

There are 3 main Design Concepts of RWH displayed at the Rain Centre.

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 feet 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.

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 foot 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.

Design 3. Loft tank using roof water harvesting.

A third design at the Rain Centre demonstrates how rain water could be used for immediate consumption. In this design, the harvested roof water is stored in a plastic loft tank and the water is piped into the house.



Step 1. Roof water harvesting using a drain pipe

This is similar to the set-up in Design 1. Rainwater harvested from the roof is collected using a drainpipe. These drainpipes are typically 3” diameter in size and capable of 6 Kg of water pressure. It costs about Rs 50 per feet installed (material + labour)



Step 2. 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. After the rain is over, we open the valve at the bottom of the first-flush and release the accumulated water in this pipe.

Step 3. Loft tank

The loft tank is located at the first floor level. Water collected in this tank is used directly in the house using existing plumbing. The loft tank is made of PVC with a capacity of 200 litres. This particular loft tank costs about Rs 800. Water used for drinking and cooking must be boiled. Water supplied to the bathroom and toilets are used directly. A side benefit of rainwater is that it is soft water and hence will use less soap for cleaning purposes.



Rain Centre is located at 4, Third Trust Link Road in Mandavallipakkam. It is located off Santhome High Road near the Registrar’s office. The telephone number at the centre is (044) 461-6134. The website is <http://www.raincentre.org>. Contact: Sekar Raghavan. The centre is open 11 AM to 7 PM on all days.