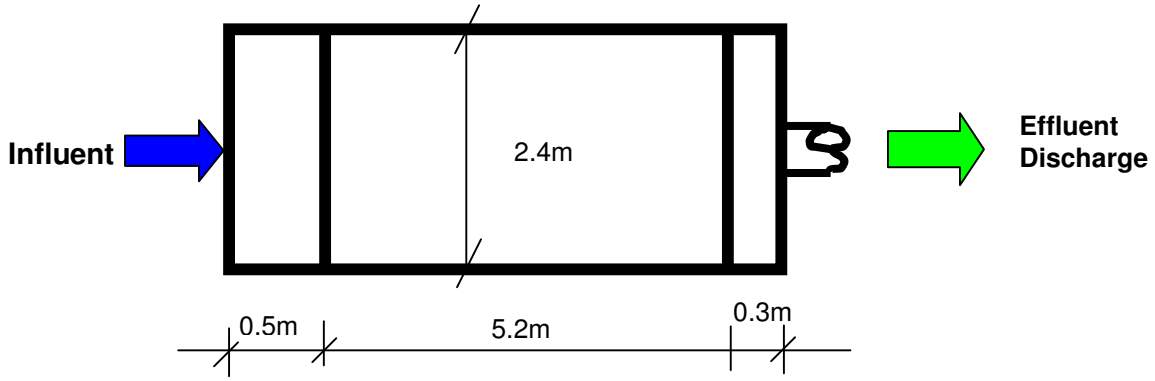
Design Criteria:

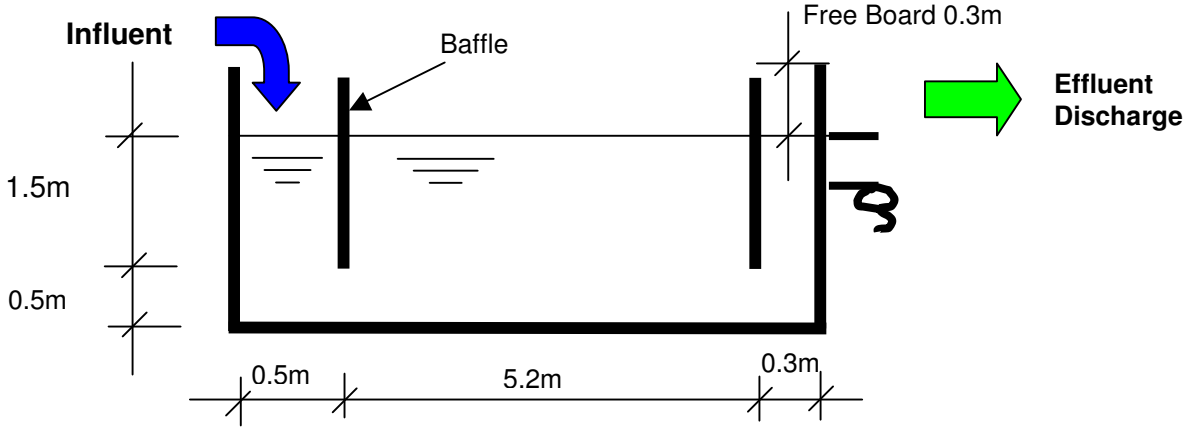
- Daily flow rate = 100m^3/day (8 hours operation)
- Average flow rate = 12.5m^3/hr
- Peak flow rate = 2 * Average flow rate = 25m^3/hr
- Equivalent hydraulic retention time = 2 hours at peak flow rate (by gravity sedimentation)
- Surface loading = 20m^3/m^2/d at peak flow rate
- Weir loading = 250m^3/m/d at peak flow

Proposed Configuration

- 3 pumps, connected in lead-lag mode and each of maximum flow rate of 8.33m^3/hr (peak flow of 25m^3/hr divided by 3 pumps), will be used to pump the wastewater to the 3 sedimentation tanks.
- The sedimentation tanks will be connected in parallel.
- The operation principle is to activate 1 pump first and the wastewater will be diverted to a designated (i.e. 1st) sedimentation tank. When the incoming wastewater flow is greater than the pump capacity, the 2nd pump will be activated. The same principle applies to the 3rd pump.
- A flow distributor will be installed at the inlet of the sedimentation tanks to ensure wastewater is evenly distributed to each sedimentation tank when the pumps are operating in lead-lag mode.



Plan Layout of the Settling Tank *(not in scale)*



Cross-section of the Settling Tank *(not in scale)*

Figure 3-17 Schematic Design of the Settling Tank