

Secondary Settling Tanks

Although developments in wastewater treatment over recent decades have focused on the biological reactor, the secondary settling tank (SST) also plays a major role in achieving increasingly stringent effluent quality standards.

This report collates many of the significant developments that have taken place in SST theory, design, modelling and operation. Earlier SSTs were designed only by empirical hydraulic criteria such as overflow rate, which do not recognize sludge concentration and settleability. Today, there are available not only much improved design procedures but also hydrodynamic models for simulating water and solids distribution and flows in full-scale SSTs.

Nine chapters cover a wide range of subjects including:

- Flocculation and settling behaviour of biological sludges
- SST performance evaluation protocols
- Development and evaluation of the different design procedures such as the flux theory and the ATV design rules
- Developments in and application of one- two- and three-dimensional modelling
- Experience-based aspects of design and operation of circular, rectangular and vertical SSTs.

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