

BUILDING CODES FOR EARTHEN BUILDINGS IN SEISMIC AREAS: THE PERUVIAN EXPERIENCE

Marcial Blondet, Julio Vargas, Nicola Tarque

Abstract

In many developing countries in seismic areas the only housing solution for most of the population is informal construction with earth. Every time a strong earthquake occurs in those areas there is widespread damage, economic loss and death caused by the collapse of the earthen houses due to the destructive seismic action. In some cases, as in Peru, the academic and professional communities have reacted against this dreadful situation by conducting research to find adequate seismic reinforcement alternatives for earthen buildings, and the resulting solutions have been implemented in a building code.

Whereas adobe building codes are formal documents that provide technical guidelines with the objective of obtaining safer constructions, the main beneficiaries of the codes are in the informal sector of the population. The codes therefore provide a way to help bring the informal dwellers to the formal world.

This paper starts by presenting the effects of earthquakes on earthen dwellings and the technical solutions developed at the Catholic University of Peru (PUCP) for seismic reinforcement. The Peruvian Adobe Code is then described briefly, with critical comments on some design considerations. Finally, the authors share some thoughts and reflections on the usefulness of building codes for earthen building in developing countries in seismic zones, where the poorest inhabitants of the world are entitled to safe and decent housing.