🌍 Why Reduce Concrete Use?

1. High CO_2 emissions - Cement production releases ~8% of global carbon dioxide emissions due to limestone calcination and fuel burning.

2. Heat retention - Concrete absorbs and stores heat, creating urban heat islands, making cities hotter.

3. Resource intensive - Uses large amounts of sand, gravel, water, and energy, causing environmental degradation.

🏠 Why Choose Natural Clay?

1. Low carbon footprint - Clay extraction and firing produce far less CO_2 than cement manufacturing.

2. Thermal insulation - Clay walls naturally keep interiors cooler in hot climates and warmer in cold climates, reducing energy for air conditioning

3. Biodegradable & renewable - Clay can be reused or returned to the earth without pollution

4. Aesthetic appeal - Gives buildings an earthy, traditional, and calming appearance.

🔬 Innovations to Support This Shift

1. Meta Clay bricks - Engineered clay bricks with improved thermal and structural performance.

2. Clay + straw composite panels - Lightweight, strong, and insulating wall systems.

💡 Proposed Research Focus

Title: Designing thermally adaptive clay panels

Objective: Replace conventional concrete blocks in tropical housing with locally sourced clay bricks enhanced using bio-additives like rice husk ash to achieve

1.Low thermal conductivity (keep houses cool)

2. Adequate compressive strength

3. Modular and aesthetic forms