

# **GUIDELINES FOR THE DESIGN OF SMALL SEWAGE TREATMENT PLANTS**

## **1. INTRODUCTION**

Many areas of Hong Kong are not served by public foul sewers. Private developers in these areas are therefore required to provide their own sewage treatment facilities to treat the sewage to acceptable standards for direct discharge into the receiving waters. These guidelines have been prepared with a view to providing Authorized Persons and designers with general advice on the design of small sewage treatment plants (STP) for private development up to 2 000 population equivalent. In preparing the guidelines, special emphasis is placed on the problems that are usually found with small plants and appropriate design safety margins are incorporated. For plants serving population exceeding 2 000 the designer should approach the Environmental Protection Department to discuss the possibility of adopting a more rational design approach.

The function of an STP is for treating collectively any wastes of the kind that are ordinarily discharged from toilets, water closets, baths, showers, sinks, basins and other sanitary and kitchen fitments. The main concerns of the Environmental Protection Department on these small sewage treatment plants relate both to the adequacy of the treatment processes proposed and also to the uncertainty in ensuring proper long term operation and maintenance and hence the possibility of discharge of substandard effluent. The following guidelines therefore highlight the importance of good plant design, which among other objectives, should aim to make future operation easy and reliable.

It should be noted however, that for small developments with a population of less than about 50, the use of small sewage treatment plants should be avoided as far as possible. The possibility of primary treatment (e.g. septic tank) followed by soakaway, which essentially results in no open discharge of wastewater, should always be examined. Unless site percolation tests have shown this to be impractical and adverse conditions prevent, a septic tank together with its soakaway system will be preferred for these situations.

The Water Pollution Control Ordinance controls the discharge of wastewater, including treated effluent into waters within areas designated as Water Control Zones. The Authorized Persons may contact the Environmental Protection Department for information regarding details of the legislative control relevant to discharges from small STP.

A glossary of terms is given in Appendix 1.