Investigating and promoting culturally and socially viable forms of earthquake resistant housing in the town of Pisco, Peru

Project Background

A large earthquake hit the west coast of Peru in August 2007, causing widespread damage and destruction, particularly affecting the coastal town of Pisco, located near the epicentre. Hundreds were killed and the housing stock was particularly badly damaged, largely due to the inability of traditional building methods to withstand such forces – adobe brick was the predominant vernacular building material which is highly brittle and prone to failure during earthquakes. Almost four years since the earthquake, the reconstruction process has been lethargic and there are a number of people in great need of adequate housing to protect them from the harsh desert climate and provide safety, security and sanitation. However, a number of organizations remain in Pisco, working towards empowering the local people and improving living conditions for many townspeople. I volunteered in the town for two weeks during a period of independent travel through South America in summer 2010 and was greatly moved by the struggle the local people faced in housing their families. As a student of architecture, I strongly believe that improved quality of housing can have a significant impact on the overall quality of life of these people as well as protecting them from future disasters.

Project Description

I will travel to Pisco in mid-June 2011 to undertake approximately 10 weeks of voluntary service with a local NGO *"Pisco Sin Fronteras"* who work closely with the local community to provide much needed housing. As a grassroots organization, they focus on individual homes rather than large-scale or "one-size-fits-all" solutions. However, as is common in disaster zones, people tend to have a short "seismic memory" whereby rebuilding to withstand a future disaster is not the first priority when compared to more immediate concerns such as cost and the urgent need for shelter. Therefore I intend to investigate the impact and acceptance of various building types by the local people and methods of improving resilience and safety.

I believe that the social and cultural significance of housing is often overlooked in post-disaster zones due to other apparently more pressing concerns. However for the long-term viability of any housing programme, I believe it must be in-keeping with the everyday needs of the community as well as incorporating disaster mitigation techniques. In my 4th year of university, this was the subject of my honours dissertation, and I intend to develop this research for the benefit of *Pisco Sin Fronteras* and the local community in the following ways:

- Further my research into the priorities and needs of local people via personal communication/survey, with a specific focus on the incorporation of earthquake-resistant measures.

- I will work daily on construction sites, physically rebuilding homes and working with the local people.
- Work with the other volunteers and the local community to promote the use of earthquake-resistant building materials and general design principles.
- When flying into Peru, I first arrive in Lima, where I will meet the dean of the Catholic University who has dedicated 30 years to researching methods of reinforcing adobe structures to prevent collapse during earthquakes. I will discuss the potential for training volunteers in these methods in order to provide this safe, cheap and traditional building type at *Pisco Sin Fronteras*
- Travel in Pisco and the wider area at weekends to visit and document specific examples of reconstruction projects and the opinions of the local people. I have a particular interest in the reinforced adobe structures completed by engineers from the Catholic University in Lima.