

CHAPTER VII

CONCLUTION AND RECOMMENDATION

7.1 Conclution

After the estimation of the dimensions, the calculation of seismic, structural analysis and calculation of structural elements seven-storey hotel is located in Ring road west street of Yogyakarta, it can be concluded:

1. Plates roof and floor slabs are designed using a plate one-way and two-way. Thick roof plate of 120 mm, with reinforcement of staple P10 - 200 mm and reinforcement shrinkage P8 - 200 mm. Designed with a thick slab of 200 mm, base reinforcement P10 - 200 mm, and shrinkage reinforcement P10 - 300 mm. Shear not necessary because the cross section of the concrete is able to overcome the shear force that happened.
2. IA stairs with a height of 3.5 m using a staple reinforcement D13 - 250 mm on the stairs and landing, for shrinkage reinforcement used P10 - 300 mm.
3. IIA stairs with a height of 3.5 m using a staple reinforcement D13 - 250 mm on the stairs and landing, for shrinkage reinforcement used P10 - 300 mm.
4. IIB stairs with a height of 4 m using a staple reinforcement D13 - 75 mm on the stairs and landing, for shrinkage reinforcement used P10 - 200 mm.
5. IIC stairs with a height of 4 m using a staple reinforcement D13 - 75

mm on the stairs and landing, for shrinkage reinforcement used P10 – 200 mm

6. Beam landing for all types of ladders used dimension 400 x 700 mm², Using longitudinal steel pedestal on 2D22, under 6D22, 4D22 longitudinal reinforcement upper field, under 4D22. Reinforcement transversal 2P10 - 100 mm in the staging area and 2P10 - 200 mm in field.
7. Details column reinforcement planning review

Columns that are reviewed are the middle column on the ground floor with dimensions 800 x 800 mm as follows:

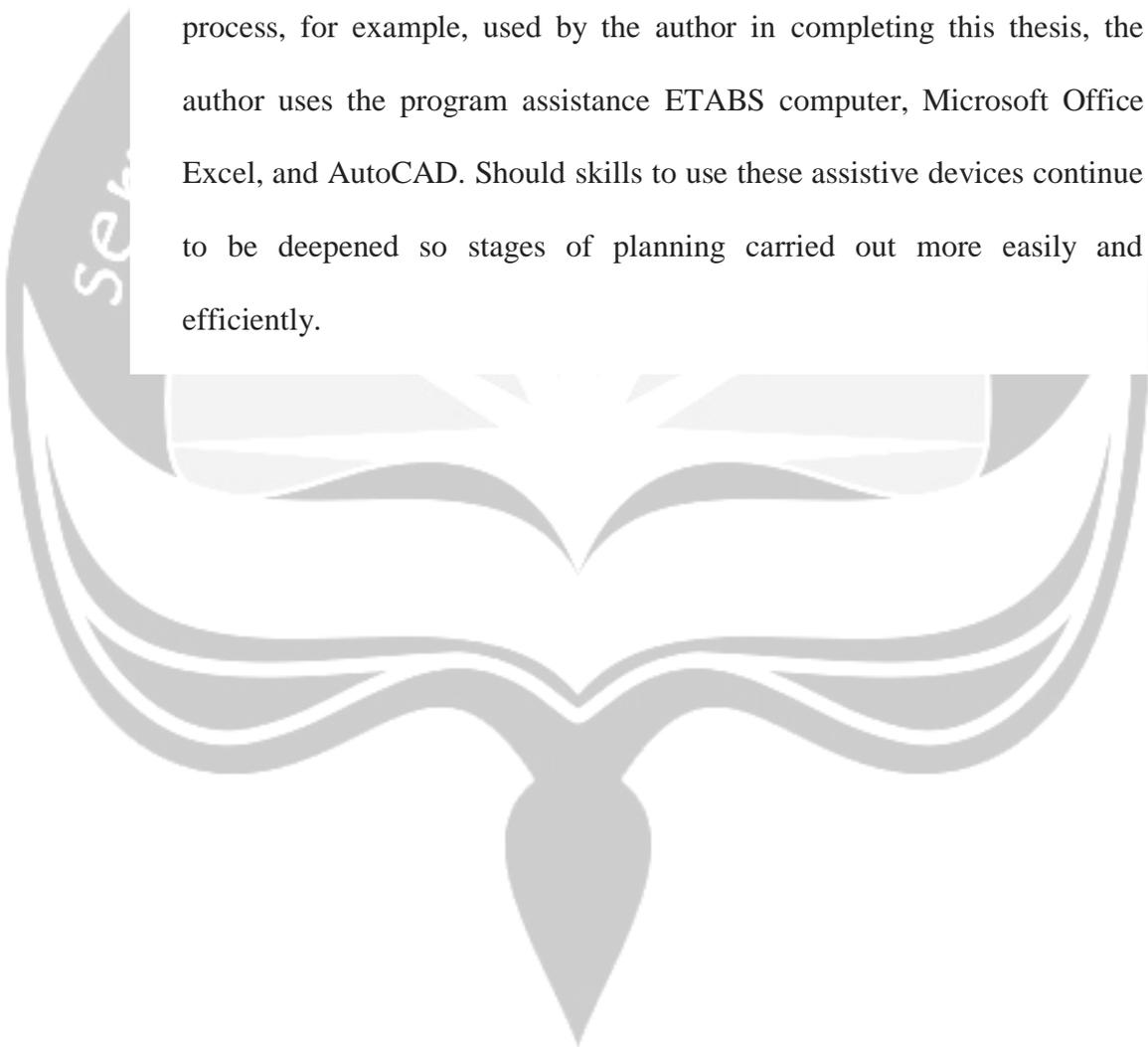
- Longitudinal reinforcement using 24D25 ($A_{st} = 6872.2339 \text{ mm}^2$)
- Transversal reinforcement is calculated by reviewing from 2 directions

7.2 Recommendation

Here are some suggestions that can be given of the outcome of the preparation writer final design of a twin building in Jalan University of Muhammadiyah Yogyakarta, Yogyakarta west ring road:

1. Structure design building of this final project depent on SNI 2847:2013, SNI 1726:2012 and SNI 1727:2013. To get the safe structure of building.
2. In doing the analysis of the structure, there are several programs that aid to facilitate the calculation process such as ETABS and PCA COL. Learning with the development of the existing technology, but still controls basic planning.

3. Determining the type and estimation of the dimensions of each element structure, Determination particular type and dimensions of the beam should not only Long attention span beams on Structures, but Also The attention to layout and load borne by any type of beam).
4. In carrying out the structural design of a building, known to exist several tools that can be used both in the analysis process as well as the drawing process, for example, used by the author in completing this thesis, the author uses the program assistance ETABS computer, Microsoft Office Excel, and AutoCAD. Should skills to use these assistive devices continue to be deepened so stages of planning carried out more easily and efficiently.



REFERENCES

- ACI 318M-11. *Building code requirement for structural concrete*.
- American Society of Civil Engineers 7-10 (ASCE). *seismic loads for building and other building*.
- American Society of Civil Engineers 7-10 (ASCE). *seismic loads*.
- Arfiadi, Y., 2005. *Lecture Notes On Reinforce Concrete Structure II*, FT UAJY.
- Badan Standarisasi Nasional, 2012, *Tata Cara Perencanaan Ketahanan Gempa untuk struktur bangunan gedung dan non gedung*, SNI 1726-2012, Yayasan LPMB, Bandung.
- Badan Standarisasi Nasional, 2013, *Persyaratan beton struktural untuk bangunan gedung*, SNI 2847-2013, Yayasan LPMB, Bandung.
- Frederick S. Merritt (1968). *Building design and construction handbook*. Amazon.com
- [http://kampuzsipil.blogspot.co.id/2011/11/pembebanan-pada-struktur bangunan](http://kampuzsipil.blogspot.co.id/2011/11/pembebanan-pada-struktur-bangunan.html). Html (diakses pada 24 Feb 17 pk 18.10)
- [http://oneeightytwocivil.blogspot.co.id/2011/03/sistem-pelat-lantai-struktur beton-ii.html](http://oneeightytwocivil.blogspot.co.id/2011/03/sistem-pelat-lantai-struktur-beton-ii.html) (diakses pada April 6, 2017, pukul 15:50)
- http://share.its.ac.id/pluginfile.php/39081/mod_label/intro/6.4%20Penulangan%20Pelat.pdf (diakses pada April 6, 2017: 15:54)
- <http://ocw.upj.ac.id/files/Slide-TSP407-Struktur-Beton-Lanjutan-TSP-407-P2.pdf>
- Imran, I., & Hendrik, F. (2010). *Perencanaan Struktur Beton Bertulang Tahan Gempa*. Penerbit ITB. Bandung.
- Mosley, W.H., & Bungey, J. H. (1987). *Perencanaan Beton Bertulang* (3ed.). (Iwan Gunawan, Ed.) Jakarta: Erlangga.
- Nasution, A. 2009. *Analisis dan Desain Struktur Beton Bertulang*. Penerbit ITB. Bandung.
- Nawy, Edward G (1990). *Reinforcement Concrete A Fundamental Approach*. Upper Saddle River. New Jersey.
- Sudarmoko (1996). *Perencanaan dan Analisis Kolom Beton Bertulang*. Biro Penerbit, Yogyakarta