

Re-engineering the Traditional Adobe for Capacity and Quality

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Abstract

In most parts of the African Continent, history shows that most of the earliest man-made shelters were made of mud and clay in the form of adobe, rammed earth and wattled-and-daub earth buildings. These earth-buildings were popular, accepted, construction materials available and economical in construction, and this ensured adequacy of living shelters to the inhabitants. The story changed with the incursion of Portland cement into the building industry, popularizing cement-based structures as standard. However, in the last two - three decades, changing economic fortunes of most developing countries, including Nigeria, brought with it gross shortages in houses classified as standard. In the face of these housing shortages, the Nigerian reform agenda (NEEDS) has created a rekindled interest in the use of earth materials for standard buildings as an important component for the housing sector. By applying logic and modern construction methods to earth-building, thus re-engineering the process of the traditional adobe manufacture and uses, retraining the traditional earth-builders on quality improvement through stabilization at standardized mix proportions and methods of material compaction, capacity utilization would be enhanced. Traditional adobe and earth-building designs must give way to compressed earth blocks (CEBs) for better quality and design flexibility of the earth-buildings in Nigeria. Modern roofing and rendering must be incorporated into traditional earth-buildings without losing the natural advantages of the earth material. It is a near total overhaul of the traditional adobe, re-engineered to meet modern

construction designs and practices is necessary, thereby expanding the adobe capacity utilization and quality of earth-buildings.