

## **Evaluation of a Cost-Effective Interior Flooring System Using Burnt Clay Brick for Residential Buildings**

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### **Abstract**

Price escalation of construction materials and the economic crisis faced by the construction industry call the attention of building related professionals to experiment with cost effective material inventions. This research is initiated with the aim of developing a cost effective and an innovative interior flooring system using burnt red brick. The paper presents the findings of the initial step of the pilot study of the experimental research conducted to identify the potential of developing the proposed and to assess the feasibility of interior flooring system using burnt red bricks. The proposed system involves laying tiles on a well-compacted quarry dust layer, filling grout gaps with fine-grinded brick powder mixed with a binder gum, and applying multiple layers of grinded brick and binder gum paste to achieve a mirror finish. The economic benefits of the burnt red brick flooring system were explored in comparison to traditional flooring options. Among the various flooring options, the brick flooring system stands out for its remarkable cost-effectiveness. Priced at Rs. 570.00 per square foot, it offers an affordable solution that combines sustainability and energy efficiency. The use of locally available materials, such as burnt clay bricks, contributes to its cost-effectiveness. These bricks are produced at lower firing temperatures compared to porcelain or ceramic tiles, resulting in significant energy savings during the manufacturing process. By utilizing red bricks, which are widely accessible, the system reduces the need for resource-intensive materials and minimizes the environmental impact associated with their extraction and production. The findings of this research provide valuable insights into the viability of this cost-effective flooring system within the field of architecture.

**Keywords:** *Architectural appearances, Burnt clay brick, Cost-effectiveness, Interior flooring, Water absorption.*