STRUCTURE MODIFICATION OF
MULYOREJO APARTMENT USING
ECCENTRICALLY BRACED FRAMES

Name : M. Machdum Ibrohim
NRP : 3110 100 066
Department : Teknik Sipil FTSP – ITS
Supervisor I : Ir. Heppy Kristijanto, MS.
Supervisor II : Data Iranata, S.T., M.T., Ph.D.

ABSTRACT

Mulyorejo apartment is an apartment located in Surabaya. It has 33 storeys and 100.7 meters height. Mulyorejo apartment is actually designing with reinforcement concrete structure. For comparison study, this building is modified by using steel open frame system. Great ability of steel will reduce the weight of structure.

Eccentrically Braced Frame System is steel open frame system which uses eccentric bracing to withstand lateral loads. This system has the advantage of owning a high stiffness and ductility level which is higher compared to other existing systems. The role of bracing as stiffeners and link which is ductile is to reduce earthquake energy effectively, together increases system performance as an earthquake resistant steel structure.

This final project redesigning structure element include slabs, stairs, secondary beams, primary beams, columns and foundations. The design of this building is uses Eccentrically Braced Frames (EBF).

The purpose of this final project is to make rationally steel open frame system which has good ability and ductility based on SNI 03-1729-2002 about ”Tata Cara Perencanaan Struktur Baja untuk Gedung”, SNI 03-1726-2002 about ”Tata Cara
Perencanaan Ketahanan Gempa untuk Bangunan Gedung” and ”Peraturan Pembebanan Indonesia untuk Gedung 1983”.

Keyword: Mulyorejo Apartment, EBF, Ductility