

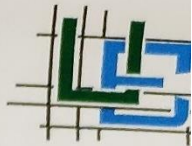
Supporting Documents

7.1.4

(Water conservation facilities)

Rain Water Harvesting

UNICA ENGINEERS AND CONTRACTOR PRIVATE LIMITED
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CIN. : U74900WB2013PTC195987
Formerly Unica Construction



Date :- 28.01.2022

PROJECT SYNOPSIS

Name of Project :- Rain Water Harvesting Scheme in Netaji Nagar Day College

Observation :- There are number of Master Pit connected to KMC drain in the site Premises, hence zero discharge Rain water harvesting scheme is not possible in Netaji Nagar Day College. But Rain water harvesting is possible with roughly 40% collection of Rain water and reuse the same in Toilet flushing, gardening purpose etc.

Proposed Scheme :- Proposed a Rain Water Harvesting Tank for Netaji Nagar Day College as per the Drawing No.-01 attached with the report. Tentative capacity of Rain Water Harvesting Tank is 4700 lit. The location and size may vary a little bit depending on underground services.
The activities for the Rain water harvesting scheme in chronological order is mentioned below-

- First we have to construct a Rain water Harvesting Tank with internal dimension of 3500x1500x1200 mm. as per Drawing No. 02 attached with the report.
- One Monoblock Transfer pump of 1HP capacity to be installed in the existing pump room. A underground suction pipe of 50 mm. dia. to be provided to the master pit connecting to the pump. A foot valve with Strainer to be provided at the starting point of suction pipe so that during suction the solid particles coming with rain water prevents to enter the suction pipe. 50 mm. dia. delivery pipe from the pump to Rain water harvesting Tank has to be laid underground.
- Close the Discharge pipe from master pit to KMC drain pit by permanent sealing.
- One 1 HP Lifting Pump to be installed inside the Rain water Harvesting Tank. The 50 mm. dia. delivery pipe from submersible pump to be laid

underground and connected to existing water supply line to overhead reservoir with incorporation of two Ball Valves as per Drawing No.-03 attached with the report. One Ball valve to be installed in the existing line from existing monoblock pump and the other Ball Valve to be installed in the Newly laid pipeline delivering the water from Rain water Harvesting Tank to Overhead Reservoir.

(Functioning methodology – When existing pump will operate the Ball valve connected to pipe from existing pump to be kept open and keep the other Ball valve closed. During Rainy season when Rain water Harvesting Tank will collect Rain water the submersible pump at rain water harvesting tank to be operated. During that time the Ball valve connecting to the pipe connected with the submersible pump to be kept open and close the other Ball valve)

- One level controller to be installed at Master pit and connected the same with Monoblock Transfer pump so that whenever the Master pit will filled with rain water the transfer pump will start automatically and deliver the rain water collected at master pit to the Rain water harvesting Tank. This operation will continue till rain stops totally. The operation will stops automatically when master pit becomes empty.
- One more level controller to be installed at Rain water harvesting Tank connected with the submersible pump. The logic may set in such a manner that whenever the Rain water Harvesting Tank is half filled, the submersible pump will starts automatically and deliver the water to Overhead reservoir. This pump will stop automatically when the tank is less than half filled.
- Since all the solid particles coming with rain water is stuck in master pit, hence time to time cleaning is required at master pit during monsoon season.
- Proposed chemical waterproofing to the internal surface of wall of Rain Water Harvesting Tank and floor of the same to prevent contamination of Ground water penetrating through the Brickwall.

Note – Only the front side Rain water vertical stack and surface water connected with master pit towards Main Road side will deliver the Rain water to Rain water harvesting Tank. The rain water collected at Backside Rain water pipe have separate discharge point. Moreover logistically it was not possible to connect other final discharge pit to proposed Rain water Harvesting Tank. As cost-wise also the same is not viable.



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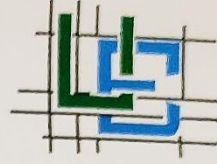
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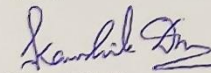
Date - 29.01.2022

Budgetary Estimate for Rain Water Harvesting Tank

Name of Project :- Netaji Nagar Day College

Sl. No.	Particulars	Unit	Qty.	Rate	Amount
(A)	For Rain Water Harvesting Tank				
1	Civil Construction of Rain Water Harvesting Tank as per the drawing attached with the report.	L.S.			1,07,600.00
2	Supplying & Installation of Monoblock Transfer Pump and Submersible Lifting Pump. Supplying & Installation of Level Controller connected to both the pumps including required electrical connection.	L.S.			58,300.00
3	Providing & Installation of underground pipes and Ball valve as per the drawing attached complete in all respect.	L.S.			28,400.00
4	Removal of existing internal plaster from ceiling and damages wall and removal of rubbish from the site premises complete in all respect.	L.S.			9,600.00
				Grand Total Cost	2,03,900.00

(Rupees Two Lacs Three Thousand and Nine Hundred only)


Kaushik Das

