DESIGN OF SPECIAL STEEL BEAM TO COLUMN CONNECTION ON THE SHORT SPAN DEEP BEAM (CONSIDERING SHEAR MOMENT INTERACTION)

Final Project

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APRIL 2011

APPROVAL

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has been examined and approved by the examination committee

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Yogyakarta, June 15, 2011

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PREFACE

First and foremost, the author would like to thank Jesus Christ so the author could prepare and finish the final project. The report was arranged to finish the bachelor degree at Faculty of Engineering, Department of Civil of Engineering, University of Atma Jaya Yogyakarta.

The author realize the final project still have many limitations and flaws. However the author always hopes that the final project report might be useful for the readers and the author himself.

The author would like to say thank you for the people that directly or indirectly help to finish this final project, they are:

1. Dr. Ir. Ade Lisantono, M.Eng. as Dean of Engineering Faculty in University of Atma Jaya Yogyakarta.
2. Ir. Y. Lulie, MT. as the Coordinator of Civil Engineering International Program, University of Atma Jaya Yogyakarta.
3. Ir. Junaedi Utomo, M.Eng., as the Head of Civil Engineering Program in the University of Atma Jaya Yogyakarta and advisor who always give advise and time for the author everyday.
4. All Lecturers who have teached the author from the start until finish with very patient when have a discussion with the author.
5. Papa, Mama, and my brother who always give a support and motivation.
6. Aditya Surya who gives the support and suggestion.

7. Stela, Doni, Brian, Ganesh, Agus, みなみ, 泉名, Happy and all other friends who have supported and have given motivation to the author.
8. Mas Wiko, as the administration staff of Civil Engineering International Program, University of Atma Jaya Yogyakarta who has given information about the administration requirements.
9. Dropbox, which help the author to see and read this thesis file everywhere online.
10. All people that I can not mention one by one.

Finally, the author realized that this report has some mistakes, but the author believes all critics from all of you can make it better.

Yogyakarta, April, 2011

Dian Adhitya Chandra

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ABSTRACT

DESIGN OF SPECIAL STEEL BEAM TO COLUMN CONNECTION ON THE SHORT SPAN DEEP BEAM (CONSIDERING SHEAR MOMENT INTERACTION), *prepared by Dian Adhitya Chandra, SN: 07 13 12833, year of 2010, Civil Engineering, Engineering Faculty, University of Atma Jaya Yogyakarta*.

AISC 358-05 gives the provisions for designing the steel beam to column connections. Only the design that is following the provisions of AISC 358-05 requirements can be guaranteed safe by the provisions. Otherwise, more research should be developed.

The research of Murty and Arlekar say about the connections design on short span and deep beam. It means the ratio between length and the depth of the beam less than seven. These designs can't follow the AISC 358-05 beacuse one of the requirement in that provisions is the beam length and depth ratio should seven or greater.

Murty and Arlekar found out that the design of fat beam can result havier connections. The heavier connections mean the connections have overstrength to the moment resistance and under design to the shear resistance. This situation may cause a failure due to the shear strength is high because of the short span of beam.

The study from Murty and Arlekar used the fiber model that result the interaction diagram of shear and moment for W-Shape steel profile. The F_u and F_v affect the interaction. The basic is just using the shear to reduce the moment demand on the connection. If this were success the result of the connection moment resistance will not be over design.

Keywords : Steel Beam to Column Connection, Reduced Beam Section, Moment and Shear Interaction