STRUCTURAL DESIGN OF CIBUBUR APARTMENT JAKARTA

Final Project

By:

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APPROVAL

Final Project

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has been examined and approved by the examination committee

	Signature	*Date*
Chairperson : Prof. Ir. Yoyong Arfiadi, M.Eng., Ph.D.	.....	April 19, 2011
Member : Dr. Ir. Ade Lisantono, M.Eng.	.....	April 19, 2011
Member : Ir. Junaedi Utomo, M.Eng.	.....	April 19, 2011

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Yogyakarta, May 2, 2011

Advisor,

Prof. Ir. Yoyong Arfiadi, M.Eng., Ph.D.

Department of Civil Engineering
Head,

Ir. Junaedi Utomo, M.Eng.

PREFACE

First and foremost, I would like to thank God for His blessing that has been given to me, so that I could prepare and finish this final project report. This report was arranged, due to finish the S1 degree at Faculty of Engineering, Department of Civil Engineering, Atma Jaya University Yogyakarta.

In this final project, Structural Design of Cibubur Apartment Jakarta, I would like express my appreciation to:

1. Dr. Ir. Ade Lisantono, M.Eng., as the Dean of Engineering Faculty, University of Atma Jaya Yogyakarta.
2. Prof. Ir. Yoyong Arfiadi, M.Eng.,PhD as the advisor of final project who has given guidance during this final project was arranged.
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4. Ir. Junaedi Utomo, M.Eng., as the head of Civil Engineering Department, University of Atma Jaya Yogyakarta.
5. Mas Wiko, as the administration staff of Civil Engineering International Program, University of Atma Jaya Yogyakarta who has given information about the administration requirements.
6. My Family who always supports, praises and gives motivation with unlimited time and conditions
7. All of my friends who have supported and given motivation to the author.

I realized that, this report has some mistakes maybe, but I trust all critics from all of you can make it better. Finally I hope this report could give advantages for the readers.

Yogyakarta, August, 2011

Yohanes Medisa

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ABSTRACT

STRUCTURAL DESIGN OF CIBUBUR APARTMENT JAKARTA, Yohanes Medisa Penta Kharisma, Student Number: 041311910, International Civil Engineering, Atma Jaya Yogyakarta University.

In Structural design safety and economical aspect are very important, therefore some building codes i.e, "*Tata Cara Perhitungan Struktur Beton untuk Gedung*" SNI 03–2847–2002 and "*Tata Cara Perencanaan Ketahanan Gempa untuk Bangunan Gedung*" SNI 03–1726–2002 will be used as references in structural design.

Building which has been designed is 18 stories building where it is located in earthquake zone 3, therefore full ductility as ductility level and Special Moment Resisting Frame system are considered in design. Structural analysis by using ETABS v 9.07. and according to codes as mentioned at above, which the structure itself is modeled as 3 dimensional building.

From structural design result, the entire slab has the thickness 120 mm most of them are designed as two-way slab and some designed as one-way slab with reinforcement bar 10 mm. Stair has the thickness 150 mm, with reinforcement bar 10 mm. Dimension of beam B298 at story 14 is 350x600, longitudinal reinforcement for support area are 6D20 (top reinforcement), 4D20 (bottom reinforcement), longitudinal reinforcement for midspan area are 4D20 (top reinforcement), 4D20 (bottom reinforcement). Dimension of column C38 at story 14 is 600x600 mm, longitudinal reinforcement has 20D20, and transversal reinforcement has P10 – 100.

Keywords: design, special moment resisting frame, reinforcement