

Rain Water Harvesting: A Review

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SUMMARY

Over the years of the rising population practices that increase demand of water supply have growing industries and the expansion of agricultural. Monsoon is still the main hope and the source of our agriculture. Therefore, the water saving became need time. Rainwater harvesting is a way to capture rain water at the time of the downpour, store the water above the ground or download the underground water and use later. As the groundwater resources are depleting, is the only way the rainwater harvesting to solve the water problem. Rainwater will be useful not only, the demand of water supply, but also help to improve the quantity and quality of water.

INTRODUCTION

We all take water for granted keep. It belongs to the natural resources, not much put most people in thought, but continues to enjoy that free delivery of water for many more years, and changes must be made. Rainwater harvesting is the process of collection of rainwater from land to the rain falling, filters and save it be used for multiple purposes. With water, rainwater harvesting provides the supply back to normal levels. It is the collection and storage of water from the surfaces that is like rain.

Advantages of Rain Water Harvesting

- Various advantages of rain water harvesting are outlined as under:
- Contributes to meet the increasing water demand.
- Recharges the ground water.
- Enhances the availability of ground water.
- It reduces the soil erosion.
- In saline or coastal areas, the rain water harvesting provides a means for storage of quality water.
- In desert area, where rainfall is very low, it provides a kind of relief.

Disadvantages of Rain Water Harvesting

- Since, after getting rainfall over the ground surfaces, the rainwater moves over the land surfaces, where pollutants are there. The pollutants mix in the rainwater. In this way, the stored/harvested water is full of pollutants, leading to health problems.
- Cause water quality deterioration by
 - 1.Increasing the level of nitrates and fluorides in the water.
 - 2.High concentration of calcium, lead and chromium in the water.
 - 3.Increasing the bacterial contamination levels in the water.

Rainwater Harvesting Method

It is easy to collect rain water from the building, roofs and numerous other sources. As long as you are ready and you have everything with a few different items, what it needs, harvest rain water and enjoy naturally delicious, clean and useful water. Rainwater harvesting systems can be purchased from various home improvement stores completely. The cost of these systems are different. Broadly there are two ways of harvesting rainwater.

- 1.Surface runoff harvesting
- 2.Roof top rainwater harvesting

This section describe methods of obtaining of rainwater

1.Surface Runoff Harvesting:

In urban area rainwater flows away as surface runoff. This runoff could be caught and used for recharging aquifers by adopting appropriate methods.



Fig1: Surface runoff harvesting

2.Roof Top Rainwater Harvesting:

It is the system collect rainwater, where it is harvest falls. In on the roof is the catchment area and collected rainwater, from roof/ building. It can either be stored in a tank or diverted to artificial recharge system. This method is less expensive and very effective and if implemented properly helps in augmenting the ground water level of the area.

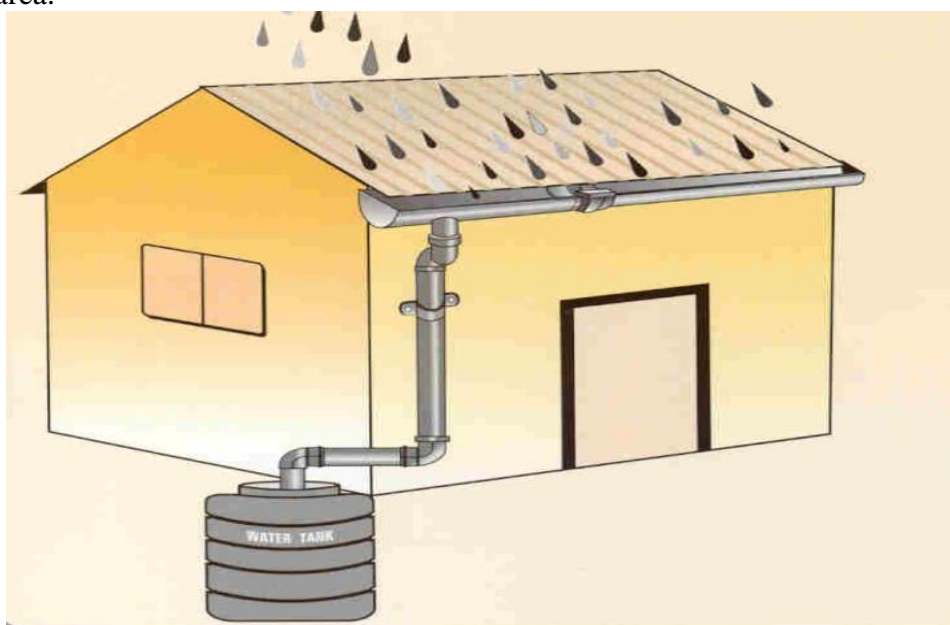


Fig2.Roof Top rainwater harvesting

The illustrative design of the basic components of roof top rainwater harvesting system is given in the typical schematic diagram shown in Fig 3. The system mainly constitutes of following sub components:

Components of Rainwater Harvesting system:

- Catchments: The catchment of a water harvesting system is the surface which directly receives the rainfall and provides water to the system.
- Coarse mesh at the roof to prevent the passage of debris.
- Gutters:
- Conduits.

- First-flushing.
- Filter.
- Storage facility.
- Modified injection well.

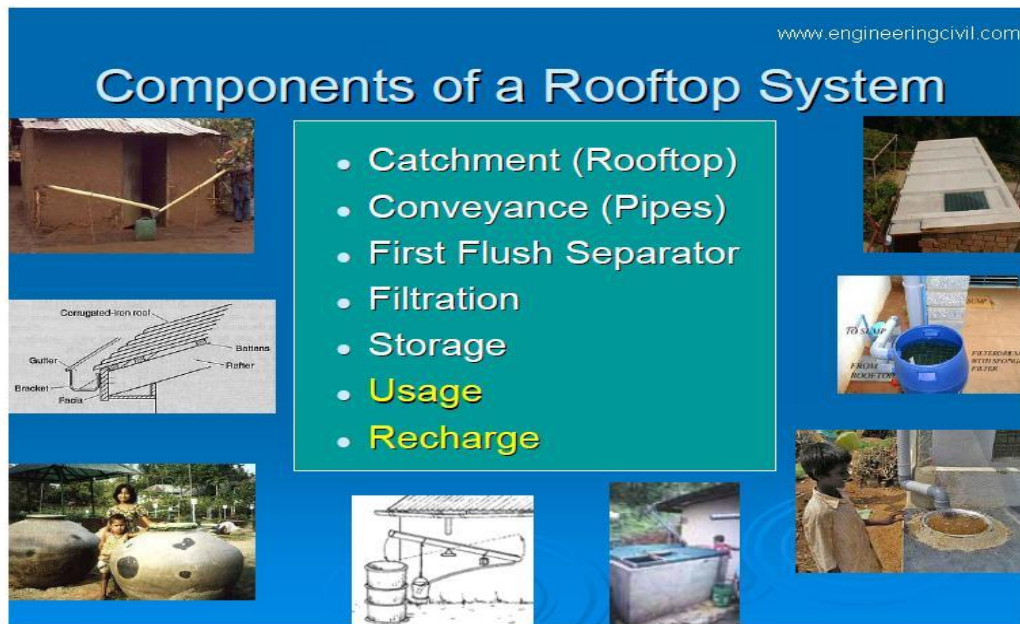


Fig3: Components of Rainwater Harvesting system

CONCLUSION

On the basis of the water requirement of the College, groundwater conditions of the area and rainwater, rainwater harvesting system for the gastronomy proposes to develop the demand for water. Not only the water level of the groundwater of the region will maintain but save our water resources and electricity consumption for future use.

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