INTISARI

Limbah domestik merupakan penyumbang terbesar dari masalah pencemaran air, khususnya di kota-kota besar dengan penduduk yang lebih padat, oleh karena itu pengolahan limbah domestik perlu dilakukan. *Sewage Treatment Plant* biasanya digunakan pada bangunan hotel, apartemen maupun perumahan, seperti di Apartemen Bintaro Mansion Tangerang.

Perencanaan sistem pengolahan air limbah berdasarkan *hydraulic loading* dimaksudkan untuk mempermudah perhitungan dimensi tiap unit *Sewage Treatment Plant*, jenis *extended æration.* Dimensi tiap bak dihitung berdasarkan kriteria-kriteria desain tiap unit seperti lamanya waktu detensi dan kecepatan aliran.

Tugas akhir ini berisikan mengenai penjelasan jenis sistem pengolahan air limbah kotor pada Apartemen Bintaro Mansion, cara kerja dan fungsi tiap unitnya, debit limbah air kotor serta dimensi dari tiap unit STP. Hasil desain dimensi-dimensi tiap unit dari *Sewage Treatment Plant* didapatkan berdasarkan analisis luas efektif dan *hydraulic loading*.

Kata Kunci : *Extended Aeration, hydraulic loading, Sewage Treatment Plant*

ABSTRACT

Domestic wastewater is the biggest contributor to the problem of water pollution, especially in large cities with denser populations, therefore processing of domestic wastewater needs to be done. Sewage Treatment Plant is usually used in hotel, apartment and residential buildings, such as the one in Bintaro Mansion Apartment Tangerang.

Design of wastewater treatment system is based on hydraulic loading, the purpose is to simplify the calculation of the dimensions of Sewage Treatment Plant, extended aeration type. The dimensions of each tank are calculated based on the design criteria of each unit such as detention time and flow velocity.

This final project revealed an explanation of wastewater treatment systems in Bintaro Mansion Apartment, how the units work, the functions of each unit, the flow rate of the wastewater and the dimensions of STP. The design results of the dimensions of each unit of Sewage Treatment Plant are obtained based on effective area analysis and hydraulic loading.

Keywords *: extended aeration, hydraulic loading, sewage treatment plant*