**Proposal for Rain Water Harvesting System at Canberg Lanka Ltd Factory, Kalutara**

Date: 21-Jul-10



**Description**

|  |  |  |
| --- | --- | --- |
| Map with pin with solid fill | **Location** | **Kalutara District** |
| House with solid fill | **Roof area**  | **13, 580 ft2 = 1260 m2** |



**Demand**

|  |  |  |
| --- | --- | --- |
| **No. of workers**  | **400** |  |
| **Min. Daily water use**  | **400 x 20 lites** | **8,000 liters** |
| **Monthly use** | **8,000 x 20 days** | **160,000 liters** |



**Need**

The site is usually served by springs water which is directly pumped into 4 x 5 m3 plastic tanks. However, during the dry season for about 2 months this water source is not available, and water has to be brought to site by bowser at a high cost.

**Annual Average rain fall in the area = 2400 mm**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monthly** | **Monthly Rain fall ( mm)** | **Mean Monthly Supply ( m3)** | **Acc. Supply ( m3)** | **Monthly Demand ( m3)** | **Acc. Demand ( m3)** |
| **SEP** | 246 | 236 | 236 | 160 | 160 |
| **OCT** | 306 | 294 | 530 | 160 | 320 |
| **NOV** | 269 | 259 | 788 | 160 | 480 |
| **DEC** | 160 | 153 | 942 | 160 | 640 |
| **JAN** | 85 | 82 | 1023 | 160 | 800 |
| **FEB** | 54 | 52 | 1075 | 160 | 960 |
| **MAR** | 70 | 67 | 1143 | 160 | 1120 |
| **APR** | 209 | 201 | 1344 | 160 | 1280 |
| **MAY** | 301 | 289 | 1633 | 160 | 1440 |
| **JUN** | 207 | 198 | 1831 | 160 | 1600 |
| **JUL** | 157 | 150 | 1981 | 160 | 1760 |
| **AUG** | 151 | 145 | 2127 | 160 | 1920 |
| **ROC** | 0.8 |  |  |  |  |

Table 1 Monthly Rain fall.



Figure 1 Acc. Supply & Demand



**Calculation**

* In order to meet the min. demand through rain water alone the storage capacity needed is 349 m3.
* Estimated cost of constructing 349 m3 capacity tanks is
	+ Ferro cement tanks Rs. 3, 490,000
	+ Concrete sump Rs. 4, 200,000
* Storage needs for dry month demand only 100 m3
	+ Estimated cost of Ferro cement tank is Rs. 1, 000,000



**Recommendation**

* Build storage for dry months only.
* Combine with storage on the ground and recharging the ground water through a well, if there is an existing well or by digging a well. This can then be pumped for use during dry season.

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