

WPI

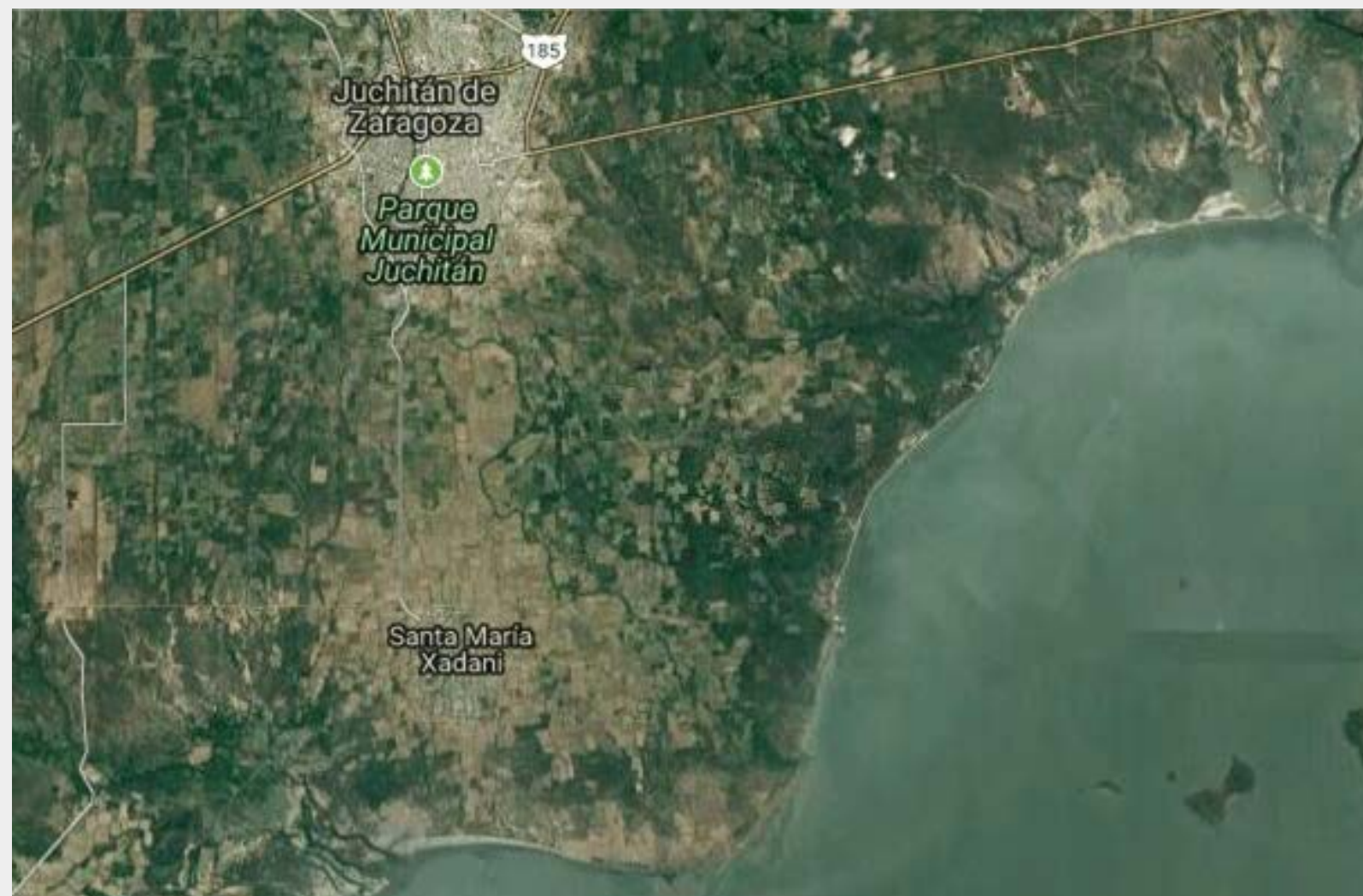
Shaking Things Up: Post-Earthquake Housing Juchitán de Zaragoza, Mexico

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Why is it needed?

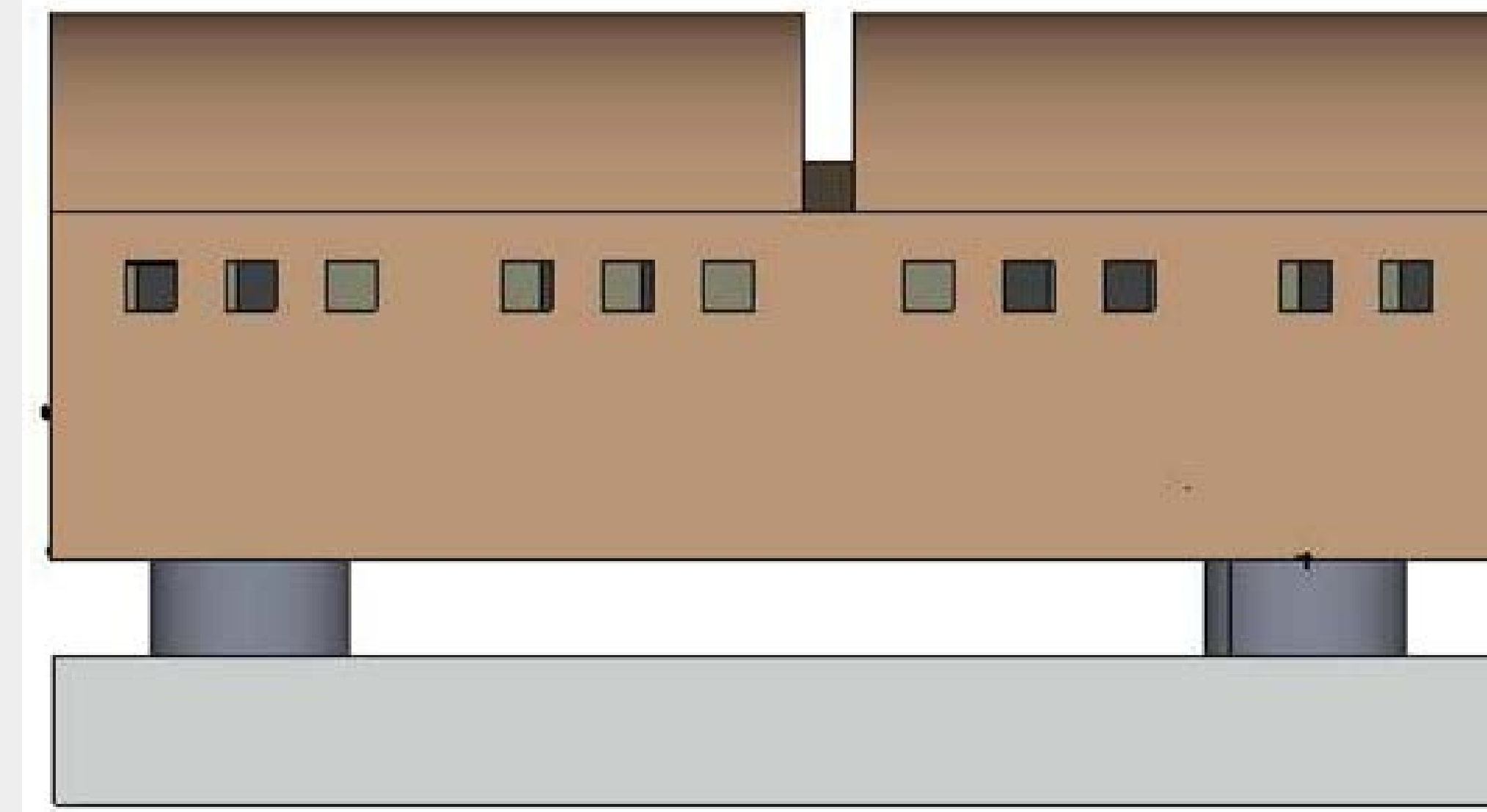
Juchitán de Zaragoza, Mexico, was struck by an 8.2-magnitude earthquake with an epicenter only 40 miles off the coast. The earthquake leveled 20-30% of the town's buildings, causing the tragic deaths of 61 people and injuring 250 more. After assessing the physical damage, the primary concern of the city was determining how to immediately rebuild permanent safer, stronger structures that are low cost.



Pictures from 2017 Earthquake

How Will it Be Built?

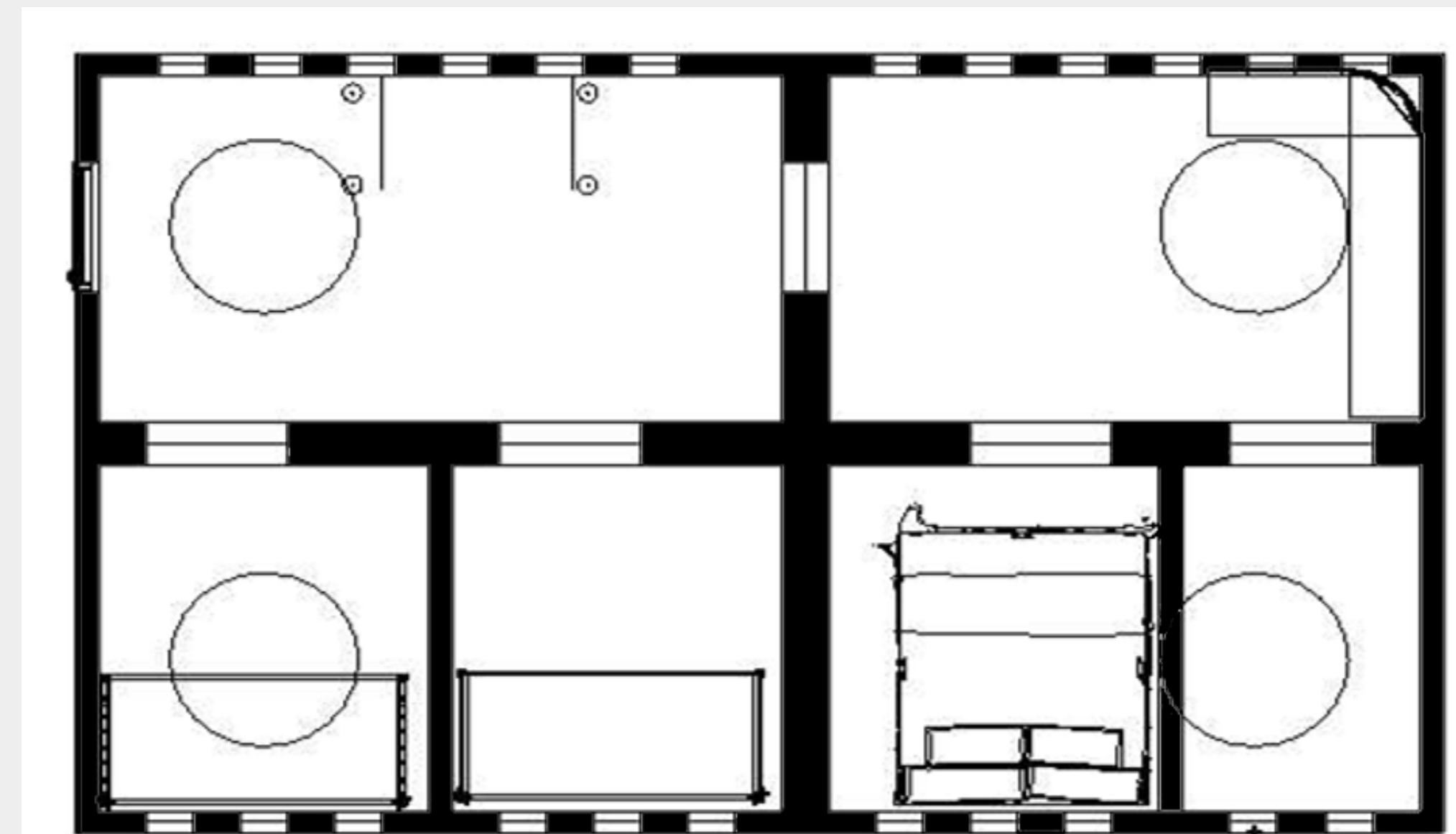
- **Earthbags:**
 - Filled with adobe mixture (water and dirt)
 - Rows stacked vertically, and built by locals
- **Barbed Wire:**
 - Layered between Earthbags
- **Isolated Foundation:**
 - Imported and house is built on top
- **Roof:**
 - Vaulted arch earthbags



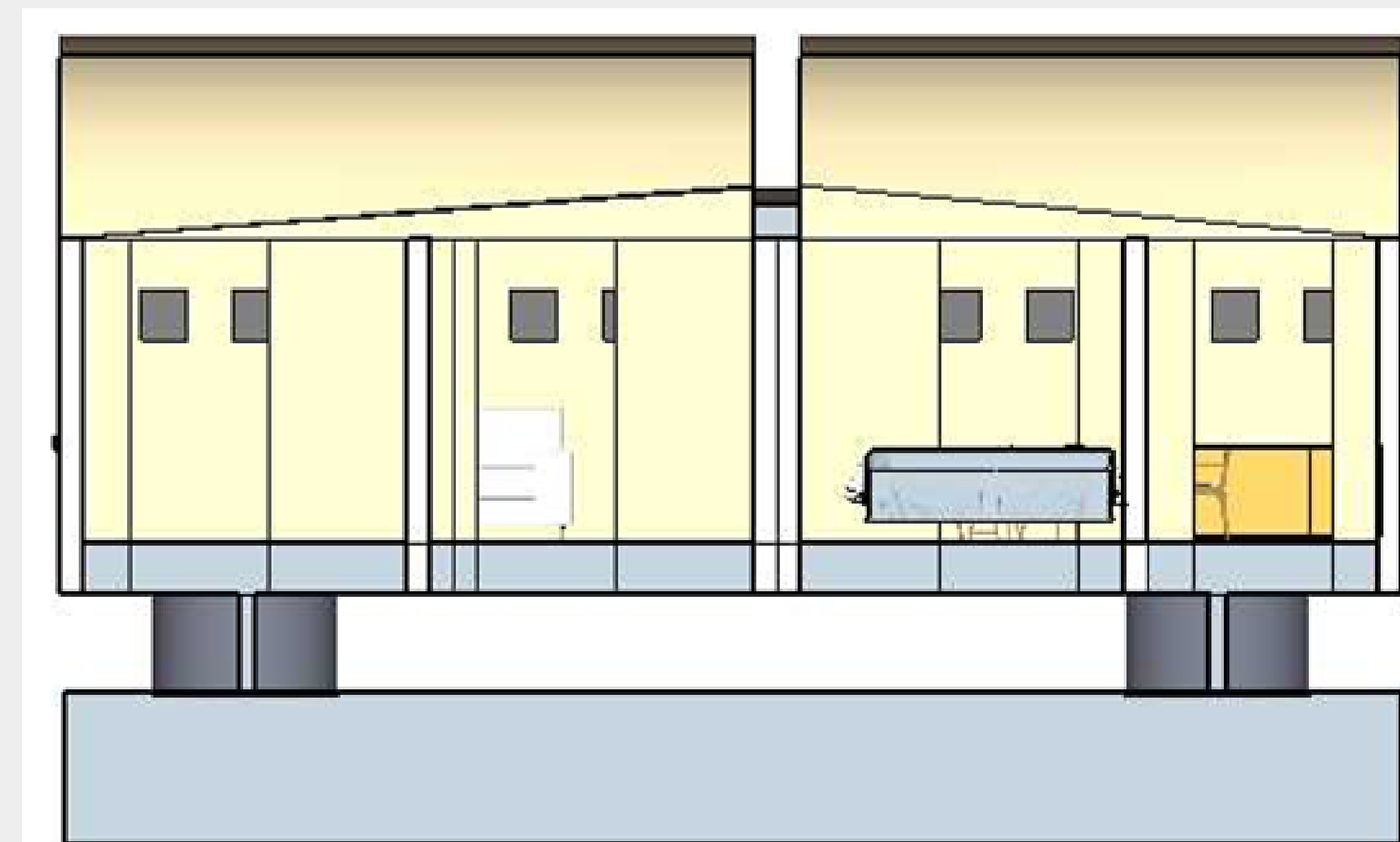
East View



Exterior View



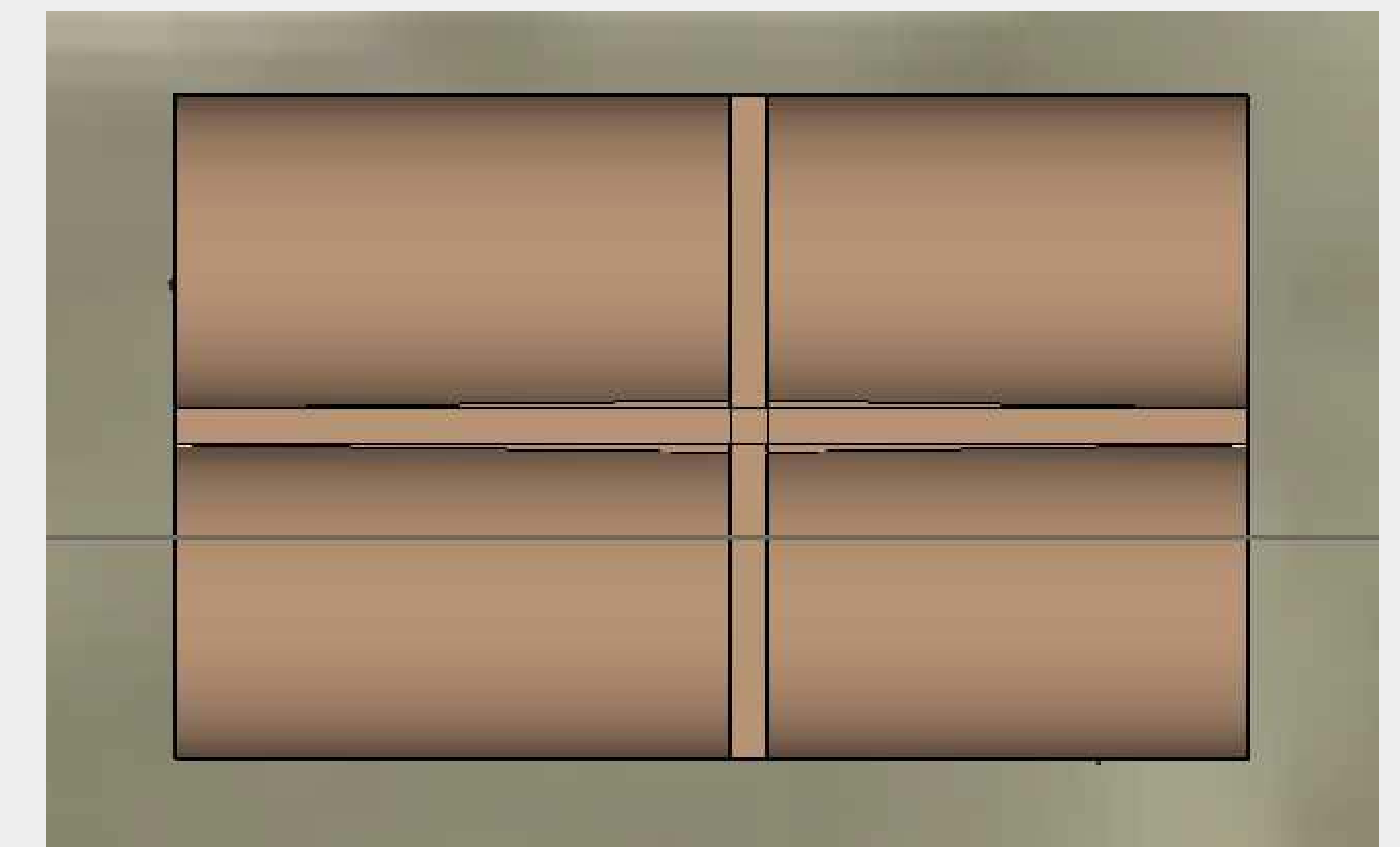
Floor Plan



Interior View

What is it?

- **Permanent, easy to build solution**
 - Avoids the overuse of “temporary” shelters
 - Can teach locals how to build
- **Base-Isolated foundation**
 - flexible joints (isolation bearings)
 - Sits on top of a standard concrete foundation
- **SuperAdobe: Vault Shape Roof**
 - Walls are covered in a layer of plaster
 - Can withstand 7.1 Earthquake
 - Adobe is a traditional building material
- **Cost: \$11,000 for total 500 square feet**
 - For comparison, Katrina Cottages designed for impoverished Katrina victims are 400 square feet costs \$42,000 US



Roof View

References

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