ABSTRACT

The Yogyakarta Earthquake that occurred 26 may 2006 caused casualties and some buildings collapsed. One of the buildings Yogyakarta got its impact was the law faculty building of Islamic Univeristy of Indonesia. UII at the time of occurrence, the building did not collapse but needed repairs. In 2007 the building was conducted post-quake renovation by adding reinforced concrete x-bracing structures. With the implementation of post-quake renovation, it is necessary to evaluate the structure to examine the structural performances of the building.

At this study, the building evaluation is only focused on the Block B only consisting three floors. Both conditions either existing or strengthened building structures were evaluated for a sake comparison. Pushover analysis based on the FEMA 356 standard were carried out utilizing the SAP2000 version 14 software.

The analysis results showed that the strengthened building structures demonstrated a better building capacity in resisting lateral forces as representation of earthquake force. The analysis of the law faculty building of UII Block B at existing and strengthened conditions presented the building performance level at intermediate occupancy (IO). The resulted strong drift or displacement target decreased of 0.075 m and 0.005 m at the X and Y directions, based on the curve capacity and displacement target, the building structure performance level has been able to restrain simulated earthquake forces either at X or Y direction.

Keywords: *pushover, x-bracing, displacement coefficient method, evaluation, SAP2000*