idea was to use the rammed earth interior wall in a Trombe-like fashion, with a south-facing, glass-lined hallway designed to allow winter sun in and to shade all of the summer sun away. All of the rooms are attached to the massive central rammed earth wall, tucked to the north, with openings in both the rammed earth wall (doorways without doors, by request – privacy not being a huge issue in the Navajo culture) and the exterior north wall – loose fire-proofed (Timbor and 20-mule team Borax) straw sandwiched by clear acrylic panels -- to allow for natural ventilation. Next was the butterfly roof to provide water catchment, 2500 square feet in all, designed to fill a cistern with just a couple inches of rainfall. A composting toilet was provided but declined in favor of the traditional outhouse (a septic system was rejected early on as beyond our scope, and perhaps superfluous), however gray-water drainage is provided to which a sewage system can be attached in the future. The butterfly roof floats above the house, above a cellulose-insulated, corrugated metal roof, providing additional cooling and a shade structure. The lower, interior roof was designed to allow the ceiling to be constructed with in fill, found wooden pallets of varying sizes, lined with canvas. Photovoltaic panels, inverter and batteries were provided for lighting and small electric appliances; stove and refrigerator are supplied by propane.

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