

# **CORRELATION OF SITE CONDITION - BUILDINGS DAMAGES – AND GROUND RUPTURE OF THE 27 MAY 2006 YOGYAKARTA EARTHQUAKE – CENTER JAVA AND MICROZONATION OF THE AREA DAMAGE**

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## **ABSTRACT**

On May 27, 2006 strong earthquake struck Yogyakarta-Center Java. The biggest had a magnitude of 6.3 on the Richter Scale or 7.7 Mw. ( BMG and USGS). and traced its epicenter at Saden Distric, *Kabupaten* Bantul. It was generated by the movement of the Opak Fault Segment of the mélange Cretaceous-Tertiary Fault (Kertapati, 1999) and produced a strike slip ground rupture about  $\pm$  80 km long. It stretches along general N 220-245E direction from *Desa* Parangtritis – Distric Kretek- *Kabupaten* Bantul to *Desa* Prajinan, *Distric* Josonalan, *Kabupaten* Klaten. The sense of horizontal movement is left-lateral. Vibration was widely felt and its intensity varied with local ground conditions.

The predominant periods of the ground were determine from the horizontal-to-vertical (H/V) spectral ratio technique. The area along the Opak River and others underlain by river sediments were found to have long natural periods ranging from 0.4 s – 0.2 s. However, the areas outside the river sediments have shorter predominant periods of less than 0.2 s. The study shows that there is a great possibility of long-period ground-motion/vibration along the river sediments. This may have severe effects on long-period structures, such as high rise buildings.