Research Title: Study of rainwater quality in and efficiency of storage tank made of RCC ring.

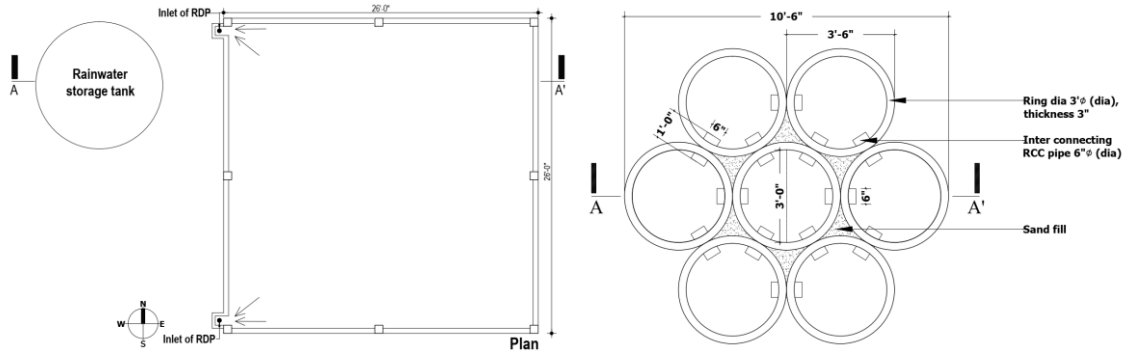
Abstract:

In this era, where global climate change is a pressing issue, freshwater is becoming progressively rare due to temperature, and sea levels rise due to global warming. Bangladesh has been trying hard to tackle the water demand and improve health and sanitation, but 20 million people are still deprived of safe drinking water. In salinity-prone coastal areas and arsenic hot spots, it has been estimated that 43000 Bangladeshi people die from water-borne diseases every year. (Kamal & Baur, 2018). This country's annual rainfall is high and could meet significant total water demand. Unfortunately, people in urban and rural areas are reluctant to utilize this abundant natural water source instead of groundwater extraction without considering sustainability. The overall context represents; that the time is not far when the people might face a permanent water crisis. Considering the current situation, we should start rethinking our practices towards water use and implementing alternative water resources. One of the best alternative water source options is installing a rainwater harvesting system. Therefore, this research aims to introduce a basic, reasonable, doable, and socially acceptable rainwater storage system. The second objective of this research is to investigate the quality of the stored rainwater to ensure the storage tank's efficiency.

Objectives:

The most challenging part of a rainwater harvesting system is the rainwater storage system. In this research we have demonstrated a cost-effective rainwater storage system at the Housing and Building Research Institute (HBRI) campus with local material, RCC ring that is affordable and available to the mass community. This research work will be done accomplishing these following three main objectives such as-

1. Introducing a cost-effective rainwater harvesting system as a potential alternative source of water.
2. Analyzing the harvested water quality from the established rainwater storage and assess its performance and scope.
3. Promoting the rainwater harvesting system by creating awareness among people.



(a) (b)

Fig 1: (a) Top view of the proposed study area. (b) Plan of the storage tank.

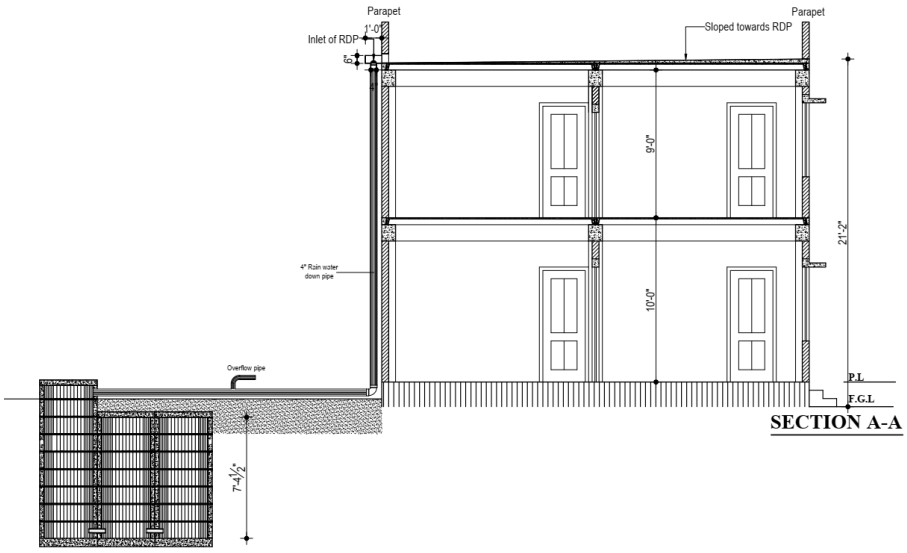


Fig 2: Section through the model house and the storage tank

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