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**A 3D PUSHOVER ANALYSIS PROCEDURE FOR ESTIMATING  
THE SEISMIC CAPACITY OF PANTI RAPIH HOSPITAL  
YOGYAKARTA**

Final Project Report of  
S-1 International Program

Prepared by :

**DIWAN**  
Student Number : 00 13 09972



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ENGINEERING FACULTY  
DEPARTMENT OF CIVIL ENGINEERING  
S-1 INTERNATIONAL PROGRAM  
SEPTEMBER 2004**

**APPROVAL**

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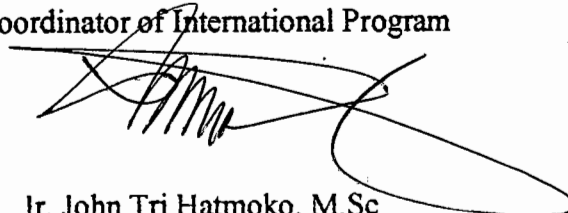
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Ir. John Tri Hatmoko, M.Sc

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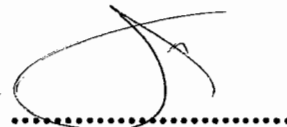
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Yogyakarta, September 2004

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**09972**

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## ABSTRACT

**A 3D PUSHOVER ANALYSIS PROCEDURE FOR ESTIMATING THE SEISMIC CAPACITY OF YOGYAKARTA PANTI RAPIH HOSPITAL, DIWAN, STUDENT NUMBER: 9972, Enrollment: 2000, Major: Structure, Civil Engineering Department, Faculty of Engineering, Atma Jaya Yogyakarta University.**

This paper extends the pushover analysis to take the three dimensional effect into account and assuming the floors act as rigid diaphragms. Based columns pushover hinges are studied in this case. In this analysis, Etabs nonlinear version 7.20 is used for estimating the seismic capacity of seven stories building with shear wall of Panti Rapih Hospital, Yogyakarta.

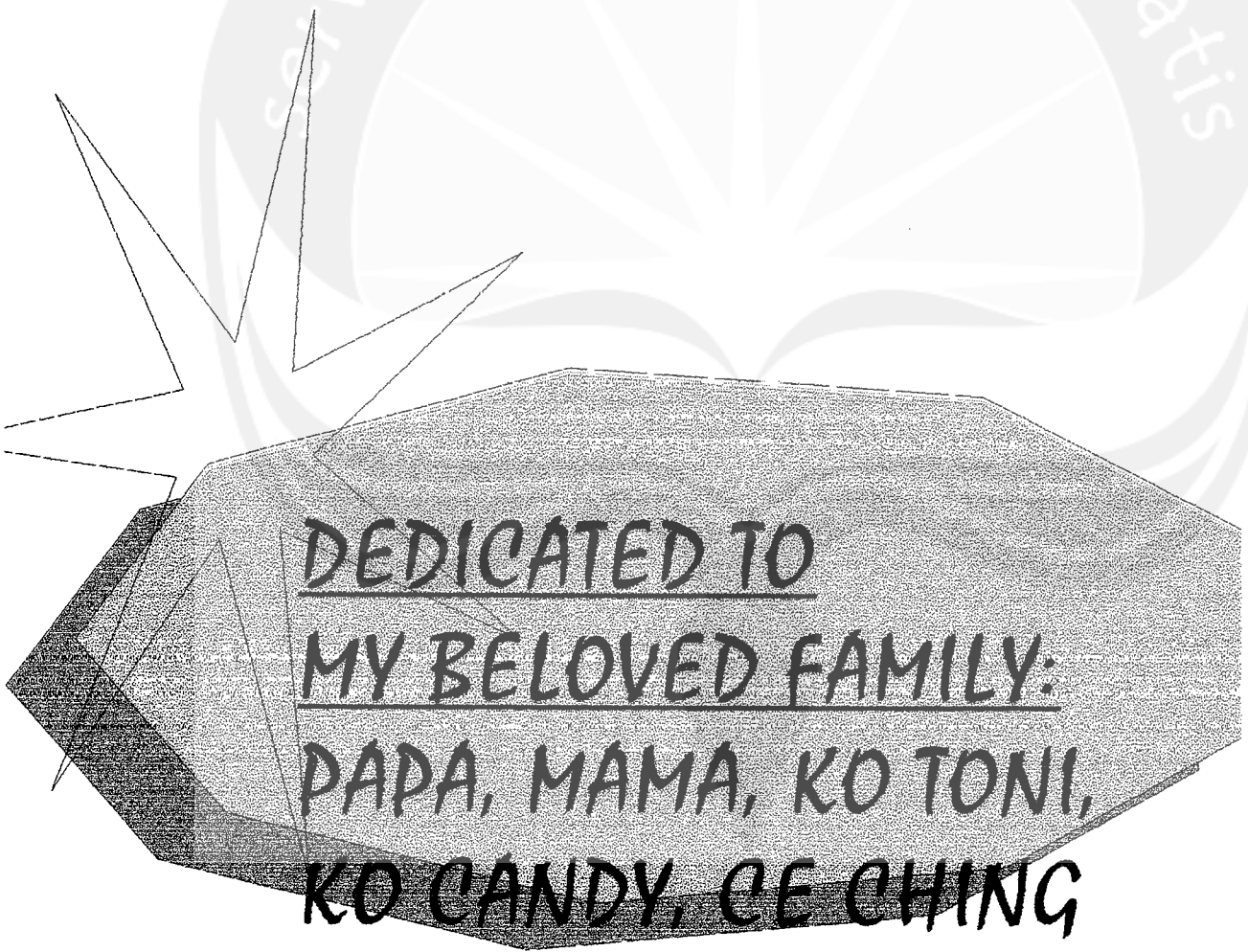
From the original structure of Panti Rapih hospital analysis, it was found that two pushover hinges had taken place before the lateral load was applied to the structure. Due to this condition, this study has redesigned the original structure. From these analyses, the elastic and inelastic stage of the structure can be estimated.

It can be shown that pushover analysis procedure can estimate important response attributes of multistory buildings, such as roof displacement and pushover hinge behaviors.

**Keywords:** multistory building, pushover analysis, pushover hinge, rigid diaphragms, seismic capacity, roof displacement.



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DEDICATED TO  
MY BELOVED FAMILY:  
PAPA, MAMA, KO TONI,  
KO CANDY, CE CHING