



EARTH USA 2011

Sep 30, Oct 1 & 2, 2011 – Albuquerque, New Mexico

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Title:

OU Student Research with Compressed Earth Blocks

Abstract:

The housing industries are striving to find more sustainable products and techniques. While modern material science definitely enhances this effort, we should not forget a common material – soil. The dirt we remove from some construction sites may be our biggest resource to positively impact embodied energy in construction materials. Our vision is to develop a method of residential construction that will lessen the carbon footprint, provide a more thermally stable and healthy living environment, and withstand comparable lateral and seismic forces to conventional wood framing through the use of Compressed Earth Block (CEB) design and construction.

The students and faculty at the University of Oklahoma have taken on the challenge of quantifying the efficiency and sustainability of a CEB house. To achieve this comparison, they will build a compressed earth block house directly adjacent to an identical traditionally framed house and compare the two. The team has already begun actively working with volunteer students and local organizations to produce blocks and build a test wall. This allows preliminary investigation and lessons learned prior to starting the residential design. Dr. Lisa Holliday (Assistant Professor, COA Department of Construction Science) and Daniel Butko (Assistant Professor, COA Department of Architecture) will team teach a multi-disciplinary Earthen Design and Construction course during the Fall 2011 semester. The class will be comprised of architecture, construction science, landscape architecture, regional and city planning, environmental sciences, and civil engineering students. This paper will focus on the pedagogical approach to multi-disciplinary study of earthen construction.