

# Slum Housing in Dharavi, India

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## Problem

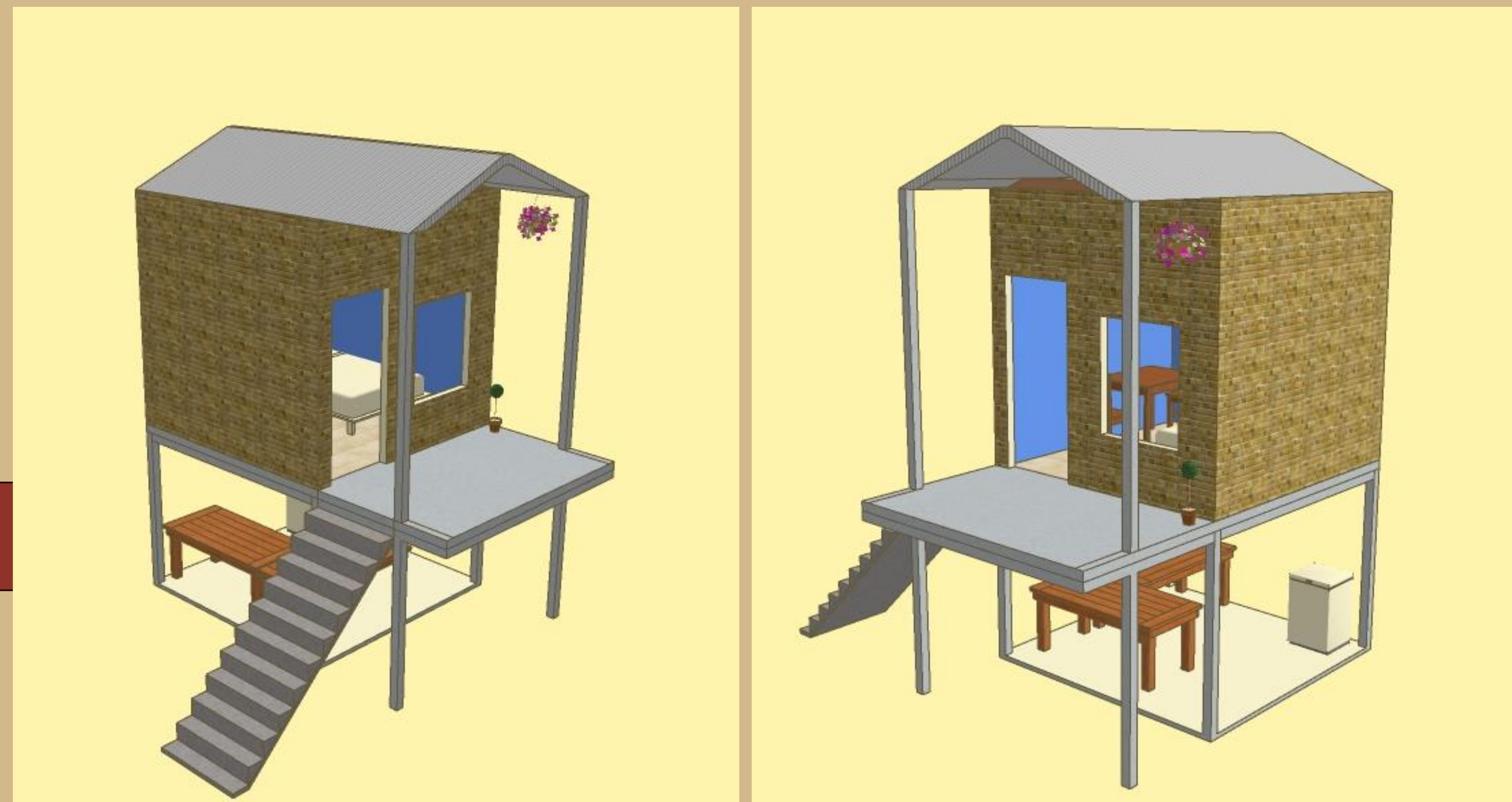
- ❖ Dharavi is densely populated, extremely urban
- ❖ Poor sanitation
- ❖ Poor infrastructure
- ❖ Limited accessibility to roads
- ❖ Copious amounts of waste
- ❖ Poor ventilation in homes
- ❖ Limited bathrooms

## Context

- ❖ Dharavi is extremely diverse with a strong sense of community
- ❖ Population of 1,000,000
- ❖ Hot, humid climate
- ❖ Large recycling business
- ❖ Individuals typically work and live out of the same space
- ❖ Commercial district for toxic work
- ❖ Humanitarian efforts have failed in the past due to lack of communal consideration
- ❖ Communal bathrooms are public
- ❖ Poor air quality



## Conceptual Design



## Sketchup Image



## Design Strategies

- ❖ **Re-blocking:** a process that involves spatial reconfiguration of shacks in informal settlements.
- ❖ One building dedicated to a communal bathroom per unit of seven homes
- ❖ **Biodigester** to generate energy from waste
- ❖ **Incremental housing:** allows individuals to make choices on their housing design
- ❖ **Plastic bricks:** made from waste materials and stronger than regular concrete
- ❖ **Awning** that extends from the roof and faces the center of the street
- ❖ Roof and front window for cross ventilation

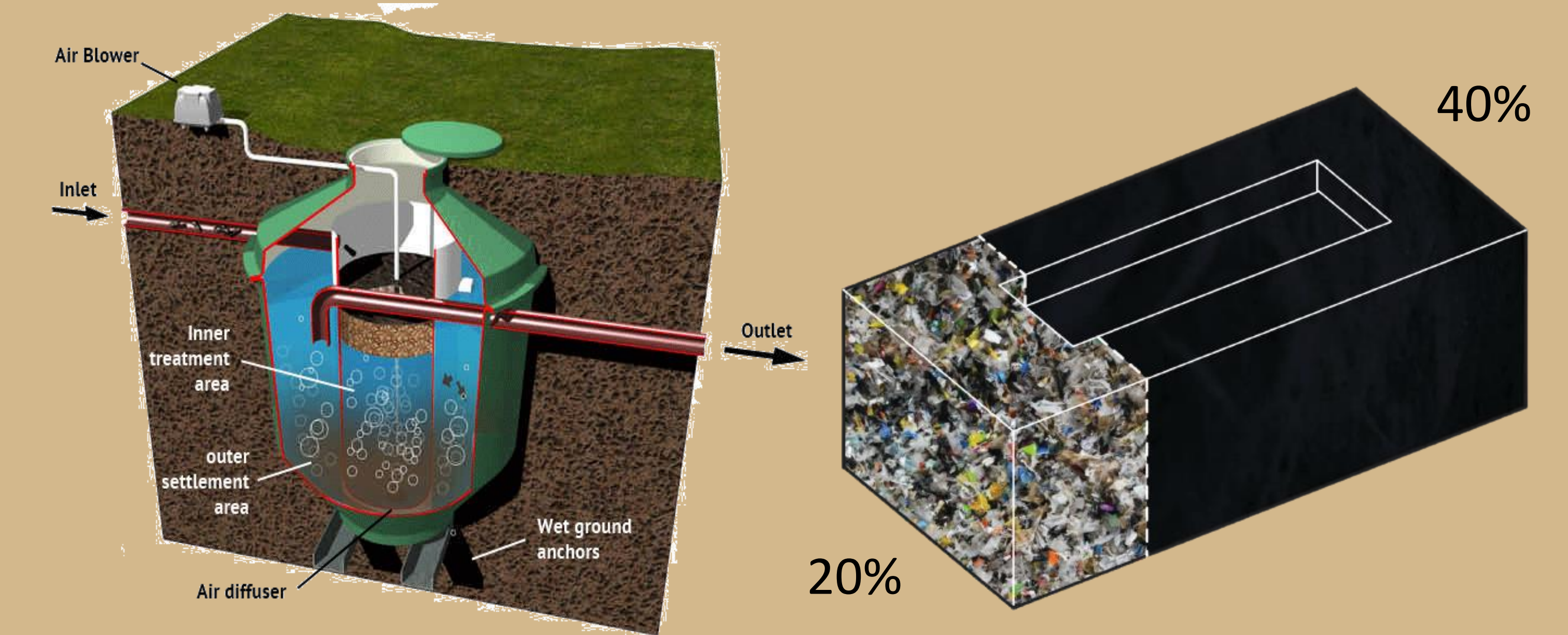


Diagram of biodigester and its inner mechanisms

Plastic bricks that the buildings will comprise of and their composition

## Materials

- ❖ Plastic Bricks – 0.40-0.90 per brick. Made of 20% plastic waste and 80% foundry waste (sand and dust)
- ❖ Biodigester – Around \$150 for each family unit
- ❖ Sheet metal for roofing – Recycled material
- ❖ Wheat shade mesh for awnings – Around \$200 per unit

**Sources:** Interra Global (2021, March 22). What is a biodigester? *Interra Global*. Retrieved October 13, 2021, from <https://www.interraglobal.com/what-is-a-biodigester/>

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