

FULL CIRCLE

Lessons from Afghanistan

by Robert Hull FAIA

When I left Afghanistan in 1972 after four years building schools, it was a peaceful, yet extremely poor country. It was still a kingdom. The people were kind and tolerant of foreigners, and looking back, much more tolerant than many Americans.

The Afghan civilization is an ancient culture. Since its beginning the people knew how to capture passive solar, prevailing summer winds, and protect themselves from the harsh environment without power. Building materials were simple: mud, stone, brick and very little concrete. Glass and steel were expensive because they came from Iran and Russia.



Robert Hull

Clinic under construction.

So what did our team of six Peace Corps architects learn from that experience? Interestingly, aside from a few articles in ‘The Whole Earth Catalog,’ Americans and the rest of the world were not even thinking about sustainability in 1968. It turned out to be a necessity for Afghans. Afghan schools had neither power nor heating systems. It was quite a surprise that our Afghan counterparts became our source of information.

There were several design concepts that permeated our school designs. First, because of the lack of heating systems, school was conducted outside in the courtyards during winter. This seems counter-intuitive at first but the reason

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was that walled courtyards provided wind protection and the sun provided the warmth by having classes backed up to south facing mud walls (think in terms of bright clear Colorado winters). Second, classes moved inside when the summer heat forced students into the cooler thick mud walled classrooms. Depending on local conditions, cool prevailing summer winds could also be captured to augment cooling. In summer the southern deserts created plumes of vertically rising thermals that drew in cooler air from the north from the Caspian Sea near Iran, and southern Russia. These cool winds (known locally as the 120 day winds) were captured and brought into the classrooms. When approaching villages, these scoops mounted on the tops of mud domed roofs and vaults created incredible vernacular compositions.

Their architecture was beautiful and rooted in their culture. Their structural systems were rationally based arches, domes and vaults and constructed of local materials. All of this plus their blue clad mosaic tiled Mosques were set against the backdrop of the desert and mountains. Then came the wars...

That brings me to today. Now, I am designing a village health clinic outside of the town of Herat where I was a Peace Corps volunteer. Health care is practically nonexistent and the statistics are grim—especially for women and children. I am working with Sadiq Tawfiq, an Afghan who grew up there but now lives in California and has built several orphanages and a blind school. He tracked me down,



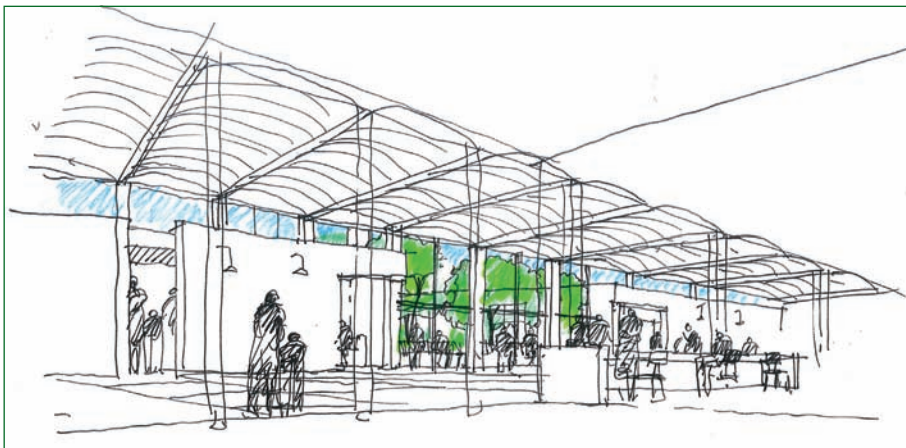
View of Herat.

remembering a building I had done in Herat. We, along with the Afghan Amity Society (<http://afghansociety.org>), a cadre of caring individuals, are on a mission to build a clinic that provides villagers with basic health care and yet is sympathetic to the culture and architecture of the country. All those past experiences wash over me as I continue to use those basic principles of sustainable design.

The clinic is to be strategically located in the desert between villages. The design concept uses an old idea of the walled “caravanserai” which historically was located on trade routes (the silk route), spaced out into one day journeys by caravans. It was a symbol of a haven for the weary traveler. The reason we are using it is to create security, to protect from the harsh desert and as a place of comfort for those in need of medical care.

Inside the protecting walls we are judiciously using water to drip irrigate green gardens to create passive natural cooling. Aside from the surgery area we are still using wind scoops for natural cross ventilation. We are using a bank of passive solar hot water heating panels to augment a hot water boiler system. Thick walls for mass, brick vaults seismically strengthened, and mud—beautiful mud walls are still our architectural vocabulary.

It is not lost on me that this experience brings me full circle. As my office continues to explore new directions in sustainable design, including the Living Building Challenge, net zero buildings, LEED certification, sophisticated mechanical systems and of course, our constant battle with our arch enemy carbon, we still rely heavily on those basic sustainable principles that humanity throughout history has always known.



Sketch of the village health clinic.

Robert Hull FAIA, is an architect and founding partner of the Miller Hull Partnership in Seattle, Washington. From 1968 to 1972, Hull served in the Peace Corps in Afghanistan, where he designed and built the headquarters for the National Tourism Agency and helped establish a school of architecture at Kabul University. In early 2010, he and his partner David Miller (RPCV Brazil) were selected for the 2010 AIA Seattle Medal of Honor in consideration of their extraordinary lifetime collaboration and the achievement embodied in their work.

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