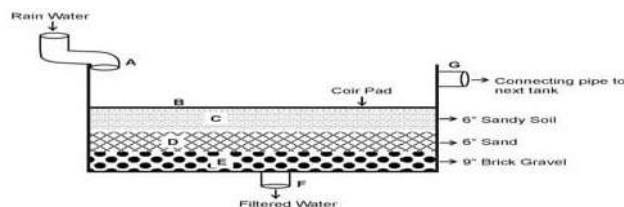


Rain Water Harvesting and Waste Water Treatment through Economically Sustainable Arrangements

*Concept by Morarka Foundation
A New Approach to Rain Water Harvesting*

Design of Rain Water Harvesting Systems

1. In a city like Jaipur, it receives an annual average rainfall of about 550 mm i.e. 0.55 meter per year. This water is received during an average of 30 rainy days. If rain water harvesting is carried out only during monsoon period, then a maximum of 80 percent can be considered as available for conservation.
2. At household level, the total pucca surface area varies from 500 sq. ft. to 5000 sq. ft. For institutions and large buildings it varies from 2500 sq. ft. to 25000 sq. ft. The surface area available for harvesting varies from as low as 40 percent to as high as 90 percent.
3. The rain water harvesting system design based on above two parameters; also include third parameter that is peak rainfall intensity. This means the maximum rain water received during one hour. In Jaipur, a maximum of 50 mm of rain water per hour can be considered for the design purpose.
4. Generally, flexible pipes can be attached at discharge points on the roof surface to transport water up to the filter.
5. A plastic bucket - crate or any metal or cement tank or readymade casings can be used for the filter. In these filters five easily available materials such as Brick Gravel, Wood Coal, Coarse Sand, Coir Pads and Fine Sand are used as filtering mediums. This kind of filter removes all physical and biological impurities from the rain water. The filter can be one single unit or any number of multiple units joined together through flexible pipes.
6. The outlets from the filters are joined together and once again through a flexible pipe, water can be transported to underground water cavity/reservoir for future use-conservation.
7. The standard design of a filter is as below:



8. The number of filters can be installed in a distributed manner as well as at one place in a series to meet peak water flow requirements.
9. The cost for such a system will depend on the total quantities of water that is harvested.

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