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## **Construction of Low-Cost Houses in Natural Disaster Areas Using Earth Bag Techniques**

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Abstract: Natural disasters such as earthquakes, floods, and cyclones frequently devastate communities, particularly in developing regions. Traditional construction methods often fail to provide affordable, sustainable, and resilient housing solutions. This project explores the viability of earthbag construction as an alternative for building low-cost, disaster-resistant homes. Earthbag construction involves filling polypropylene or burlap bags with locally sourced soil and stacking them to form walls. These structures are reinforced with barbed wire between layers and finished with plaster to enhance durability and weather resistance. The technique offers several advantages: it utilizes abundant local materials, reduces transportation costs, and minimizes reliance on industrially produced building materials, thereby lowering environmental impact.

The project includes a comprehensive analysis of earthbag construction's structural integrity, thermal performance, and resistance to natural disasters. Case studies from regions like Nepal, where earthbag buildings withstood the 2015 earthquake without structural damage, demonstrate the method's effectiveness in real-world scenarios.

By adopting earthbag construction, communities can achieve affordable housing solutions that are both environmentally sustainable and resilient to natural disasters. This project aims to contribute to the development of building practices that enhance safety and quality of life in disaster-prone areas.

**Keywords**: Earthbag construction, Low-cost housing, Affordable housing solutions, Sustainable construction, Green -building materials, Eco-friendly housing



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