

Graduate Student Research Abstract – Construction Practice (Non-Pedagogical Content)

Identifying Cultural Barriers Preventing the Adoption of Compressed Earth Blocks Construction in the North Carolina Piedmont

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The purpose of this study is to identify cultural barriers that are preventing the widespread adoption of compressed earth blocks (CEB) as a viable building material in the North Carolina Piedmont region. Earth construction has thrived in a variety of climates for thousands of years, but has been largely ignored by residential contractors in the United States, with the exception of New Mexico. Traditional earthen construction methods are labor-intensive and time consuming, but with the advent of automated earth block presses and soil mixers, these technical barriers have been greatly reduced. Moreover, the soil of the Piedmont region is rich in kaolinite (non-expansive) clay, making it well-suited to CEB construction. With this combination of ideal soil and the availability of labor as well as time-saving technology, cultural barriers must be explored as a potential obstacle to the adoption of CEB as a mainstream building material. Previous studies conducted in Africa and Southeast Asia show that earthen construction is often associated with poverty, transience, and poor performance. Studies performed in the Midwestern United States have indicated similar results. To address this need, a survey is designed and distributed to residential contractors and members of the general public to identify cultural barriers of CEB in the Piedmont region. This survey, based on instruments developed in previous research, aims to assess the perceived practical merits and drawbacks of earth building technology. Results are expected to indicate a public bias against CEB, based on misconceptions of its safety and efficacy, and a lack of knowledge of CEB construction best practices among residential contractors. This study will allow residential contractors throughout the Southeastern United States to better understand and address the misgivings of customers and builders who are unfamiliar with earth building, or who doubt the safety and durability of earth construction. The identification of these non-technical barriers is a necessary step for increased market penetration of CEB construction.

Key Words: Compressed Earth Block; Earth Construction; Public Perception; North Carolina