A Presentation on Rain Water Harvesting ..

VRIDHI FOUNDATION

Regd. No.: 423/2008

Rain Water Harvesting

- The term rain water harvesting refers to direct collection of precipitation falling on the roof or on to the ground without passing through the stage of surface runoff on land.

(or)

- Rain Water Harvesting is a way to capture the rain water when it rains, store that water above ground or charge the underground and use it later.

History

- The recorded evidence of water harvesting is found in Harappan and pre Harappan culture civilizations and dating back to 4000 to 6000 years from now.
- Mohenjodaro, the largest among cities belonging to Harappan culture, had over seven hundred open wells.
- Dholavira, an excavated port city in the Gulf of Kachchh.

Source : Water Harvesting and Sustainable Supply in India

Types of Rain Water Harvesting

- Roof Water Harvesting

- In situ Water Harvesting

Source : Water Harvesting and Sustainable Supply in India

- **Roof water harvesting** includes collection of the precipitation falling on to the roof or terrace of a building and storing it in a sump at ground level or directing the water to the ground directly after passing through filter media to recharge the ground water which is depleting day by day due to concretization.

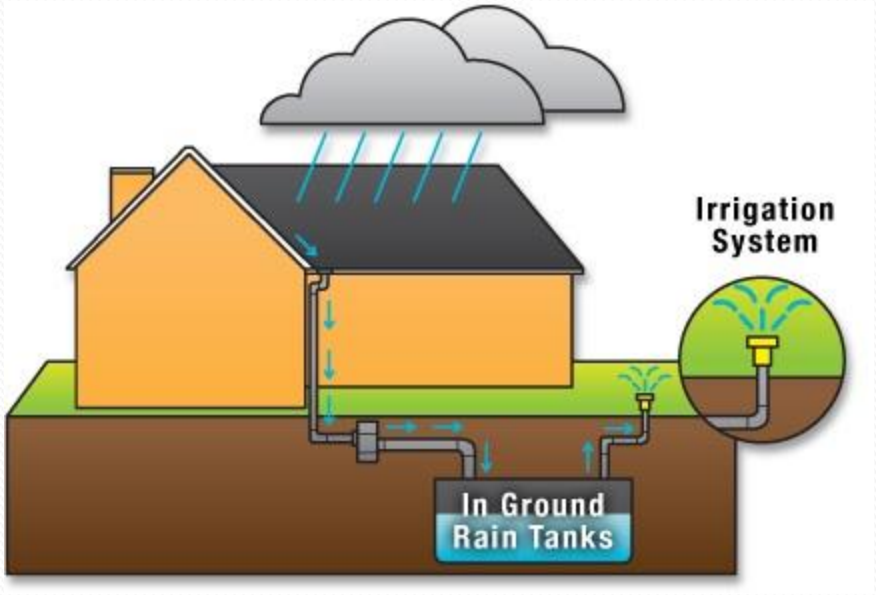
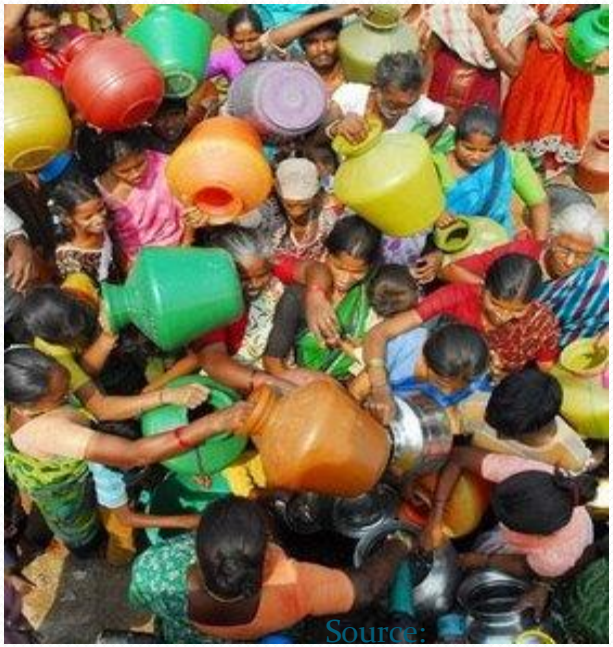


Image Source: http://www.ericwjones.com/rain_water_harvesting_chart.jpg

- **In situ water harvesting** is a special variety of rain water harvesting in which the rain incident on a plot of land is harvested there itself by storing it in a pit or trench. This method is useful in areas having heavy rainfall with quick runoff and no aquifers to recharge the rain water. In such a situation there is no need of the traditional approach of collecting from a donor catchment and storing in a recipient area.

Image Source: http://www.hindu.com/2005/07/26/stories/2005072617510300.htm



Source:

Reasons for Ground water depletion

- Increasing demand
- Withdrawing more than recharge
- Reduction of recharge area due to buildings, paved paths and roads
- Diminishing surface water bodies
- Uncertain rainfall

Advantages of RWH

- Provides self sufficiency to your water supply.
- Reduces the cost for pumping of ground water.
- To meet the ever increasing demand for water.
- To supplement domestic water requirement during summer, drought etc.
- Improves the quality of ground water through dilution when recharged to ground water.

Source: http://cgwb.gov.in/groundwater/roof_top.htm

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- To augment the ground water storage and control decline of water levels
- Reduces soil erosion in urban areas.
- In saline or coastal areas, rain water provides good quality water and when recharged to ground water, it reduces salinity and also helps in maintaining balance between the fresh-saline water interface
- In desert, where rain fall is low, rain water harvesting has been providing relief to people

Source: http://cgwb.gov.in/groundwater/roof_top.htm

Rain Water harvesting structure- Type I

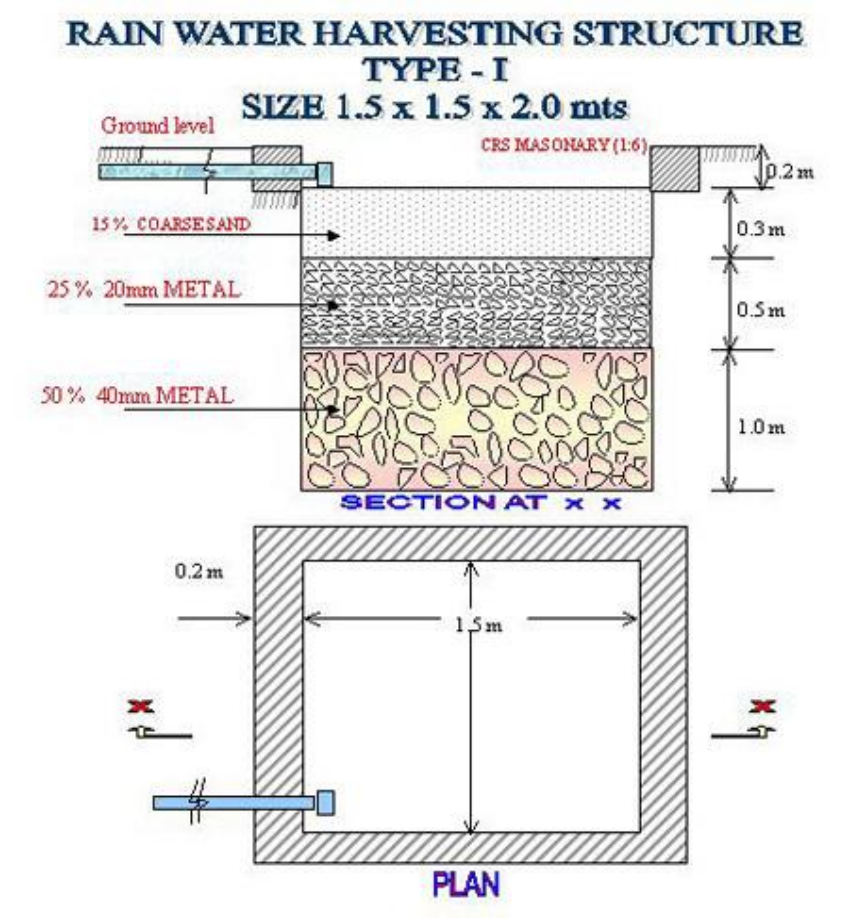


Image Source: http://www.hyderabadwater.gov.in/wworks/UI/neerumeeru.aspx#Top

Rain Water Harvesting Structure Type 2

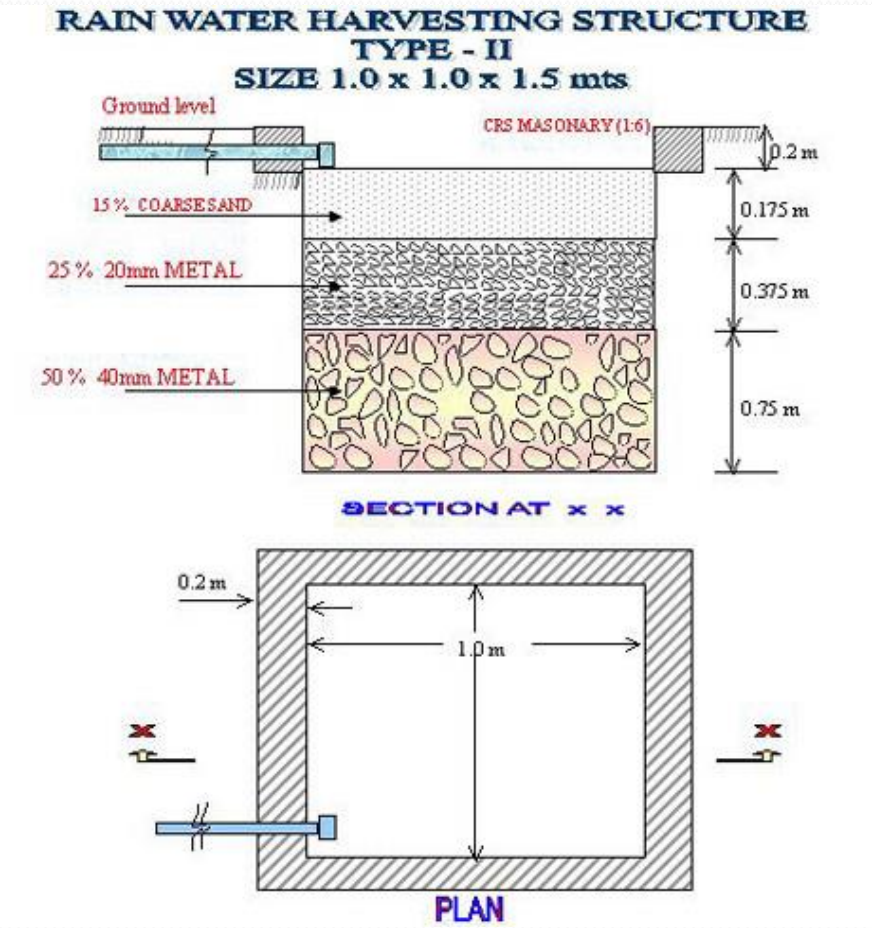


Image Source:: http://www.hyderabadwater.gov.in/wworks/UI/neerumeeru.aspx#Top

Rain Water Harvesting Structure around Bore well-Type 3

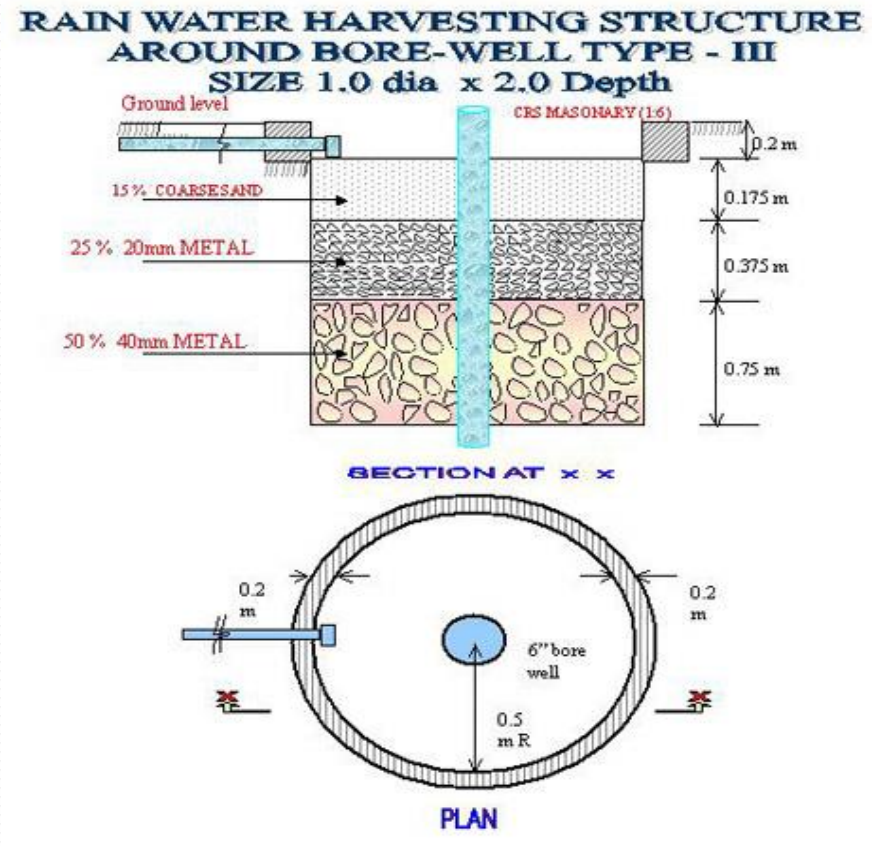
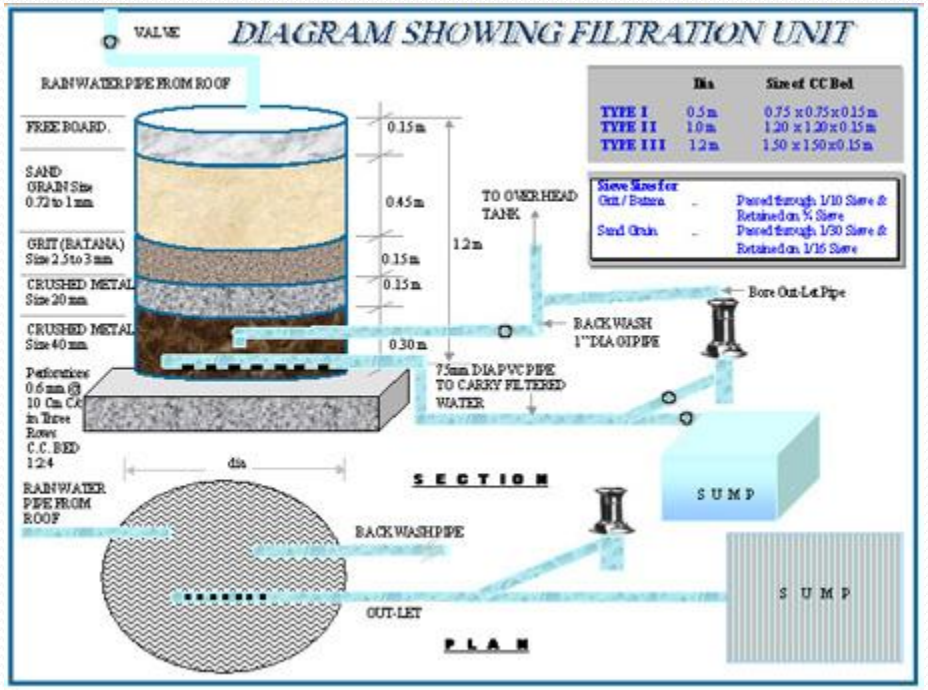


Image Source: http://www.hyderabadwater.gov.in/wworks/UI/neerumeeru.aspx#Top

Rain water harvesting at apartments

Image Source: http://www.hyderabadwater.gov.in/wworks/UI/neerumeeru.aspx#Top

Diagram Showing Filtration unit



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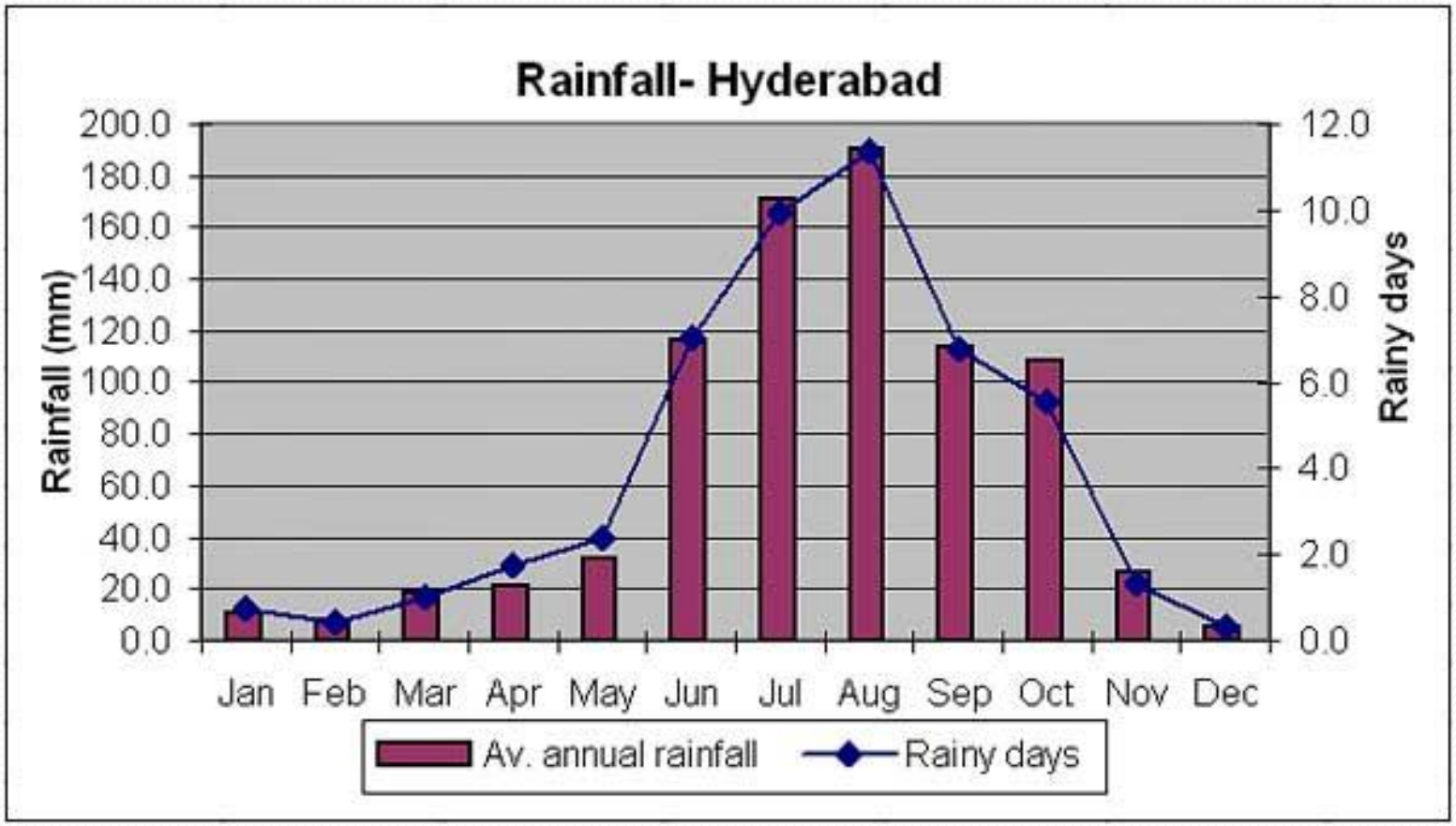

25 years average (1981- 2005)

Image Source: http://www.rainwaterharvesting.org/rainfall_htm/Hyderabad.htm

Do you know the potential of RWH in Hyderabad??

Considering the annual rainfall is 500mm:

Note: Rainfall yield in litres = Roof area in sq.m x rainfall

Terrace or roof top area in sqm	50	100	150	200	250	300	350	400	500
Rain water in litres	25000	50000	75000	100000	125000	150000	175000	200000	250000

Source: HMWSSB

State Government's Action

- APWALTA 2002, mentions that every new building which is more than 300 sq.m in area must have a rain water harvesting pit. The tentative date for enforcing this deadline was June 2001.
- Through an ordinance titled Tamil Nadu Municipal Laws ordinance, 2003, dated July 19, 2003, the government of Tamil Nadu has made rainwater harvesting mandatory for all the buildings, both public and private, in the state.

Source: http://www.rainwaterharvesting.org/policy/legislation.htm

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- The state roads and buildings department has made rainwater harvesting mandatory for all government building.
- Many other states have passed acts ,laws and ordinance towards having rain water harvesting pits at their premises.

Some of the many success stories..

- The Amritam Jalam campaign started by Rajasthan's biggest daily, *Rajasthan Patrika*, Rajasthan.
- Gendathur, a remote village in the backward taluk of Heggadadevanakote in Mysore district is on the verge of achieving a rare distinction. It will soon be recognised as the first village in the State to have the maximum number of rainwater harvesting systems installed in the village's households.
- IIT Madras Hostels.
- Asian Paints – Mumbai , Ashok Leyland - Chennai

Source: http://akash-ganga-rwh.com/RWH/WaterHarvesting.html

Rain Centres

- **Rain centres** are a network of permanent exhibitions that seek to spread water literacy among urban Indians. They portray the significance of rain in the Indian way of life--its influence on the customs, traditions, economy and politics of this country.
- There are very few Rain centres in India, they are in
- Chennai(TN)
- Meerut(UP),
- Sayla(Gujarat),
- Burdwan(West Bengal) and
- Trichur(Kerala)

Source: http://www.rainwaterharvesting.org/raincentre.htm

List of NGO's….

- Centre for Science and Environment (CSE), Delhi
- Tarun Bharat Sangh (TBS)in Alwar Rajasthan - Rajender Singh
- DHAN Foundation - Madurai Tamil Nadu – Vasimalai
- BAIF - Pune Maharashtra - Narayan Hegde
- RS - Ralegaon Siddhi - Ahmednagar district - Maharashtra - Anna Hazare
- SMSF - S.M.Sehgal Foundation- Gurgaon Haryana - Dr Suri Sehgal

Source: http://www.cseindia.org/

Contd.

- MF - Morarka Foundation - Jaipur Rajasthan - Mukesh Gupta
- DA - Development alternatives - Delhi - Dr Ashok Khosla
- KRG Rainwater Harvesting Foundation
- Akash Ganga Trust – Chennai
- Vridhi Foundation(Water Hyderabad), Secunderabad
- SAVE, Hyderabad
- Centre for Resource Education

- Join us at:

Water Hyderabad
(A cell on Water conservation and awareness)
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THANK YOU.