

Abstract

Title: Creating life for high-density households in Kuwadzana by purifying water using sunlight

Conference Theme: Engineering and Technology

Team Name: Dynamic Duo 2

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The number of people affected by water-borne diseases in the high-density area of Kuwadzana in Zimbabwe has increased. This is due to financial constraints within the City Council which has greatly reduced their ability to provide tap water thus forcing residents to source their water from untested community boreholes and wells. The application of sunlight to the non-potable water and the evaporation process leaves behind pathogens and the resulting condensed water is made safe to drink. It is an environmentally friendly and affordable method through which water can be purified. Non-potable water collected from the boreholes and wells is placed into a heat retaining container through an inlet with a filter. Water then evaporates using sunlight and then condenses on a pyramid that rests on the top of the container which acts as an airtight roof for the model. The water then flows along the edges of the roof into gutters that direct the water into an outlet that is attached to a container which collects the potable water for use. By providing water that is free of pathogens, this system will help to reduce water-borne disease outbreaks.