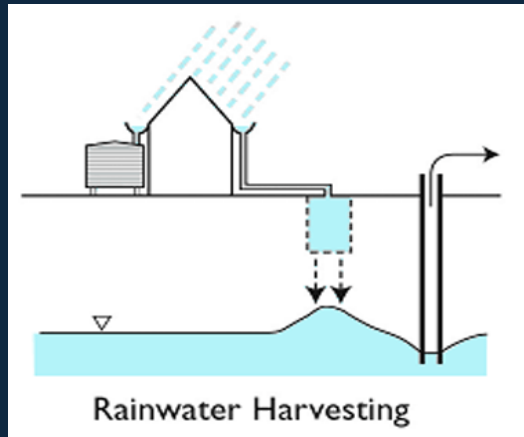




Design of Rain Water Harvesting System for Ramco Roofing Lanka (Pvt) Ltd.m Mathugama

Lanka Rain Water Harvesting
Forum

July 2025

Design of Rain Water Harvesting System for Sri Ramco Roofings Lanka (Pvt) Ltd, Mathugama

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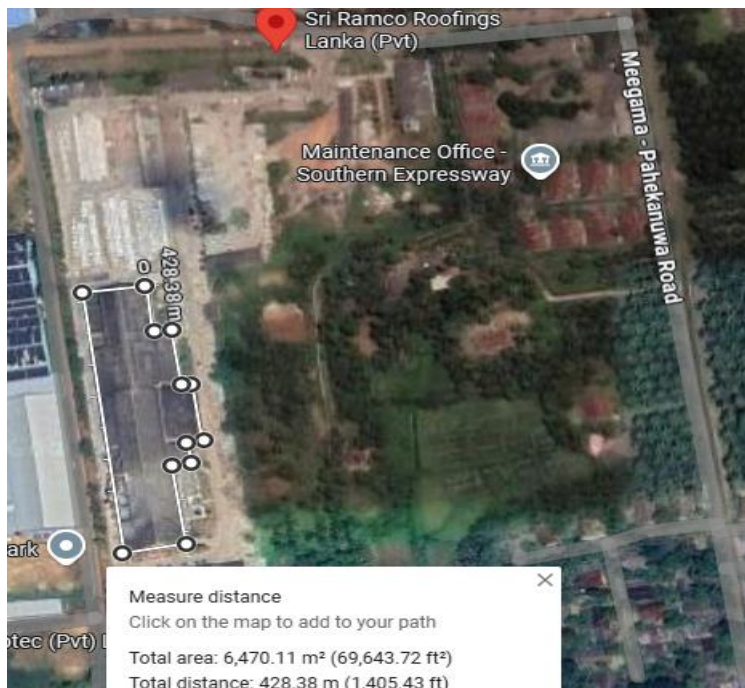
Location: Sri Ramco Roofings Lanka (Pvt) Ltd, Mathugama Industrial Estate, Pallegodawatta, 5th Mile Post, Meegama, Dharga Town, Sri Lanka.

Date of Visit : 28th July 2025

Available roof area:

There is one large potential roofs within the premises that can be used to collect rainwater.

1. Factory Roof Total Roof Area = 6470 m^2
2. Factory Roof Back Area roof area = 2267 m^2



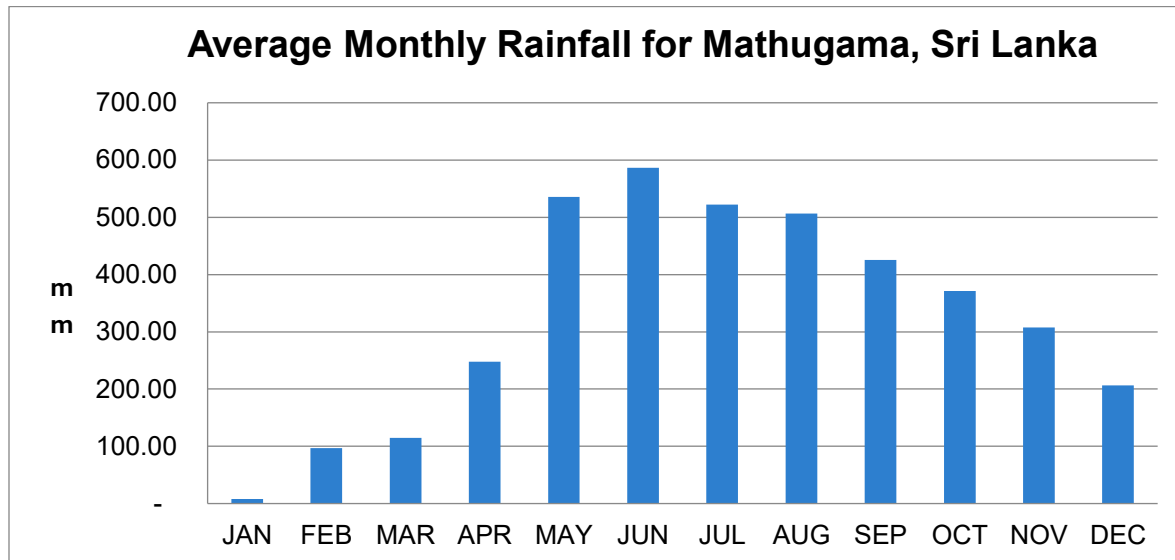
Water Demand per day Average = 100 m^3

Water demand per Month Average = 3000 m^3 .

Roof type: Asbestos roofing sheets

The objective is to utilize the rainwater collected for production purposes as well as to reduce flooding in the surrounding area.

Average Monthly Rainfall



Source: <https://en.climate-data.org/asia/sri-lanka/western-province/matugama-764255/>

Potential Monthly Roof Run off from the Different Buildings

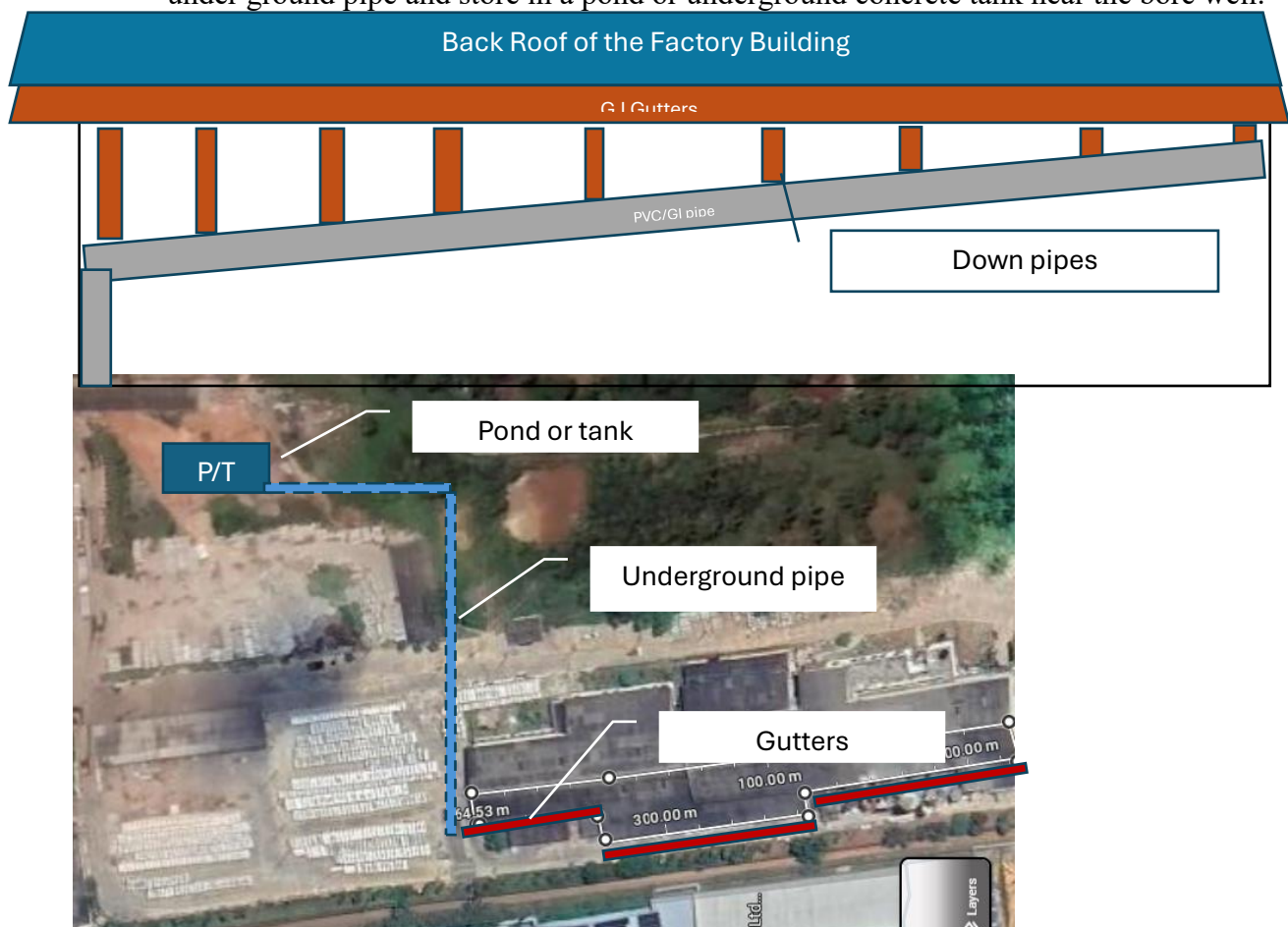
Months	Monthly Rainfall (mm)	Monthly potential rain runoff (m ³) from Total Roof Factory	Monthly potential rain runoff (m ³) from Back Roof of Factory	Total potential from total Roof area (m ³)	Monthly Demand m ³
JAN	7.70	40	14	40	3,000
FEB	96.62	500	175	500	3,000
MAR	114.82	594	208	594	3,000
APR	247.78	1,283	449	1,283	3,000
MAY	535.72	2,773	972	2,773	3,000
JUN	586.55	3,036	1,064	3,036	3,000
JUL	522.08	2,702	947	2,702	3,000
AUG	506.59	2,622	919	2,622	3,000
SEP	425.51	2,202	772	2,202	3,000
OCT	371.46	1,923	674	1,923	3,000
NOV	307.73	1,593	558	1,593	3,000
DEC	206.14	1,067	374	1,067	3,000
Total	3,929	20,335	7,125	20,335	36,000
Monthly Average m ³		1,695	594		

Observation

1. Rainwater runoff from total roof area will meet the water demand of daily 100,000 liters (monthly 300m^3) for only 4 month of the year.
2. Run off collected form the back end of the factory building will provide on average 594m^3 per month.
3. There no gutters on either side of the building, recommended gutters are G.I , large width. Total length of gutters needed for the back roof areas is around 545 ft.
4. It is advisable to separate roof rainwater from the run off rainwater from the concreted ground area as it will carry dust and particles/fiber
5. Rainwater collection for the premises can be conducted in several phases. Suggested steps are below.

Recommendation

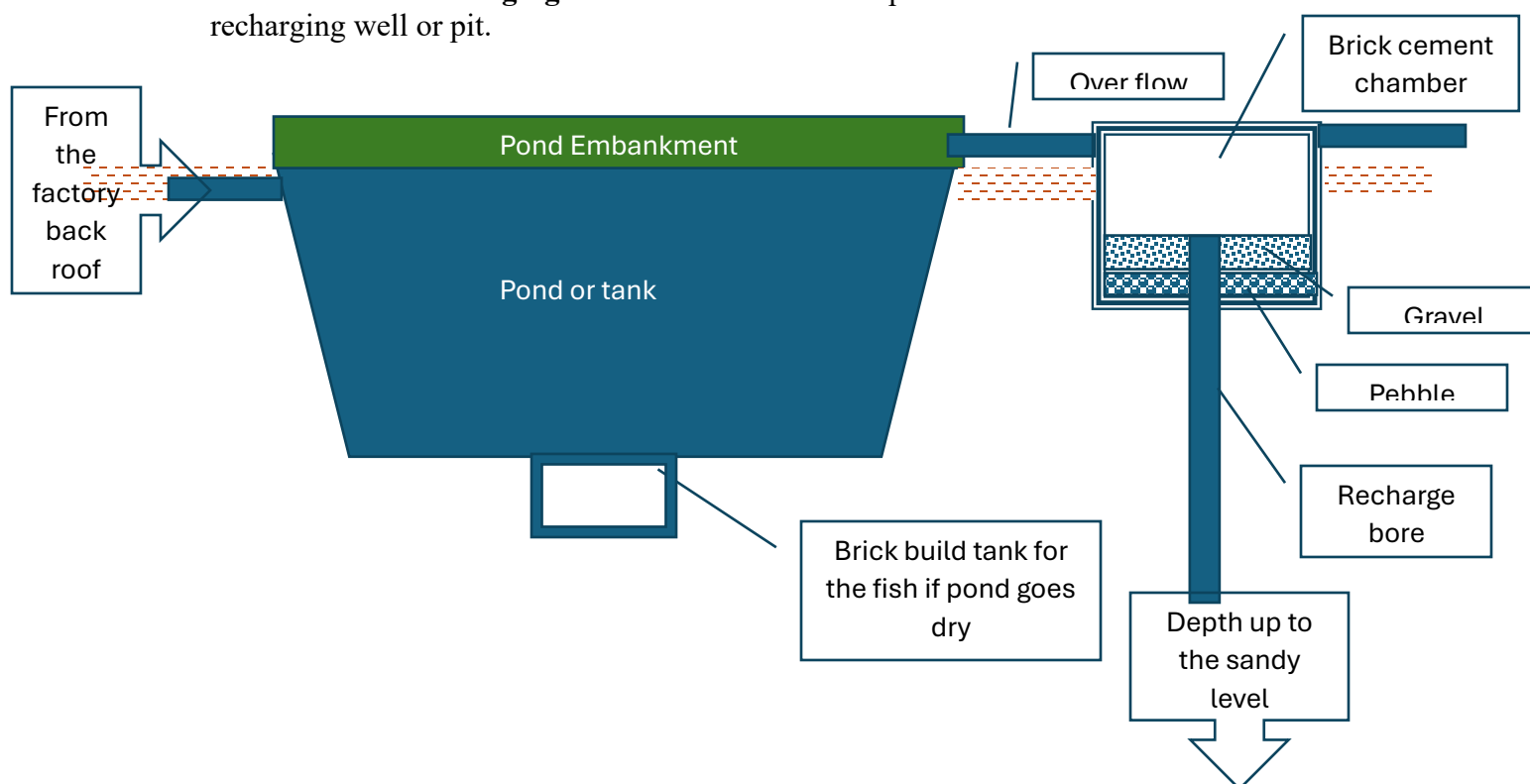
1. **Roof Water Harvesting:** Install gutters on back roof side of the factory building. Connect the gutters at a higher elevation by a sloped 8" PVC or GI pipe, so as to allow quick flow of water. Bring the water to the ground level and to the front side through under ground pipe and store in a pond or underground concrete tank near the bore well.



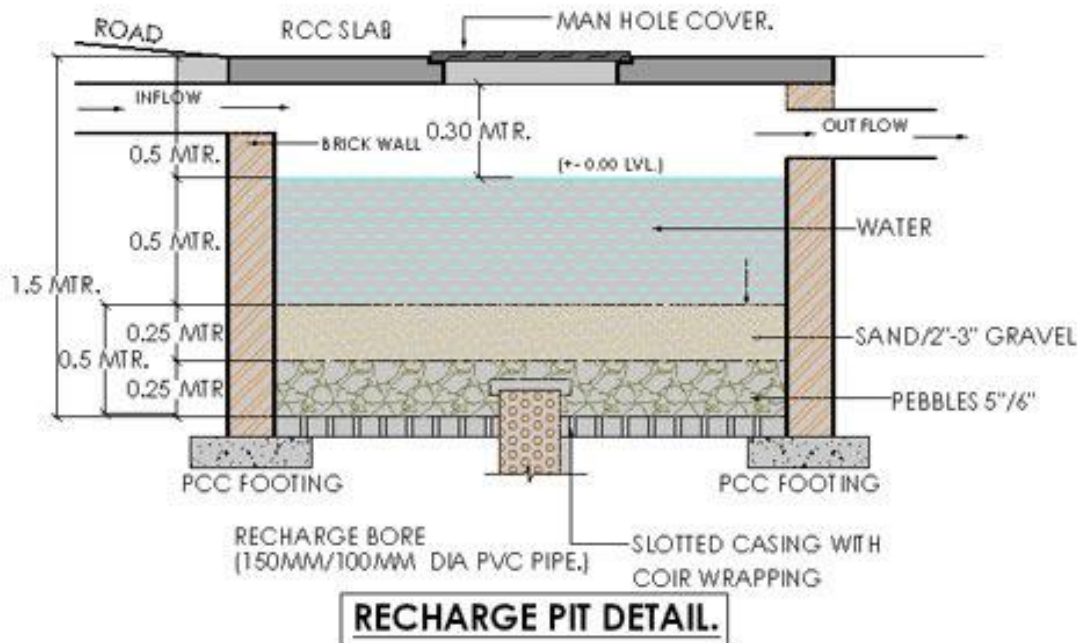


Dimension of the pond or tank : 10m wide, 12 m length, 5 m depth will give a 600 m³ volume. If it is open air pond it is recommended to grow shade trees around the pond around 10 ft away from pond walls and also have fish in the pond to prevent mosquito breeding.

3. **Groundwater Recharging** : The over flow from the pond or tank can be sent to a recharging well or pit.



Detail design of the Recharge pit



4. **Front Roof of the factory building:** At present rainwater from the front roof areas of the factory building drains in to a pond through open drainage system. This carries lot of dust and particles/fibers. It is better have a closed drainage system have a lined (cement/

brick) sedimentation tank before the water flow into the pond. This will prevent sedimentation in the pond and reduce maintenance work and pollution of the water table.

Suppliers of Gutters

1. Vineth Engineering (Pvt) Ltd - Colombo 14, No 68 Jethawana Rd Colombo 14, jethawanaso@sltnet.lk
2. Amano Lanka Engineering (Pvt) Ltd, <https://amano.lk/product/gutters/>

Installers of recharging well

W S S C Construction (Pvt) Ltd, No 275/1, Korathota, Kaduwela, Sri Lanka+94-77-7716289/
+94-71-8673023, Info@watersolutions.lk, <https://watersolutions.lk/>