

This is the year to install RWH in all our houses. Our life itself may depend on it. In this material, you will learn all about Rain water harvesting, a few actual designs, bill of materials, list of a few key plumbers and builders. The time to do this is NOW and the place to do it is Chennai and Tamil nadu. This ad sponsored by many local NGO's and this newspaper.

Design 1. Roof water harvesting.

Step 1. Roof water collection.



Clean the roof first. Avoid keeping chemicals and other harmful materials. If there are nearby trees, clear the fallen leaves everyday particularly during the rainy season. The roof on top of the Rain Centre is 1,400 sq. feet and 1 inch of rain can collect 3,265 litres. (1 cubic foot is about 28 litres)

Step 2. Drainpipe brings the water down.



There are 3 drainpipes that bring the roof water down at the Rain Centre. These drainpipes are typically 3" diameter in size and capable of 6 Kg of water pressure. It costs about Rs 50 per foot installed (material + labour)

Step 3. First-flush

The first few litres of collected water when it starts raining may contain leaves and other contaminants. We try not to use this water. Once this section of the pipe is full, the excess overflows to the filter



Step 4. Filter

The filter chamber is filled upto 1/3 its volume with 2 layers of pebbles with coarse river sand in between. After this filter, the water flows to the sump. Each drainpipe may have its own filter chamber or a group of drainpipes may share a filter chamber. Cost about Rs 750

Step 5. Sump

Water from the filter chamber flows to the sump. Sump stores water for immediate consumption. In Chennai, sump construction costs in the range of Rs 3.5 to 4 per litre of water storage. With



an existing motor you can pump this water to the overhead tank. Given the rainfall pattern in Chennai, you cannot design a sump large enough to hold water for the entire year. Most of the houses/flats in Chennai will have sumps for collecting Municipal water.

Step 6 Well

The harvested water that overflows the sump is taken to the well, which percolates to the underground.

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Design 2. Surface water harvesting.

All the rainwater that falls around the house in open spaces can be harvested. Most house pavements are designed to flow the water away from the house. If your house surface area is covered with cement pavement, do not despair. We can collect all the water at the gate and recharge the underground.

Step 1. Collect.



At the Rain Centre, the surface water flows to the gate. There is 3.5 feet long, 1 feet deep gutter with a reinforced concrete slab with holes. Inside the gutter there are pebbles. The cost of this gutter costs about Rs 600 per foot. A small bump on the roadside just next to the gutter can make sure that no water flows to the street.

Step 2. Recharging well

Water from the gate gutter is taken to the recharge well. The recharge well is 3 feet in diameter, 10 feet in depth. The purpose of the



recharge well is to collect the vast amount of water collected quickly when it rains. The depth of the recharge well corresponds with the depth of the clay soil layer. There is no filter media inside the recharge well. If you already have a working well, try to direct the water from the gate to the well. The recharge well at the centre cost around Rs 400 per 1 foot of depth.

Step 3. Percolation pit

Percolation pit is used if enough space for a recharge well does not exist. The percolation pit is about 2' X 2' X 2'. There is a borewell with a PVC pipe of 6" diameter and 10 feet depth. In a large house, you can put a number of percolation pits all around house. The percolation pit at the centre cost Rs 1,500.

Credit:

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