VIVAAN WATER & ENVIRO SOLUTIONS PVT. LTD.

CONSULTANTS : RAINWATER HARVESTING & WATER MANAGEMENT

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RAINWATER HARVESTING REPORT

A. Client Name: M/s. Lodha Group

B. Site Details: "Acme Lodha" Proposed residential cum commercial development @ Thane, Maharashtra

C. The system will comprise of:

a. Rooftop rainwater harvesting

b. Surface rainwater harvesting

D. Rainwater Harvesting Scheme:

We have carried out a preliminary survey of the entire layout in order to propose the Rain Water Harvesting system.

(D1) Plot details and Run off Calculations:

Sr. No.	Calculation for Rooftop Run off	Quantity	Units
1	Plot Area (E&F Wing)	6173.0	Sq Mt.
2	Total Terrace Area Wing E	491.06	Sq. Mt.
3	Total Terrace Area Wing F	837.58	Sq. Mt.
4	Volume of rainwater generated per day from rooftop of Wing E considering 31mm rainfall/day.	14.46	Cu. Mt.
5	Volume of rainwater generated annually from rooftop of Wing E considering 2.5mt. rainfall/year.	38.06	Cu. Mt.
6	Volume of rainwater generated per day from rooftop of Wing F considering 31mm rainfall/day.	24.67	Cu. Mt.
7	Volume of rainwater generated annually from rooftop of Wing F considering 2.5mt. rainfall/year.	64.91	Cu. Mt.
8	Total RWH Rooftop Unit (Collection Tank) 1 for Each Wing	2	Nos.

	Surface Run-off		
9	Garden Area	60.44	Sq.mt
10	Paved / Road Area	4783.92	Sq.mt
11	Surface Run off from Garden Area/day	0.56	Cu.mt
12	Surface Run off from Paved / Road Area	133.47	Cu.mt
13	Total Surface Run off generated /day	134.03	Cu.mt
14	Total Runoff generated /day= Rooftop Runoff + Surface Runoff +Green Runoff	173.16	Cu.mt
15	Volume of water generated annually from Garden Area considering 2.5 mt of rainfall.	45.33	Cu.mt
16	Volume of water annually generated from Paved /Road Area considering 2.5 mt of rainfall.	10763.82	Cu.mt
17	Total Runoff generated from Surface + Rooftop Annually	10874.06	Cu.mt
18	Total RWH Surface Unit	**02**	Nos.

(D2) Planning for Rooftop Rainwater Harvesting System:

I. Proposed Rainwater Harvesting unit with Collection tank (Rcc tank).

II. Rooftop/Terrace water will be diverted through NP2 / PVC pipes to First flush Chamber rainwater harvesting unit. The rooftop rainwater will pass through first flush chamber, filtration chamber and then transferred to Collection tank through gravitational force.

III. There is a provision to drain off excess rainwater during heavy rain fall to storm water drain through overflow pipes.

IV. Size of Rooftop Rainwater Harvesting Unit : 02 Nos.

1. Collection Tank (For Wing E) : 30 Cu.Mt (**1no.**)
2. First flush chamber : 0.6 Mt x 0.9 Mt x 1.5 Mt Depth.
3. Filtration Chamber : 1.0 Mt x 1.0 Mt x 1.5 Mt. Depth
4. Single Filter Screen : 16"x23"dia of 1 Mtr Length.

1. Collection Tank (For Wing F) : 50 Cu.Mt (**1no.**)
2. First flush chamber : 0.6 Mt x 0.9 Mt x 1.5 Mt Depth.
3. Filtration Chamber : 1.0 Mt x 1.0 Mt x 1.5 Mt. Depth
4. Single Filter Screen : 16"x23"dia of 1 Mtr Length.

(D3) **Planning for Surface Runoff Rainwater Harvesting System: (02 Units)**

I. Surface Runoff RWH units consisting of recharging pits with grease cum desilting chamber.

II. Surface runoff water will be diverted from SWD to rainwater harvesting unit. Runoff will then pass from grease cum desilting chamber and then diverted to recharging pit.

III. Filter media of metal type 1 & type 2 will be placed in recharging pit to filter surface rainwater.

IV. Size of Surface Runoff Rainwater Harvesting (02 units)

1. Recharging pit : 0.9 Mtr x 0.9 Mtr x 2.0 Mtr. Depth
2. Grease cum desilting chamber : 0.9 Mtr.x 0.9Mtr. x 1.0Mtr. Depth

Note:

(i) We may change to some extent harvesting criteria as per the soil condition to allow max. Water to percolate. Variations in designs shall be permissible as per site conditions and design criteria.

(ii) Water from Rainwater harvesting unit can be used only for secondary purpose and not for cooking and drinking purpose.

(iii) Water for Rooftop harvesting unit to be collected from only terrace rainwater down takes.

(iv) Site is suitable for rainwater harvesting recharging. Recharge bore should be drilled to 60 meters depth.

Budgetary allocation: - a) Capital cost : 15 Lac

b) O & M Cost: 40 Thousand/year

For, M/s. Vivaan Waters & Enviro Solutions Pvt. Ltd

Authorized Signatory

VIVAAN WATER & ENVIRO SOLUTIONS PVT. LTD. MUMBAI