Materials & Technique

Promoting affordable, sustainable, and self-build in Rwanda

Earthbag Estates

A collaborative
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![Image of a house being constructed with materials and people working on it.](image)
Figure 01. Sifters made with wood frames and metal mesh separate large stones from the soil that will be used for filling the Earth Bags.

Figure 02. In the trench, make a mountain ridge of Soilcrete.

Figure 03. A plywood sheet with two holes and a thin opening will be used as a filling jig. A bag is inserted through the opening, and two cones are placed on top to funnel the soil into the Earth Bag.

Figure 04. Make a mountain ridge with Soilcrete in the middle channel.

Figure 05. Make another mountain ridge with Soilcrete in the middle channel, and continue to place the second layer of Earth Bags.
Figure 06. A layer of Damp Proof Membrane [DPM] and one layer of EarthBags packed with site soil in place.

Figure 07. Building lines, levels and corner guides were used to make sure the walls were straight and plumb.

Figure 08. To protect the polypropylene from the UV rays, it was very important to cover the walls with plaster as we built them up.

Figure 09. We were careful not to squeeze and bend window and door frames with EarthBags.

Figure 10. Wood sheet placeholders were placed for EarthBag lintels with concrete and rebars inside.

Figure 11. An EarthBag lintel with steel rebars was placed. Holes were cut into the EarthBags to connect the individual layers.

Figure 12. The window and door frames were covered with plaster to protect them from the UV rays.

Figure 13. The building site was secured with a fence to prevent unauthorized access.

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