ABSTRAK

Judul : Desain Alternatif Gedung Bertingkat Banyak Dengan Tinggi Dan Letak Efektif Shear Wall, Studi Kasus : Gedung Apartment Treepark City Cikokol, Nama : Ary Dharmawan, Nim : 41115010039, Dosen Pembimbing : Ir. Zainal Abidin Shahab, MT, 2019.

Pada struktur gedung bertingkat, tahanan gaya gempa total harus disediakan oleh kombinasi rangka pemikul momen dan dinding geser, dengan distribusi yang proporsional terhadap kekakuannya. Efektifitas letak dan ketinggian dinding geser (shear wall) perlu dianalisis agar bangunan semakin kaku dan dinding geser (shear wall) tidak mengakibatkan negative shear.

Pada tugas akhir ini penulis melakukan desainan alternatif Gedung Apartmen TreePark City Cikokol. Dengan mencari ketinggian efektif dinding geser (shear wall) berdasarkan variasi letak dinding geser (shear wall). Dilakukan analisa terhadap 3 konfigurasi letak shearwall, kemudian didapat konfigurasi letak terpilih berdasarkan displacemen, eksentrisitas dan daya serap, lalu dianalisa ketinggian efektif . Permodelan dan analisis struktur dengan software ETABS v 9.7.4.

Berdasarkan hasil analisa didapat letak shearwall yang efektif adalah letak shearwall yang berada ¼ bentang panjang bangunan yang menghasilkan nilai eksentrisitas dan displacement terkecil. Ketinggian shearwall yang efektif yaitu sampai 28 lantai, dimana pada 2 lantai teratas shearwall mengakibatkan negative shear.

Kata Kunci : Dinding Geser, Sistem Ganda, Tinggi Efektif, Letak Efektif.

ABSTRACT

Title : Alternative Design of Hight Rise Buildings with High and Effective Shear Wall Location, Case Study: Apartment Building Treepark City Cikokol, Name : Ary Dharmawan, NIM : 411115010039, Supervisor : Ir. Zainal Abidin Shahab, MT, 2019.

In a hight rise building structure, the total earthquake resistance must be provided by a combination of frame and shear wall, with a distribution proportional to its stiffness. The location and height effectiveness of the shear wall need to be analyzed so that the building becomes stiffer and the shear wall does not cause negative shear.

In this final assignment the author conducted an alternative design of the TreePark City Cikokol Apartment Building. By searching for hight effective shear wall is based on variations in the location of the shear wall. Analysis of 3 configurations of shearwall location was carried out, then the chosen configuration location was obtained based on displacements, eccentricities and absorbability, then analyzed the height effective. Structure and analysis with ETABS v 9.7.4.

Based on the analysis results obtained an effective position of the shearwall is the shearwall position which is ¼ the long span of the building which produces the eccentricity value and the smallest displacement. Height effective shearwall is up to 28 floors, where at the top 2 floors of shearwall cause negative shear.

***Keywords:** Shear Wall, Dual System, High Effective, Effective Layout*