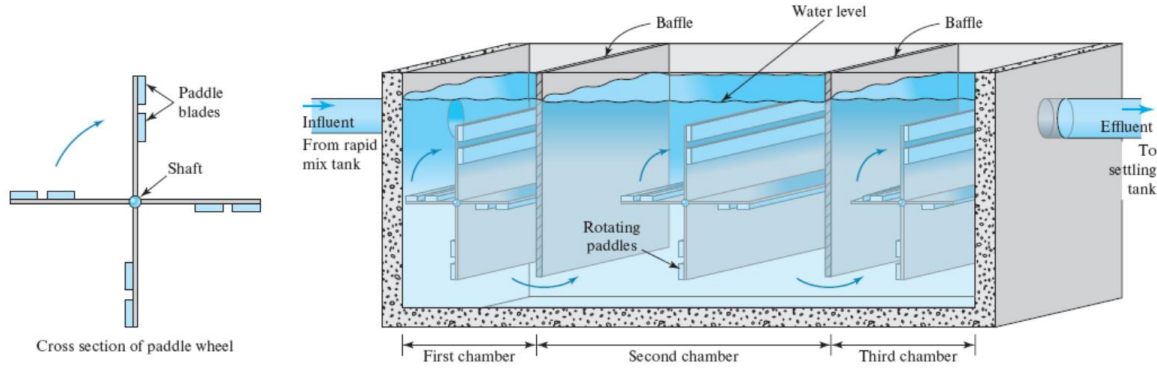




Lecture 4: Water Treatment- Flocculation.

4. Flocculation Tank

The objective of flocculation is to allow the particles to adhere to one another, and grow to a size that will settle readily



- Detention time of 20 to 50 minutes, typical 30 minutes. G range $(20 - 80) \text{ s}^{-1}$. محددات مثالية لهذا الحوض.
- Water depths in the basin range from 3 to 5 m. صافي ارتفاع المياه في الحوض من 3 الى 5 متر.
- The flocculation basin should be divided into at least three compartments. عادة هذا الحوض يتم تقسيمه الى 3 اقسام.

Q: Flocculation tank is to be designed for a total flow rate of $40,000 \text{ m}^3/\text{d}$. The following conditions apply to the design: total detention time of 45 min, tank depth of 3.5 m and length/width=3, **3 flocculation stages** of same dimensions, the first stage G is 50 s^{-1} , the second stage G is 35 s^{-1} , and the third stage G is 20 s^{-1} .

Determine the dimension of the tank and power of each motor.

Solution: