

**INVESTIGATION OF INTERACTION INFILL WALLS AND RC FRAME IN
ASYMMETRICAL STRUCTURE**

Final Project Report
As one of the requirements to obtain a bachelor's degree from
Universitas Atma Jaya Yogyakarta

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**INTERNATIONAL CIVIL ENGINEERING PROGRAM
ENGINEERING FACULTY
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YOGYAKARTA
January 2020**

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It is the result of my own work and not a result of plagiarism for another people’s work. Ideas, research data, and quotes directly or non-directly derived from writings or ideas of other expressly provided in this final project. If it is proven later that this final project is result of plagiarism, the graduation certificate that I received will be canceled and returned to Universitas Atma Jaya Yogyakarta.

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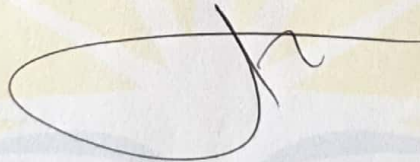
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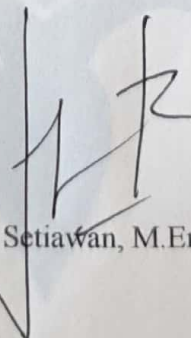


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APPROVAL

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ASYMMETRICAL STRUCTURE






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Finally, I as the writer of this report realized that this report has many mistakes and may have space for further improvement. For that, any suggestion and critics will be accepted. Thank you.

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The Author

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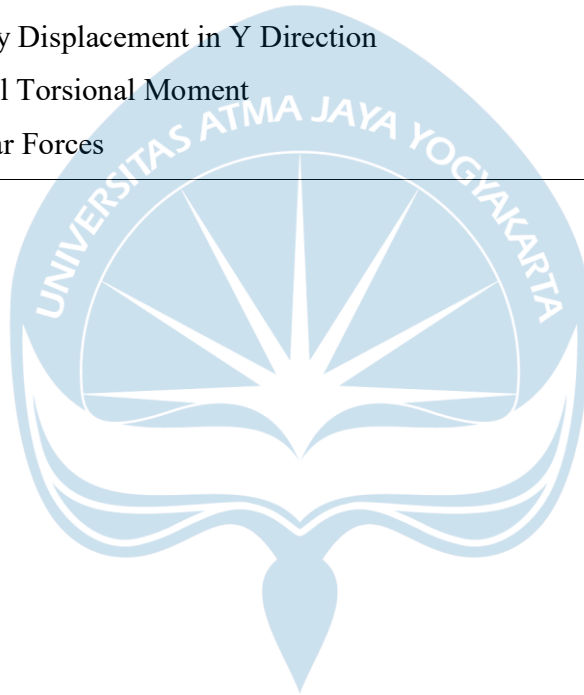
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ABSTRACT

INVESTIGATION OF INTERACTION INFILL WALLS AND RC FRAME IN ASYMMETRICAL STRUCTURE. I Putu Deny Surastika Aditama, Student Number: 151316279, Year 2020, Structure Concentration, International Civil Engineering Program, Faculty of Engineering, Universitas Atma Jaya Yogyakarta.

Constructions in Indonesia has rapidly develop in the decade. There are many building and infrastructure has been built to support the economy situation in Indonesia. This is one of the reason of importance the construction field. Nowadays structure not just square or circle, the structure develop into unique shape. And the calculation process will more complicated. Then, problem main probel of asymmetrical structure is eccentricity.

The eccentricity will caused horizontal torsional moment on the structure. To calculating the center of the mass only required dead and live load. But, calculating the stiffness of the structure depends on the material properties that used. And adding wall will take effect to the shifting of the stiffness on the structure too.

Writer focused to the simulation study to collect the influence of the infill wall by input in 2 conditions; interact and without interaction to the frame. This infill wall added in one corner of the structure. The infill wall that observe are in the asymmetric RC structure with eccentricity and simulated on Seismostruct with nonlinear static analysis (pushover analysis).

The structure that have infill wall interact directly to the frame have 0.002m more displacement in X direction . And in Y direction, it has less displacement in second and third stories. The torsional moment that acting to infill wall without interaction to the frame have 31% more torsional moment in first story, 63% more in second story but it has 36% less in the third story. For the axial forces that acting to the infill wall without interaction to the frame have 14% more axial forces in the first story, 10% more in the second story and 2% more in the third story. The beam moment of the structure that have infill wall interact to the frame have smaller moment compare to structure that have infill wall doesn't interact to the frame.

Key word: asymmetrical structure, infill wall, torsion, pushover analysis