**LANKA RAIN WATER HARVESTING FORUM**

Rain Water Harvesting Systems at

Finlays Tea (Pvt) Ltd Factory

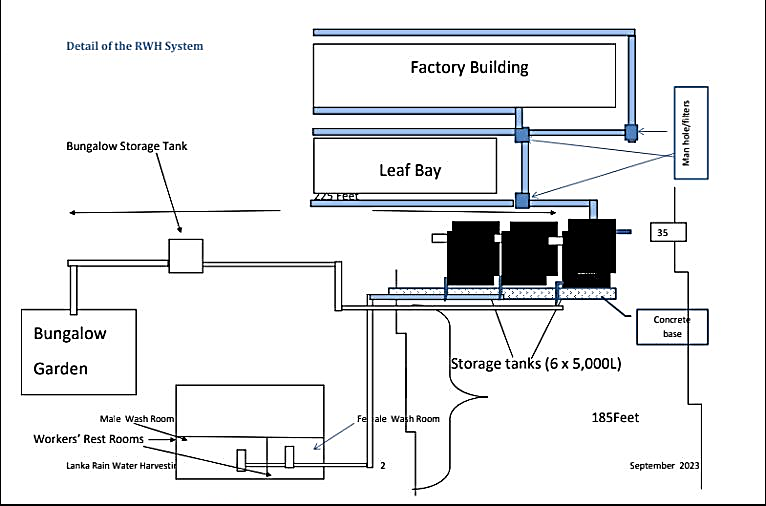
-Haldamulla-

September 2023

**INTRODUCTION**

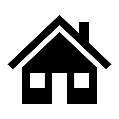
From the tea estates situated amid the misty mountains of Newaraeliya and the jungle valleys of Ratnapura, **Finlays Pvt Ltd** is a renowned processor and supplier of Nutritive Tea in Sri Lanka. The Tea factory is situated in Haldamulla, Badulla. They approached **Lanka Rain Water Harvesting Forum** to obtain Rain Water Harvesting Systems in order to address the problem of insufficient potable water for gardening, toilet flushing, and other factory-related uses. Dr. Tanuja Ariyananda, the CEO of LRWHF, suggested the RWHS system design.



**DETAIL OF THE RAIN WATER HARVESTING SYSTEM DESIGN**



RAINWATER CATCHMENT ROOFS



**ROOF AREA**

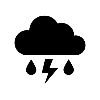
|  |  |
| --- | --- |
| **ROOF TYPE** | **ROOF AREA (m 2 )** |
| Factory Roof | **1386** |
| Leaf Bay | **313** |
| TOTAL | **1699** |



**CALCULATION OF WATER CONSUMPTION PER MONTH**

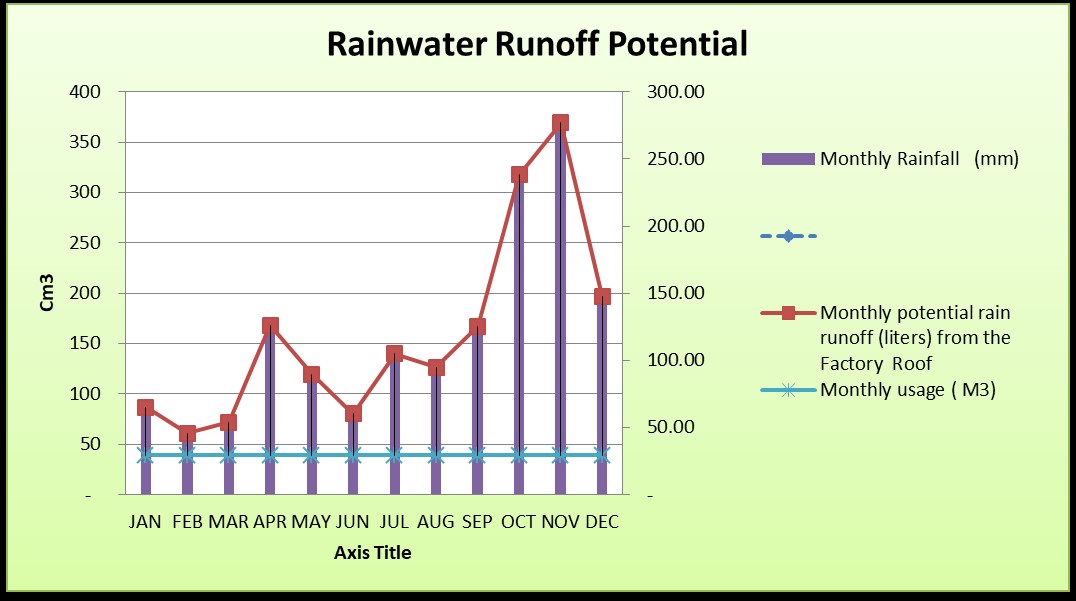
The total water consumption for toilet flushing and gardening is as given below,

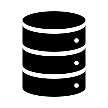
|  |  |
| --- | --- |
| Day Shift –    4L X (2Buckets) = 8L x 28 workers | 224 L |
| Night Shift -  4L x (2 Buckets) x 2  =16L X 11 workers | 176 L |
| Total | 400 L |
| Gardening per day | 900 L |
| Grand total per day | 1,300 L |
| **Water usage per month** | **39,000 L** |

**CALCULATION OF RAINWATER HARVESTING POTENTIAL**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Months** | **Monthly**  **Rainfall**  **(mm)** | **Monthly potential rain runoff (liters) from the**  **Factory  Roof** | **Monthly potential rain runoff (liters) from the Leaf Bay Roof** | **Total  potential volume of water ( M3)** | **Monthly**  **usage ( M3)** |
| **JAN** | 64.00 | 70,861 | 16,026 | 86 | 39 |
| **FEB** | 45.00 | 49,824 | 11,268 | 61 | 39 |
| **MAR** | 53.00 | 58,682 | 13,271 | 72 | 39 |
| **APR** | 124.00 | 137,293 | 31,050 | 168 | 39 |
| **MAY** | 88.00 | 97,434 | 22,035 | 119 | 39 |
| **JUN** | 59.00 | 65,325 | 14,774 | 80 | 39 |
| **JUL** | 103.00 | 114,042 | 25,791 | 140 | 39 |
| **AUG** | 93.00 | 102,970 | 23,287 | 126 | 39 |
| **SEP** | 123.00 | 136,186 | 30,799 | 167 | 39 |
| **OCT** | 234.00 | 259,085 | 58,594 | 318 | 39 |
| **NOV** | 272.00 | 301,158 | 68,109 | 369 | 39 |
| **DEC** | 145.00 | 160,544 | 36,308 | 197 | 39 |
| **Annual Total** | **1,403.00** | **1,553,401.60** | **351,311.20** | **1,905** | **468.00** |

**RAIN WATER RUNOFF POTENTIAL**



**RAINWATER HARVESTING TANK CAPACITY**

|  |  |  |
| --- | --- | --- |
| TANK CAPACITY | NO OF TANKS | TOTAL STORAGE CAPACITY |
| 5,000 L | 6 | **30,000 L** |

**RAINWATER HARVESTING SYSTEM IMPLEMENTED**







