ABSTRAK

Rusunami X akan direncanakan fasilitas sanitasi guna memberikan kenyamanan dan menjamin kesehatan pengguna, sehingga salah satu upaya yang dilakukan adalah dengan merancang sistem plambing air bersih dan air buangan. Tujuan dari penelitian ini merencanakan kebutuhan air bersih, meliputi perhitungan *ground water tank*, *roof tank* dan dimensi pipa air bersih di Rusunami X; Merencanakan dan menghitung debit air limbah (*Grey Water* dan *Black Water*) di Rusunami X meliputi perhitungan dimensi pipa air limbah *grey water*, dimensi pipa air limbah *black water*, dan perhitungan dimensi pipa *vent* dan Merencanakan dan menghitung pemanfaatan WAC 3 berupa daur ulang *grey water* di Rusunami X meliputi dimensi pipa air *second class* untuk penggelontoran *Water Closet* (WC). Hasil yang didapat Jumlah total populasi Rusunami X yaitu 3658 jiwa, Kebutuhan total air bersih yaitu 311 m^3/hari, Volume *Ground Tank* 1 yaitu 352 m^3 & *Ground Tank* 2 yaitu 165 m^3 Volume *Roof Tank* 1 yaitu 42 m^3 & *Roof Tank* 2 yaitu 34 m^3, Diameter pipa air bersih *first class* mempunyai rentang 20 mm–25 mm, Diameter pipa air bersih *second class* mempunyai rentang 25 mm–25 mm, Diameter pipa *grey water* mempunyai rentang 48 mm–60 mm, Diameter pipa *black water* mempunyai rentang 48 mm–114 mm, Diameter pipa vent mempunyai rentang 48 mm–76 mm, Pengolahan yang akan digunakan yaitu menggunakan *Sewage Treatment Plant* (STP) Biofive dengan teknologi Biotech dengan tipe BFV-2000 yang mempunyai volume 200 m3 dengan efisiensi pengolahan 80%, Penghematan air bersih dengan menggunakan air daur ulang sebesar 51 %.

Kata kunci:penghematan air; plambing; *water conservation*

ABSTRACT

Rusunami X will be planned about sanitation facilities to provide comfort and ensure the health of users, so that one the efforts is to design the system plumbing clean water and waste water. The goals from this research is to plan the need of clean water, covering calculation ground water tanks, roof tanks and dimensions clean water pipe in Rusunami X of; plan and calculate the discharge of waste water (Grey water and Black water) in Rusunami X covering calculation dimensions waste water pipe grey water, waste water pipe dimensions black water, and a vent pipe dimensions and is planning to and calculate the utilization of WAC 3 in the form of recycling grey water in Rusunami X covering dimensions the water pipe of the second class for flushing Water Closet (WC). The results obtained the number of the total number of apartments x include 3658 person , the need for clean water the 311 total m^3 / day , volume 1 of 352 ground tanks m^3; ground tanks 165 m^3 volume 2 is knowing the m^3 1 tanks 42 ; knowing the m^3 34 2 tanks , the diameter of clean water pipe first class have range 20 mm-25 mm, clean water pipe diameter second class has 25 range-25 mm, diameter pipe grey water have range 48 mm-60 mm, diameter pipe black water have range 48 mm-114 mm, diameter pipe vent has a 48 mm-76 mm, processing to be used that is using sewage treatment plant (STP) *biofive type bfv-2000 with 200 volume m^3 % 80 manufacturing efficiency , the clean water by means of water recycling % of 51*

Keywords: *The saving water; plambing; water conservation*