

ABSTRAK

Sistem plambing merupakan bagian dari sistem utilitas bangunan yang berkaitan dengan teknologi pemasangan pipa dan perlengkapannya. Pada pembangunan gedung bertingkat sering ditemukan kebutuhan air bersih kurang dan sistem air bersih yang tekanan air pada area lantai atas kurang dan pada area bawah berlebihan, begitu juga pada sistem air buangan sering dijumpai instalasi air buangan dibuat tidak sesuai dengan standar dimana hal itu dapat menyebabkan terjadinya pencemaran lingkungan. Untuk menghindari hal tersebut pada perancangan ini akan diperhitungkan kebutuhan air bersih, air buangan serta sistem distribusinya. Dari hasil perancangan ini, pada gedung kantor delapan lantai di Jakarta Pusat dengan jumlah penghuni sebanyak 282 orang dibutuhkan air bersih sebesar 11,79 m³/hari. Kapasitas *Ground Water Tank (GWT)* air bersih sebesar 11,79 m³, kapasitas *Ground Water Tank (GWT)* air daur ulang sebesar 4.230 Liter, kapasitas *roof tank* air bersih sebesar 2,58 m³ dan kapasitas *roof tank* air daur ulang sebesar 0,925 m³, Untuk kapasitas *Sewage Treatment Plant (STP)* sebesar 9,432 m³. Sistem distribusi air bersih menggunakan sistem tangki atap, kemudian air di distribusikan secara gravitasi gravitasi dari lantai 5 sampai lantai 1 dan pompa booster dari lantai atap sampai lantai 6. Air daur ulang dari pengolahan sistem STP dimanfaatkan kembali ditampung dalam *Ground Water Tank (GWT)* air daur ulang untuk dimanfaatkan sebagai gelontor kloset, sistem distribusi air daur ulang untuk gelontor kloset sama dengan sistem distribusi air bersih. Berdasarkan perhitungan pompa transfer air bersih dan air daur ulang diperoleh kapasitas pompa transfer air bersih sebesar 2 x 86 Liter/menit, head 62,01 m dan untuk pompa transfer air daur ulang diperoleh kapasitas 38,8 Liter/menit, head 68,82 m, dan Berdasarkan perhitungan pompa booster air bersih dan air daur ulang diperoleh kapasitas pompa booster air bersih sebesar 2 x 33,25 Liter/menit, head 14,3 m dan untuk pompa booster air daur ulang diperoleh kapasitas 10,85 Liter/menit, head 14,3 m.

Kata Kunci: *Plambing, Sistem Air Bersih, Sistem Air Buangan, Gelontor Kloset*

ABSTRACT

Plumbing system is part of the building's utility system related to the technology of installing pipes and equipment. In the construction of high-rise buildings, it is often found that the need for clean water is lacking and the clean water system has less water pressure in the upper floor area and excessive in the lower area, as well as in the wastewater system, it is often found that the wastewater installation is not made according to standards which can lead to environmental pollution. To avoid this in this design, the need for clean water, waste water and distribution systems will be taken into account. From the results of this design, in an eight-story office building in Central Jakarta with a total of 282 occupants, 11.79 m³/day of clean water is needed. The capacity of the Ground Water Tank (GWT) of clean water is 11.79 m³, the capacity of the Ground Water Tank (GWT) of recycled water is 4,230 Liters, the capacity of the roof tank for clean water is 2.58 m³ and the capacity of the roof tank for recycled water is 0.925 m³, For Sewage Treatment Plant (STP) capacity of 9,432 m³. The clean water distribution system uses a roof tank system, then the water is distributed by gravity from the 5th floor to the 1st floor and a booster pump from the roof floor to the 6th floor. Recycled water from the STP system processing is reused and stored in Ground Water Tank (GWT) water. recycled to be used as a toilet flush, the recycling water distribution system for a toilet flush is the same as the clean water distribution system. Based on the calculation of the clean water transfer pump and recycled water, the capacity of the clean water transfer pump is 2 x 86 Liters/minute, the head is 62,01 m and for the recycled water transfer pump, the capacity is 38.8 Liters/minute, the head is 68,82 m , and Based on the calculation of the clean water and recycled water booster pump, the capacity of the clean water booster pump is 2 x 33.25 Liters/minute, the head is 14.3 m and for the recycled water booster pump, the capacity is 10.85 Liters/minute, head 14.3 m.

Keywords: Plumbing, Clean Water System, Wastewater System, Toilet Flush