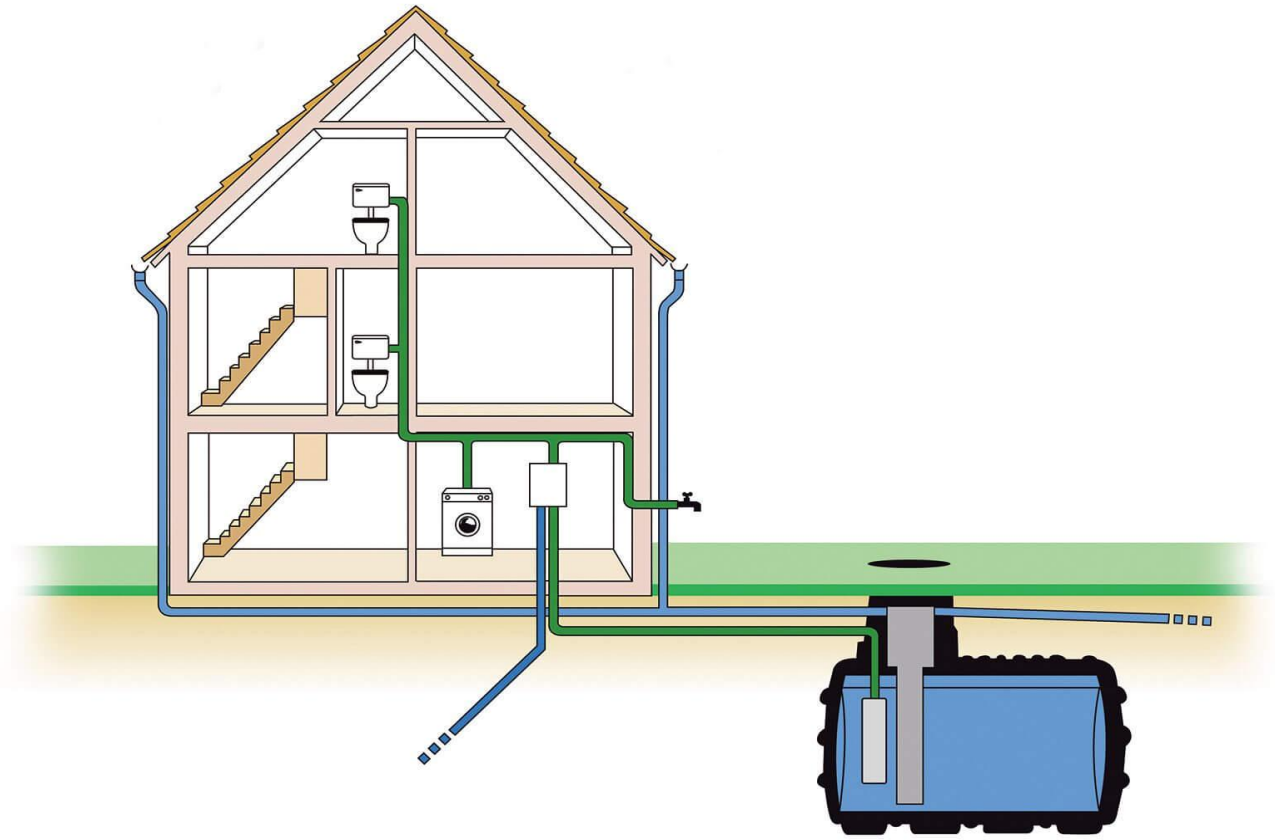


ROOF TOP RAINWATER HARVESTING

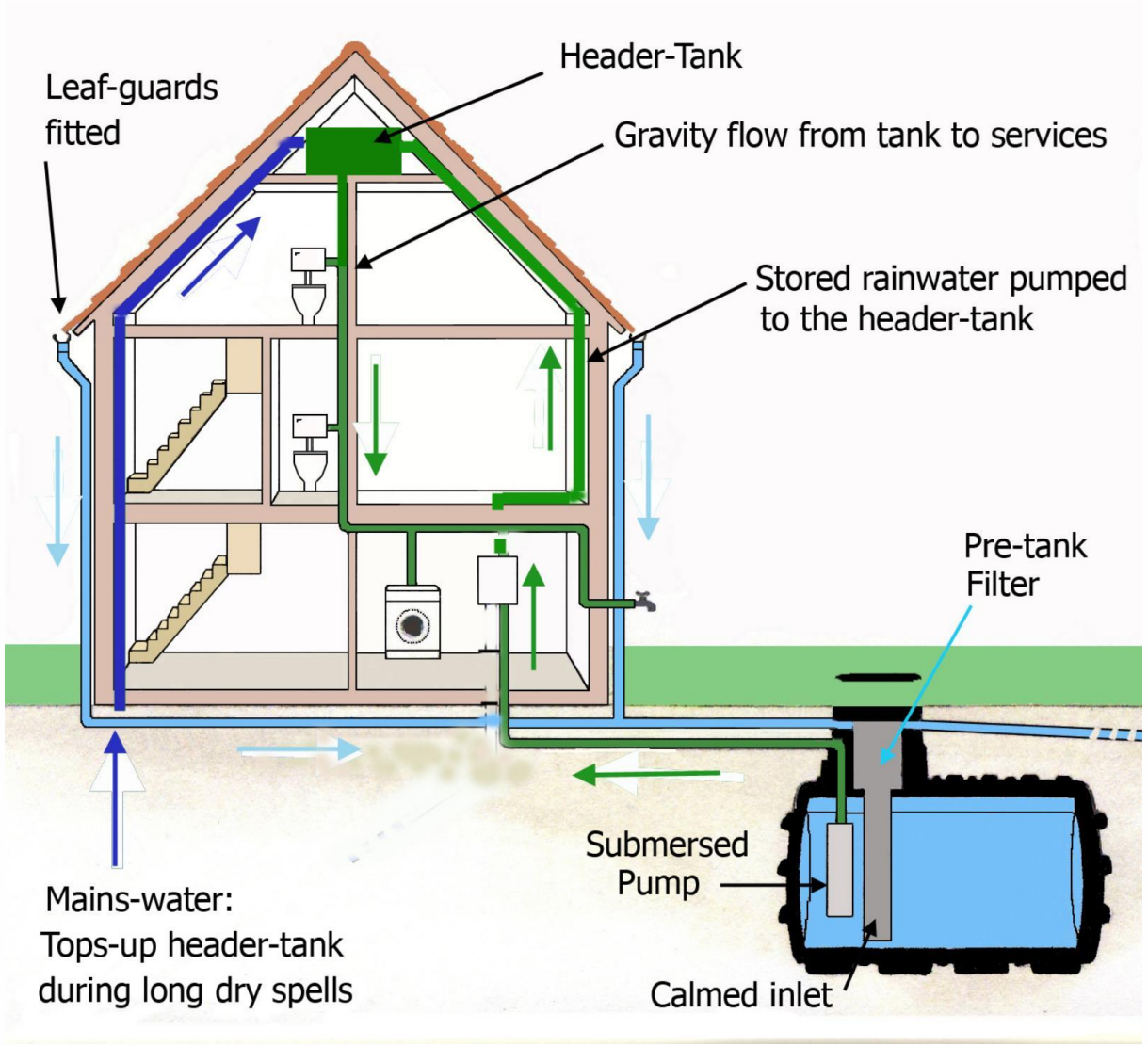
LOCATION: 46 BANYAN TREE PLOT NO. 344, 46 BANYAN TREE, GHATOL'S FARM ROAD, CHANDKHED, PUNE

MISSION GROUNDWATER
भूजल अभियान
ACWADAM

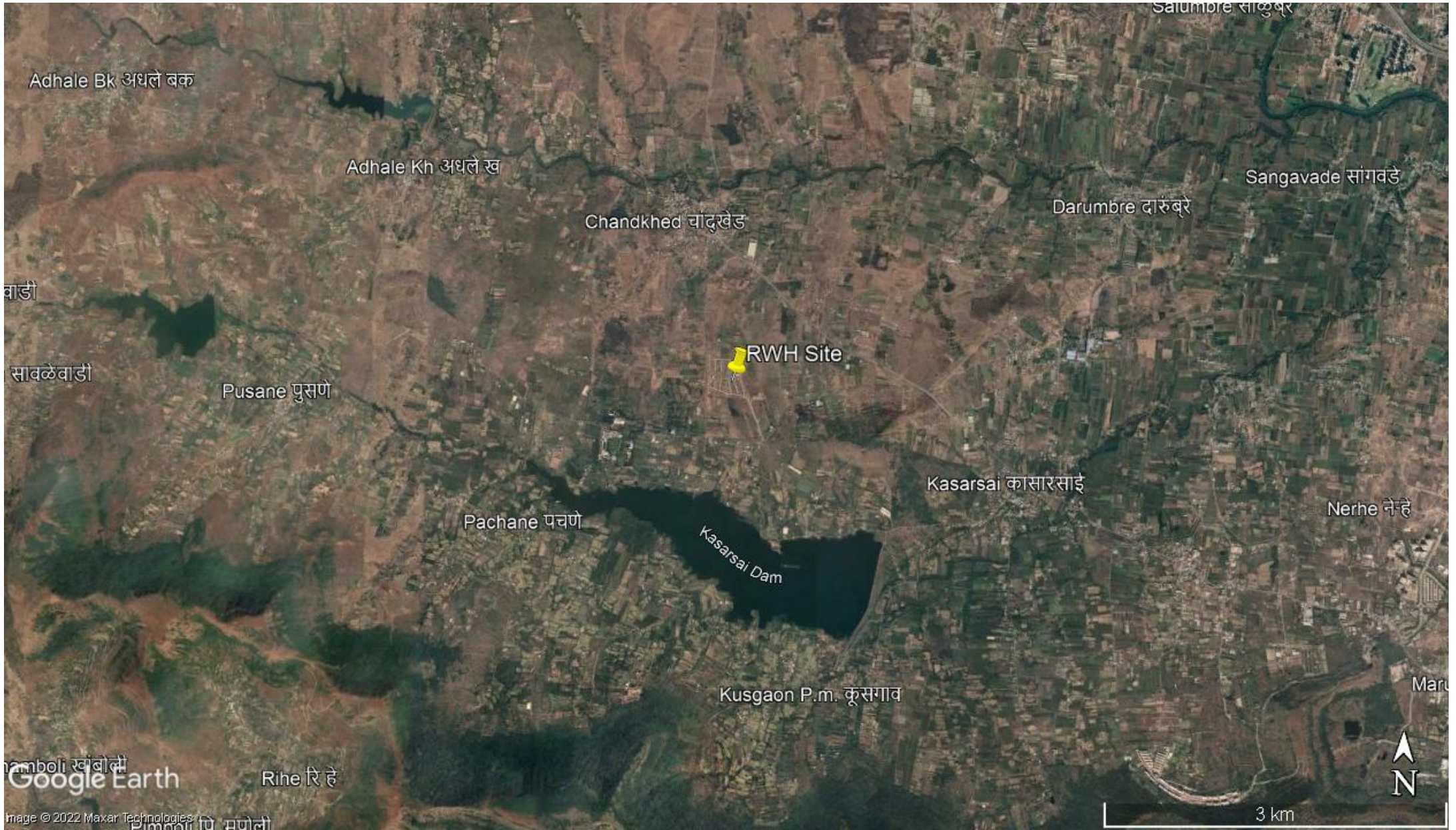
As part of Bhujal Abhiyan and ACWADAM's partnership regarding building Groundwater Literacy through public participation in Pune city.

CONCEPT AND OBJECTIVES OF A SURVEY

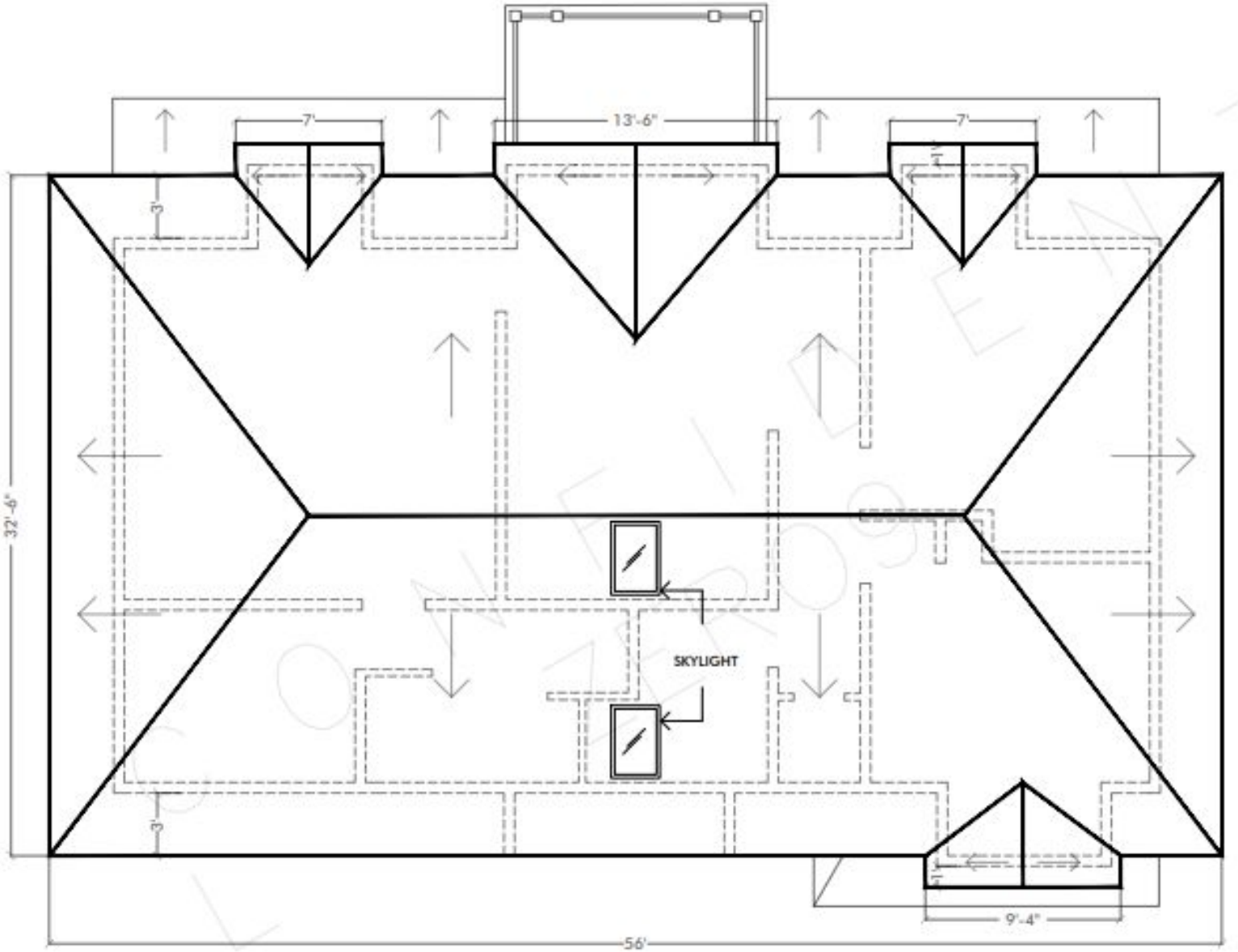
- Rainwater harvesting (RWH) means tapping the rainwater where it falls and is a most effective method for conservation of water in city areas.
- The objective of the study is to find out the technical feasibility for harvesting roof top water onto the ground in surface structure.
- The aim of the study is to decide the location-specific RWH structure dimensions, surface runoff route plan and overall maintenance aspects by which the rainwater from roof top can be diverted using appropriate filter media into a specially designed collection chamber.



Google map showing RWH location



Roof Top Design



Technical Feasibility - Terrace Section

Rainfall Details of Pune City (https://en.wikipedia.org/wiki/Pune)	
Normal annual Rainfall of Pune City	803 mm
Average Annual Rainy days	48.7
Monsoonal Avg. rainfall (June to Sept)	722 mm
Monsoonal Avg. Rainy days	39.7
Annual rainfall for 2019	1000 mm
No. of rainy days	74
A rainy day is 2.4 mm/day rainfall	

Estimation of Rainwater available from Roof Top for artificial recharge through borewell – Using good year data of 2019 & 2020	
Average annual rainfall	1000 mm
Variation from average rainfall	20 to 22%
Total number of rainy days	74 days
Rooftop area	170 sq mts
Runoff coefficient	0.8
Total volume of water generated	136 cum (i.e. 1.36 lakh liters)
Per day avg. volume of water generated	1.8 cum/day (~2000 liters in a day)
Per hour volume of water generated	55 liters/hour

NOTE: Pavement area, Garden area & landscaping area, open area has not been considered as it is not feasible to divert this storm water for recharging through bore well.

Recommendations

- Average expected rainwater generation from the terrace to a collection pit of 5m (L) x 5m (B) x 5m (D) is suitable to harvest rainwater.
- Excess roof top water available can be stored in the artificially constructed pond in the open space of lawn if available and if feasible, otherwise it can be routed to the storm water drain.
- Around 1,25, 000 liters of rainwater can be stored in the collection pit.
- This tank can be constructed underground using ferrocement technology with dimensions 5m x5m x 5m.
- The dimension of the storage tank is subject to the availability of space, funds and authorities' decision.
- Mesh to be put at terrace pipe to arrest initial leaves and other garbage.
- The roof water from the first rainfall spell should be let out on the lawn and should never be used for harvesting.
- The filter bed should necessarily be cleaned after every monsoon.
- Putting gunny bag below inlet pipe to capture un-arrested leaves and other waste.

Thank You.