



DesignBuildBLUFF: Drawing on two-by-fours

By Murrye Bernard

After years of solving design problems for imaginary clients through conceptual means, recent graduates are often overwhelmed when faced with developing detailed construction drawings. University-based design-build programs, such as Samuel Mockbee's Rural Studio, are changing that by providing practical construction experience for a good cause. Inspired by Mockbee's efforts, University of Utah professor of architecture Hank Louis started DesignBuildBLUFF in 2000 in partnership with the College of Architecture + Planning program.



Photo courtesy DesignBuildBLUFF
Benally House, 2007

Louis and his team completed several projects in the Salt Lake City area before focusing their efforts on the Navajo Nation Indian Reservation in Bluff, Utah. Faced with high levels of unemployment, nearly half the population lives below the poverty line and lacks basic infrastructure. DesignBuildBLUFF seeks to address the Navajos' housing needs in an ideal laboratory for learning—starkly beautiful desert landscape and the absence of building-department regulations.

All of DesignBuildBLUFF's projects incorporate sustainable design strategies, from the use of local materials to passive solar design elements. The first home completed in Bluff, Rosie Joe (2004), features a distinctive butterfly roof that collects rainwater. The Big Johnson House (2005) is a straw-bale structure finished with earthen plaster made from local topsoil and sand with an accompanying carport constructed of gabion cage walls filled with river rocks. Sweet Caroline (2006) combines salvaged bedrock and reed from the local riverbed as well as Flex-crete, an innovative material, locally produced by the Navajo community, which weighs five times less than concrete. The program's most recently completed project, the Benally House (2007), is set against a bluff, employing adobe brick, cork, and a river-rock Trombe wall.

During the fall semester, the students, who are in their first year of grad school, interview several families before selecting one. A design charrette follows, and two refined ideas are presented to the family. Students develop rudimentary working drawings of the final scheme and begin construction in the spring semester.

Tom Newman, a member of the Big Johnson team, explains that they were "decidedly open-minded about exploring different building types and structural solutions," and that students "worked with local steel fabricators when it came to the design of our main structural system, an inverted king-post truss."

As is often the case on job sites, obstacles occur and students are forced to sketch to create solutions—a skill that is often neglected in the studio due to available computer technologies. “We designed the house details on the back of a two-by-four; maybe a thousand two-by-fours,” notes Katrina Mustoe, another Big Johnson team member. Despite the hands-on experience the program provides, other professors in the college have been critical—“I’ll never forget one of the stronger-headed studio professors battling against the idea of DesignBuildBLUFF’s inception, screaming, ‘What can they learn just pounding nails!’ ” relates Louis. However, the school has become more supportive in light of the program’s recent success: DesignBuildBLUFF has won several AIA Awards and is dramatically growing, from eight students in a typical semester to 14 enrolled this year. And that strong-headed studio professor? “After a visit to see what we do, he has become one of our biggest proponents,” Louis says.

Originally published in our **April 2008** issue.

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