Team Ironwood

Water tower design solution for remote villages in Ecuador

Team Members

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Project Sponsor

Reach Beyond, POC Eric Fogg

Background

Reach Beyond is a non-governmental organization that aids rural villages around the world to acquire clean drinking water. It also focuses on community development through community based projects and services. Reach Beyond's Ecuador branch is specifically concerned with building water towers in remote villages. The water towers are built from locally acquired wood, and are difficult to build.

Reach Beyond has asked this year's capstone team, Team Ironwood, to improve the constructability of the towers. This is a continuation of a project from last year. Last year's team, The Thirst Quenchers, minimized the cross sectional area of the tower's four main support beams. This saved about 2 months on construction time and greatly decreased the overall weight of the tower.

In order to achieve their goal, Team Ironwood has conducted interviews with the customer, Eric Fogg, to develop a list of customer requirements. Customer requirements include improved constructability, improved joint design, using less material, use of locally acquired wood for the main structure, and keeping cost at a

minimum. These customer requirements were then converted to engineering characteristics.

Objective

The goal of this project is to improve the constructability of the current water towers model from the Reach Beyond organization, to make it more safe, faster to built and cheaper. This will help the villagers from Ecuador to have running water in their communities.