

Presentation by Simone Swan, founder  
Adobe Alliance, Inc. to the EarthUSA  
meeting of September 30 - October 1, 2011  
Albuquerque, New Mexico, USA

## EARTH ARCHITECTURE IN AN AGE OF CLIMATE CHANGE: OF ROOFS AND DREAMS

As we know, deserts are expanding all over the globe according to recent climatic studies and the warnings and calls to action of the past century. The *Tapis Vert* of the Q'ran, or Green Carpet, once promised by Henry Kissinger for the Sahel, never happened. We need only read Vananda Shiva's seminal book *Staying Alive*, from 1988, to know that sands are creeping in India, China and South Africa. We in this assembly who care for the human right to a decent life are prepared to meet the basic global need for healthy non-toxic shelter; we are committed and energized to surmount an increasing variety of urgent problems, we also are experienced in handling those that develop gradually. We are aware, and ready.



### **THE ROOF IS NO LONGER A PROBLEM.**

At our teaching center in Texas on the Mexican border students from distant places learn to build by hand roofs in the configuration of vaults and domes, mastering the

archaic engineering technique from Babylonia. This skill was learned from the late Hassan Fathy of Egypt (1900-1989) with whom I had the privilege to apprentice in Cairo. Vaults and domes are built with no centering, no wood support whatever, thus reducing the cost of roofing to the amount of human energy invested in them. Our sun dried bricks measure 10"x7"x1.5", are made lighter with straw, in contrast to wall bricks 18"x12"x3". All is described in detail in Dr. Fathy's book *Construire avec le peuple*, Editions Sindbad, Paris. Readily available in English paperback, the University of Chicago Press' condescending title is *Architecture for the Poor*.

## **OUR PRACTICES, POLICIES AND PRINCIPLES**

In the Chihuahuan Desert, Presidio, Texas, the Adobe Alliance and friends apply the following policies:

1. we teach mud brick roofing made by hand strictly for economic reasons, liberating dwellers with minimal cash resources from purchasing roofing materials which are costly to transport. The beauty of our vaults and domes is a bonus.
2. we build by hand with local materials, namely: sun-dried mud bricks, local straw, reeds from along the Rio Grande river and the juice of prickly pear cactus from my land which enhances the adhesiveness of mortar and earth plasters;
3. we hire local labor since unemployment there is at 40%;
4. we do not rent machines to replace valued local paid human labor;
5. we successfully avoid incorporating industrial materials in our housing, for example we use no cement except in the foundations which consist of gravel, stone and rock, poured over with cement ( i must confess to having illegally but very successfully made a foundation of mud bricks and poured earth plaster over them -- everything holds) ;
6. we are making inroads in rain-proofing plasters with the addition of lime in both the bricks and the earth plaster.
7. we abhor the common notion that the less privileged deserve less.

## **SOCIAL SYSTEM TO BUILD A COMMUNITY**



As Hugo Houben of the CRATerre once said to me, "You are too grass roots for us," and indeed we work on the most modest of scales. We have, however, perfected a system worth applying precisely in times of climate change as community collaboration will become inevitable. Here I'll briefly recall Dr. Fathy's social system because it appears evermore relevant today and is well worth studying: In a desert region desperate for housing, his masons first built the public service structures -- schools, mosque or church,

library, market place -- with twelve families each providing one student worker. The worker learned while building, as do my students at our hands-on workshops. When the structures were completed each student hired or mobilized eleven workers lent by eleven different families in need of housing. Thus 144 able women and men contributed to the design and erection of twelve residences, and so forth, multiplying the solutions to the dreams of the ill-housed or the homeless. In his book, Fathy writes how no two people have the same dream, not even twins; how each family group has different needs for animals or children or relatives. These needs are met with little difficulty and much affection in preparing for the design of each house.

## **MUD ROOFS IN WET CLIMATES**

Nripal Adhikary of Katmandu, who also contributed to the recent September 2011 Habitat for Humanity assembly in Bangkok, is solving in his climate the design and construction of protective roofing with mud and bamboo. Nature is not lacking in contributions to our well-being. We recognize and accept what is offered freely in each environment. In our era of corporate-industrial marketing it is particularly tricky to convert to this concept. A key must turn in the lock of manipulated minds.

## **ACCIDENTAL TEX-MEX LOCATION**



Quite by accident in 1990 on a trip to a spectacular desertic region of Texas on the Rio Grande river I found a tradition of mud brick housing practiced by Mexicans generations earlier. I was also fortunate on a journey to the city of Chihuahua to

meet professors of architecture Roberto Carvajal and his wife Ana de la Rosa. They introduced me to designers and planners who were investigating housing possibilities and the earth as basic material for construction. We eventually conspired to keep in touch, in fact architect Carvajal last April introduced me to Mauricio Rocha Iturbide of Mexico City, a fine architect and builder in earth architecture who has created out of rammed earth a most successful art center with classrooms in Oaxaca, Mexico, and more.



But to begin in Texas in the early 90s I teamed up with a Mexican woman who speaks no English, Maria Jesus Jimenez, who knows how to handle mud mortar to make adobe blocks, who had experience in digging and building foundations and walls.

Together in 1998 we built the house which serves today as residence and teaching center for the Adobe Alliance, Inc., a Texas non-profit (extremely non-profit!) corporation in the vast desert on the border with Mexico. Here we teach in English, Spanish and French. Our students and participants come from Nepal, Brasil, Greece, Iran, Corsica, Mexico, Canada, France, England; few from the United States, mainly artists, and now



there is a resurgence of interest among US architects and engineers. We began by building a prototype house for an unemployed farm hand across the river in Mexico. This house of 550 square feet cost completed \$5,000 total in 1994, including

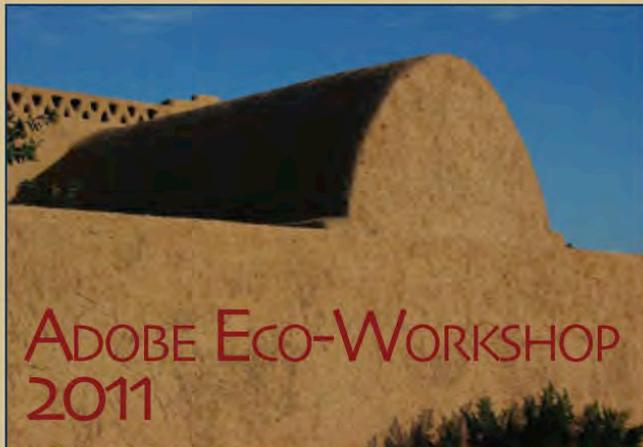
the wages of salaried workers, so about \$9.04 a square foot. Funding came from the Kaplan Foundation of New York. We were also asked to build in Texas an office for a television distributor, a music room for a lawyer in the area, and a rather large house, 3,000 square feet, for a software designer. It became difficult for me to keep the

workers salaried regularly, so I decided to concentrate on spreading the knowledge of mud roofing through the organization of two workshops a year in Presidio, Texas, where our center is located. It is too hot there to even walk in the desert in the summer months, too chilly and windy to work outside in winter, so we teach in the delightful months of February- March and October-November.

## **DREAMS**

I personally dream of building with people, with villagers, also students; of building a settlement, however small, to satisfy their needs in an era when housing loans collapse, expensive industrial materials are transported at high cost, and money to pay for goods and labor is scarce. My aims are to share the solutions we have encountered over the last twenty years, thanks largely to the vision of Hassan Fathy. I am looking forward with enthusiasm to guiding our Adobe Alliance to further its goals with others participating in this EarthUSA conference in Albuquerque, New Mexico. Our poster gives the dates and cost of our forthcoming workshop in Nubian vault building for November 2011 and our website is [adobealliance.org](http://adobealliance.org).

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# ADOBE ALLIANCE

A Texas non-profit educational corporation

At Swan House & Adobe Lab in Big Bend Country, reachable by scenic route only.  
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*Information on lodging, meals and directions is posted on the website  
[www.adobealliance.org](http://www.adobealliance.org)*