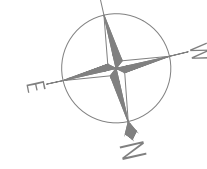


NORTH

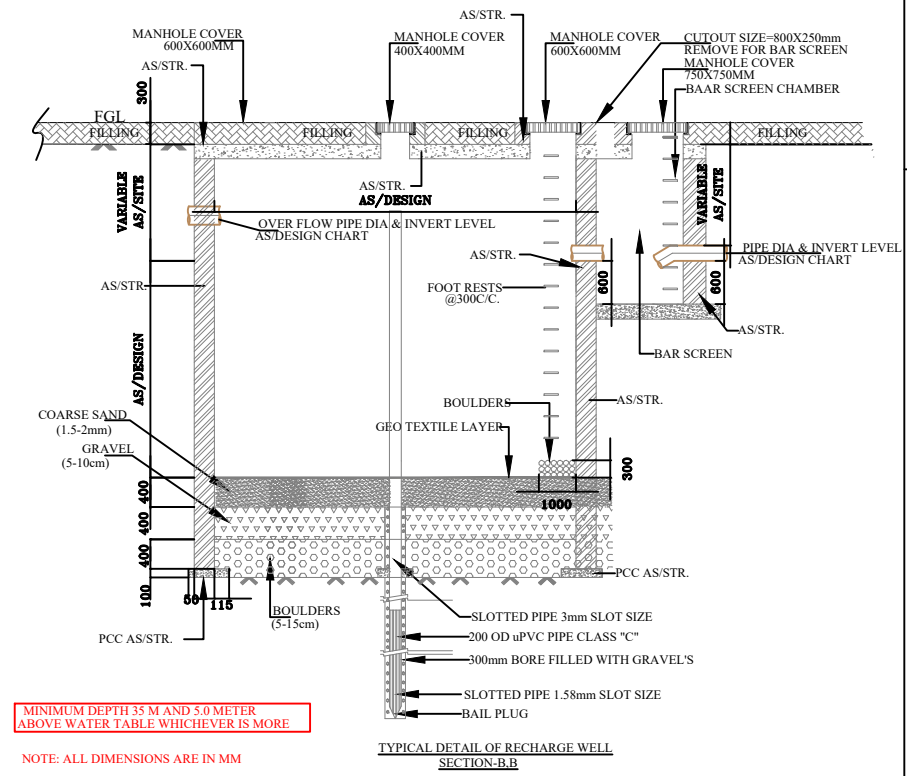
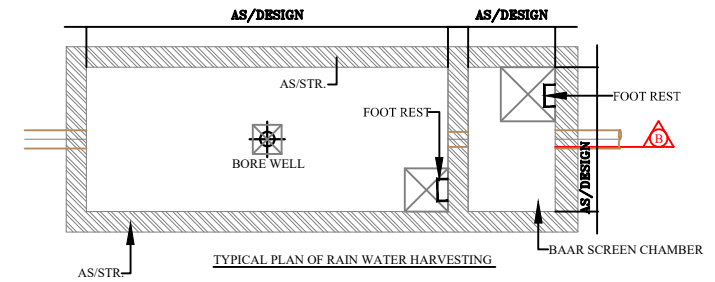


NOTES:-

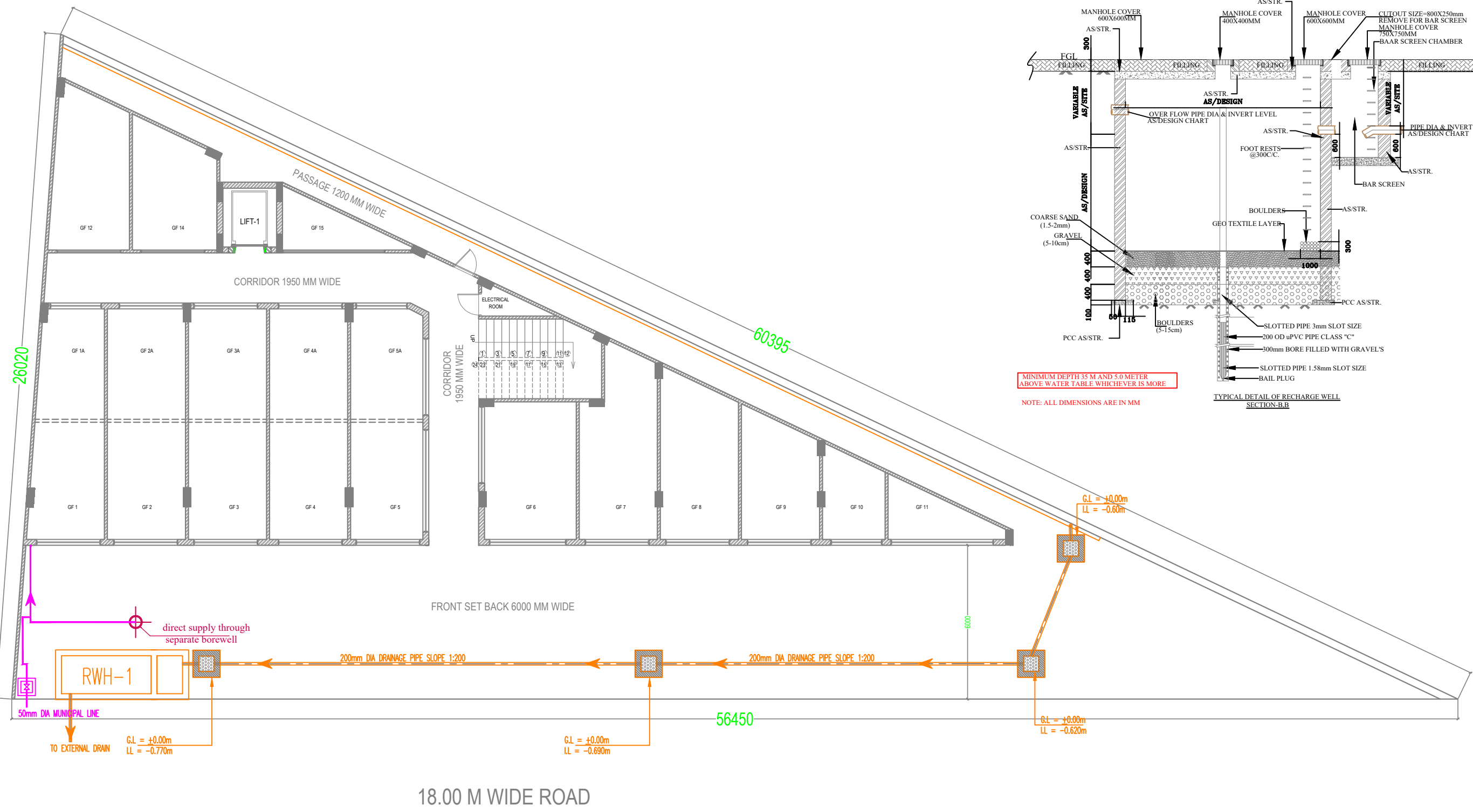
1. THIS IS A CONCEPTUAL DRAWING NOT FOR CONSTRUCTION
2. ALL DIMENSIONS ARE IN MM
- ONLY NOTED DIMENSION SHALL BE FOLLOWED.

LEGENDS FOR DRAINAGE SYSTEM:-

	DRAINAGE LINE
	DRAINAGE MANHOLE
	RAIN WATER HARVESTING PIT



MINIMUM DEPTH 35 M AND 5.0 METER ABOVE WATER TABLE WHICHEVER IS MORE
NOTE: ALL DIMENSIONS ARE IN MM



REV	DESCRIPTION	DATE	DN	CHK	APP

PROJECT :-
PROPOSED COMMERCIAL AT GHAZIABAD

LOCATION :-
CS- 6/2, SWARNJAYANTIPURAM,
GOVINDPURAM, GHAZIABAD, U.P.

CLIENT :-
ASTRUS SQUARE- ADVENT ASSOCIATES

ARCHITECT :-
DIVYAKASH ATELIER INC
ARCHITECTURAL . INTERIOR . PLANNING CONSULTANTS
A VENTURE OF DIVYAKASH GROUP
407, ORBIT PLAZA, CROSSING REPUBLIK, GHAZIABAD
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MEP CONSULTANT :-
WeDESIGN ASSOCIATES.
C-68, LOWER GROUND FLOOR,
SEC-63, NOIDA, U.P.
E-MAIL: wedesignassociates@gmail.com

SHEET TITLE :-
WATER SUPPLY & DRAINAGE LAYOUT PLAN

NAME	DATE	SIGN
DRAWN BY		
CHECKED BY	AD	15.01.2024
APPROVED BY		
PROJECT No.		SHEET SIZE
ISSUE DATE		N.T.S.
SHEET No.		REV. No.

PROJECT

**PROPOSED COMMERCIAL
AT CS-6/2, SWARNJAYANTI PURAM, GHAZIABAD**

SUBJECT

MEP SERVICES

PROJECT REPORT

MEP CONSULTANTS:



WeDESIGN ASSOCIATES.
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NOIDA, U.P.
E-MAIL: wedesignassociates@gmail.com

ARCHITECTS:

DIVYAKASH GROUP
407, 4TH FLOOR ORBIT PLAZA CROSSING
REPUBLIK GHAZIABAD-201001
E-MAIL- group.divyakash@gmail.com

INTRODUCTION

The proposed project is a commercial building, located in Ghaziabad, U.P. The building consists of Commercial shops and parking with all modern amenities to be developed on land of approx. 732 Square Meters.

This report intends to basically highlight the technical proposals/points/ parameters, which are proposed to be adopted in the planning and designing of internal & external sanitary engineering for the upcoming master plan.

WATER REQUIREMENT

During construction phase water will be supplied by private water tankers, whereas during operation phase water supply will be provided through the Municipal water supply/tube wells. Total water requirement is approx. 5 KLD, out of which Domestic water requirement is 2 KLD. Flushing water requirement is approx. 3 KLD. Daily water requirement calculation is given below in Table 1,2&3:

Table 1: Calculations for Daily Fresh Water Demand

DOMESTIC WATER REQUIREMENT						
S. No.	Description	Occupancy	Units/Area	Total Population	Total water Req.	
					L/Head	LPD
COMMERCIAL COMPLEX						
1	Commercial Area					
	Ground floor	364 sqm	3 sqm/person	122		
	First floor	364 sqm	6 sqm/person	61		
	Second floor	364 sqm	6 sqm/person	61		
	Visitors	90% of total population of commercial area	-	220	5	1100
	Staff	10% of total population of commercial area	-	25	25	625
Total Water Requirement						1725
SAY						2KL

Table 2: Calculations for Daily Flushing Water Demand

FLUSHING WATER REQUIREMENT						
S. No.	Description	Occupancy	Units/Area	Total Population	Total water Req.	
					L/Head	LPD
COMMERCIAL COMPLEX						
2	Commercial Area					
	Ground floor	364 sqm	3 sqm/person	122		
	First floor	364 sqm	6 sqm/person	61		
	Second floor	364 sqm	6 sqm/person	61		
	Visitors	90% of total population of commercial area	-	220	10	2200
	Staff	10% of total population of commercial area	-	25	20	500
Total Water Requirement						2700
SAY						3KL

Table-3 : Water Calculations

Total Water Requirement	
• Domestic Water Requirement	2 KLD
• Flushing Water Requirement	3 KLD
*As the plot area is less than 2000 sq mtr so STP is not required.	
TOTAL	5 KLD

Table-4 : FLOW TO EXTERNAL SEWERAGE SYSTEM

Waste Water Generated	
• 80% of Domestic Water	1.4 KLD
• 100% of Flushing Water	2.6 KLD
Total	
FLOW TO EXTERNAL SEWERAGE	4.0 KLD

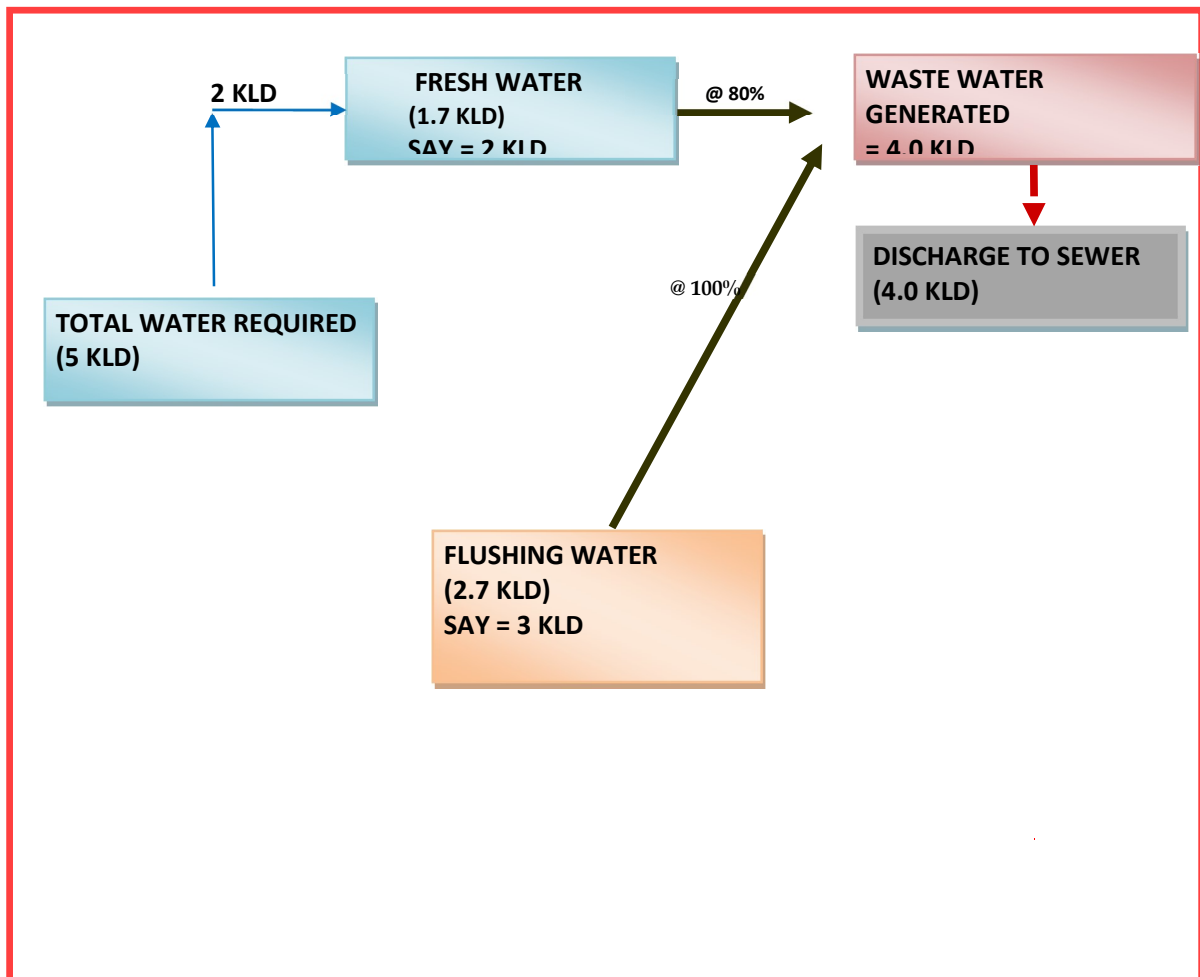


Figure 1: Water Balance Diagram

Wastewater Generation & Treatment

It is expected that 4.0 KLD of wastewater shall be generated from project site during operation phase. As the project area is less than 2000 sqm so STP is not required. Hence, wastewater generated will flow directly to external sewerage system.

RAIN WATER HARVESTING

The storm water disposal system for the premises shall be self-sufficient to avoid any collection/stagnation and flooding of water. The amount of storm water run-off depends upon many factors such as intensity and duration of precipitation, characteristics of the tributary area and the time required for such flow to reach the drains. The drains shall be located near the carriage way along either side of the roads. Taking the advantage of road camber, the rainfall run off from roads shall flow towards the drains. Storm water from various blocks shall be connected to adjacent drain by a pipe through catch basins. The water table becomes more than 25 m in future, rainwater harvesting can be carried out. Therefore, it has been calculated to provide 1 rain water harvesting pits at selected locations, which will catch the maximum run-off from the area.

- 1) Since the existing topography is congenial to surface disposal, a network of storm water pipe drains is planned adjacent to roads. All building roof water will be brought down through rain water pipes.
- 2) Proposed storm water system consists of pipe drain, catch basins and seepage pits at regular intervals for rain water harvesting and ground water recharging.
- 3) For basement parking, the rainwater from ramps will be collected in the basement storm water storage tank. This water will be pumped out to the nearest external storm water drain.
- 4) Annual rainfall shall be considered for designing the storm water drainage system.

Peak hourly rainfall has been considered as 40 mm/hr. The length & breadth of Recharge pit to be 2.5 m and 1.2 m respectively, and effective Depth = 1.5 m is constructed for recharging the water. Inside the recharge pit, a recharge bore is constructed having 300 mm diameter and 30 m depth. The bottom of the recharge structure will be kept 4 m above this level. At the bottom of the recharge well, a filter media is provided to avoid choking of the recharge bore. Design specifications of the rain water harvesting plan are as follows:

- Catchments/roofs would be accessible for regular cleaning.
- The roof will have smooth, hard and dense surface which is less likely to be damaged allowing release of material into the water. Roof painting has been avoided since most paints contain toxic substances and may peel off.
- All gutter ends will be fitted with a wire mesh screen and a first flush device would be installed. Most of the debris carried by the water from the rooftop like leaves, plastic bags and paper pieces will get arrested by the mesh at the terrace outlet and to prevent contamination by ensuring that the runoff from the first 10-20 minutes of rainfall is flushed off.
- No sewage or wastewater would be admitted into the system.
- No wastewater from areas likely to have oil, grease, or other pollutants has been connected to the system.

Calculations for storm water load

COMPUTATION FOR RAIN WATER HARVESTING PIT		
Total coverage area	732	sq mt (approx).
Average Run off coefficient for roof top	60%	percent
Peak Intensity of Runoff (assumed for provisioning Harvesting pit)	40	mm/hr
Run off from site	18	cum/hr
15 min retention (as per CPWD norms)	4	cum/hr
Size of each Harvesting Pit provided (can be varied to suit the landscape)		
Length	2.5	m approx.
Width	1.2	m approx.
Depth (effective depth)	1.5	m approx.
Volumetric capacity of Harvesting Pit	4.5	cum
Volumetric capacity of De-silting Chamber	1	cum
Volumetric capacity of Harvesting Pit + De-silting Chamber	5	cum
Harvesting pit Required	0.8	Nos.
Harvesting pit Provided Say	1.0	Nos.