

ABSTRAK

Nama : Bagaskara Nugraha Permana P
Program Studi : Teknik Lingkungan
Judul : Perencanaan Sistem Plambing Air Bersih dan Air Limbah Di Apartemen Kairaku *Residence* dengan Konsep *Water conservation* (WAC)
Pembimbing :
1. Yulianti Pratama, ST.,MT.
2. Anindito Nurprabowo, ST., MT

Pembangunan Gedung Apartemen Kairaku *Residence* harus berdasarkan Peraturan Daerah Kabupaten Karawang Nomor 8 Tahun 2015 tentang Bangunan Gedung, bahwa pembangunan Gedung harus diselenggarakan sesuai dengan peruntukannya sesuai dengan RTRW dan persyaratan bangunan Gedung hijau yaitu efisiensi penggunaan air. Berdasarkan hal tersebut pembangunan Gedung Apartemen Kairaku *Residence* akan direncanakan sistem plambing dengan konsep konservasi air berdasarkan *Green Building*. Upaya yang dilakukan yaitu dengan menggunakan poin WAC 2, WAC 3 dan WAC 4. Pemakaian air bersih akan dihemat dengan cara mendaur ulang air buangan sebagai air *second class* untuk kebutuhan *flushing* WC dan penggunaan alat plambing hemat air serta air kondensasi AC sebagai sumber air alternatif. Apartemen Kairaku *Residence* memiliki jumlah populasi 1983 jiwa dengan kebutuhan air bersih 348 m³/hari, sumber air bersih yang digunakan berasal dari PDAM. Timbulan air limbah yang dihasilkan sebesar 278,4 m³/hari yang diolah menggunakan STP *Biofive* sehingga dapat menghasilkan air yang dapat digunakan kembali sebesar 222,7 m³/hari dan timbulan air kondensasi AC yang diperoleh sebesar 3,09 m³/hari. Air bersih *first class* dan *second class* akan disimpan pada *ground tank* dan dialirkan menuju *roof tank*. Penggunaan alat plambing hemat air dengan merk TOTO dapat menghemat air sebanyak 47,5 %. Diameter pipa air bersih dan *second class* mempunyai rentang 20 mm-125 mm, pipa air limbah 48 mm - 318 mm serta *vent* 28 mm-114 mm dengan biaya perencanaan sistem plambing yaitu Rp. 10.066.489.000.

Kata Kunci : Konservasi Air; Sistem Plambing; Air Daur Ulang; Air Kondensasi AC; Alat Plambing Hemat Air

ABSTRACT

Name : Bagaskara Nugraha Permana P
Study Program : *Environmental Engineering*
Title : *Planning of Plumbing System for Clean water and Wastwater at Kairaku Residence Apartment wit Concept Water Conservation (WAC)*
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The construction of the Kairaku Residence Apartment Building must be based on the Karawang District Regulation No. 8 of 2015 concerning Building Buildings, that the building construction must be carried out according to its designation in accordance with the RTRW and the building requirements of the Green Building, namely the efficiency of water use. Based on this, the construction of the Kairaku Residence Apartment Building will be planned by a plumbing system with the concept of water conservation based on the Green Building. Efforts are made by using WAC 2, WAC 3 and WAC 4 points. Use of clean water will be saved by recycling waste water as a second class water for toilet flushing needs and the use of water-saving plumbing tools and AC condensation water as alternative water sources. Kairaku Residence Apartment has a population of 1983 souls with clean water needs of 348 m³ / day, the source of clean water used is from PDAM. The resulting wastewater is 278.4 m³ / day which is processed using Biofive STP so that it can produce reusable water of 222.7 m³ / day and the generation of AC condensed water obtained is 3.09 m³ / day. First class and second class clean water will be stored in the ground tank and flowed towards the roof tank. The use of water-saving plumbing tools with the TOTO brand can save 47.5% water. The diameter of the clean water pipe and the second class has a range of 20 mm-125 mm, a waste water pipe of 48 mm-318 mm and a vent of 28 mm-114 mm with the cost of planning a plumbing system which is Rp. 10,066,489,000.

Key word : Water Conservation; Recycled Water; Air Conditioning AC; Water Saving Fixture