EVALUASI KINERJA STRUKTUR GEDUNG FAKULTAS ILMU SOSIAL DAN ILMU POLITIK UNIVERSITAS JENDERAL ACHMAD YANI MENGGUNAKAN ANALISIS *PUSHOVER*

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ABSTRAK

Gedung Fakultas Ilmu Sosial dan Ilmu Politik Universitas Jenderal Achmad Yani kategorinya tergolong paling tinggi keamanan untuk mempertahankan fungsi struktur dari guncangan gempa dan didapatkan keselamatan dan kesiapan pakai. Menggunakan analisis pushover untuk mengetahui perilaku keruntuhan bangunan dengan memberi beban lateral statik yang ditingkatkan sampai terjadi deformasi yang tujuannya yaitu mengetahui nilai *capacity curve*, mengetahui nilai *performance point* pada kurva *pushover* sesuai hasil SAP2000 v14. serta mengetahui kriteria kinerja seismik struktur Gedung Fakultas Ilmu Sosial dan Ilmu Politik Universitas Jenderal Achmad Yani berdasarkan ATC-40. Metodologi penelitian pada Tugas Akhir ini ialah Pushover Analysis dengan bantuan data respon spektrum wilayah gempa Bandung dengan nilai Sds=0,2552 nilai Sd1=0,51 sesuai kategori risiko gempa SD (Tanah Sedang) serta kategori desain seismik menggunakan nilai R=8 hal ini guna memperoleh kriteria kinerja bangunan berdasarkan ATC-40 dengan menggunakan software SAP2000 v14. Dari hasil analisis pushover didapatkan nilai hasil Titik Kinerja (Performance Point) ATC- 40 dengan nilai Sa = 0,288 dan Sd = 0,076 untuk Push X, sedangkan nilai push Y Sa = 0,291 dan Sd = 0,139, Hasil analisis kedua evaluasi tingkat kinerja struktur menggunakan ATC-40 menunjukan nilai drift ratio arah X= 0,0055 dan drift ratio arah Y=0,0056. Berdasarkan ATC-40 menunjukkan bahwa Gedung Fakultas Ilmu Sosial dan Ilmu Politik Universitas Jenderal Achmad Yani termasuk dalam level kinerja Immediate Ocupancy (IO) hal ini berarti bahwa bila terjadi gempa gedung tidak mengalami kerusakan struktur dan non struktural sehingga bangunan tersebut tetap aman digunakan

Kata kunci:ATC-40*, Immediate Ocupancy, Pushover Analysis, Respons Spectrum*

EVALUATION OF STRUCTURE PERFORMANCE OF THE FACULTY OF SOCIAL AND POLITICAL SCIENCE UNIVERSITAS JENDERAL ACHMAD YANI USING PUSHOVER ANALYSIS

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ABSTRACT

The building of the Faculty of Social and Political Sciences, Jenderal Achmad Yani University is classified as the highest in the safety category to maintain the function of the structure from earthquake shocks and obtain safety and readiness for use. Pushover analysis is used to determine the behavior of building collapse by giving increased static lateral loads until deformation occurs, the purpose of which is to determine the capacity curve value, to determine the performance point value on the pushover curve according to the results of SAP2000 v14. as well as knowing the seismic performance criteria for the structure of the Faculty of Social and Political Sciences, Jenderal Achmad Yani University building based on ATC-40. The research methodology for this Final Project is Pushover Analysis with the help of spectrum response data for the Bandung earthquake area with a value of Sds = 0.2552, a value of Sd1 = 0.51 according to the SD earthquake risk category (Medium Land) and the seismic design category using an R = 8 value. in order to obtain building performance criteria based on ATC-40 using SAP2000 v14 software. From the results of the pushover analysis, the ATC-40 Performance Point results obtained with a value of Sa = 0.288 and Sd = 0.076 for Push X, while the value of push Y Sa = 0.291 and Sd = 0.139. The results of the second analysis evaluate the performance level of the structure using ATC -40 indicates the drift ratio in the X direction = 0.0055 and the drift ratio in the Y direction = 0.0056. Based on ATC-40, it shows that the building of the Faculty of Social and Political Sciences, Jenderal Achmad Yani University, is included in the Immediate Occupancy (IO) performance level, this means that if an earthquake occurs, the building does not suffer structural and non-structural damage, so the building remains safe to use.

Keywords:ATC-40, Immediate Ocupancy, Pushover Analysis, Spectrum Response