CHAPTER VI

Conclusion

6.1 Conclusion

The design calculation has finished with diaphragm analysis, the earthquake analyzed for the building by response spectrum. The conclusion describes bellows:

1. According to the site data of shop drawings, the building system is dual system that consist of:
    a. Frame system
    b. Shear wall system

2. Building structure of 23 stories with dual system has fulfil the requirement of the lateral force resisting system from SNI 1726:2012.

3. Whole building elements are designed as reinforced concrete such as girder, beam, column, slab, stairs and shear wall by following SNI 2847:2013 and SNI 1729:2015.

4. Diaphragm analysis for podium, on the 3rd and 4th floor, so we can get the chord and collector 2D10 for both direction (x and y) and both floors.

5. The requirement of dual system is the frame has to carried out at least 25% of the earthquake or story drift. The x direction result is 81,418 % of shear wall and 18,582 % of Frame. The other side of y-direction 49,535% of shear wall and 50,465% of the frame. Design has to be checked again or redesigned.

6.2 Suggestion

1. Building structure shall tall enough to redesign or analysis of the final project so, the student will learn a lot and better.

2. The building software shall up to date, because after graduate we will working for a modern era. Learning another new software will give a lot of benefits.

3. Designing the modelling carefully on the software, and input one by one of the earthquake requirement and then there will be no missing piece.

Bunglae. S. Taranath, 2006*, Reinforced Concrete Design of Tall Building* CRC Press.

M. Ali and P.J Armstrong, 2006 *, Integration of Tall Building System,* University of Illinois.

Sarkisian, E. long and W. Hassan, 2013,*Performance-Based Engineering of Core Wall Tall Buildings* ASCE Structure Congress.

CTBUH.org (Council on Tall Building and Urban Habitat), 2020. Heoght Criteria.

Belzega, João, 2015. Coupling Beams of Shear Walls Instituto Superior Técnico – Universidade de Lisboa, Av. Rovisco Pai

Arfiadi, Y., 2016, D*iagram Interaksi Perancangan Kolom Dengan Tulangan Pada Empat Sisi Accordance to SNI 2847:2013 dan ACI 318M-11*, UAJY, Yogyakarta.

Purwono, Rachmat., 2010. *Perencanaan Struktur Beton Bertulang Tahan Gempa.* ITS, Surabaya.

Badan Standarisasi Nasional, (2012). *Tata Cara Perencanaan Ketahanan Gempa untuk Bangunan Gedung.* SNI 1726-2012: Jakarta.

Badan Standarisasi Nasional, (2013). *Beban Minimum untuk Perancangan Bangunan Gedung dan Struktur Lain*. SNI 1727-2013: Jakarta.

Badan Standarisasi Nasional, (2013). *Tata Cara Perencanaan Struktur Beton Untuk Bangunan Gedung*. SNI 1726-2012: Jakarta.

Departemen Pekerjaan Umum, Indonesia Spectrum Design 2011, puskim.pu.go.id

FEMA 1051 (2016)*, NEHRP Recmmended Seismic Provisions:Design Examples*, Federal Emergency Management Agency. Washington, D.C.

REFRENCES

Wicaksono, Sandy. 2019, *Perancangan Struktur Atas Gedung Perkantoran Jakarta Tower*
Box dengan Analisa Diafragma, Final Project UAJY, Yogyakarta.

Renard, Yonathan . 2017, *Perancangan Strutur Gedung 90 Lantai Dengan Outrigger dan*
*Belt Truss Di Surabaya.*Final Project ITB, Bandung.

Putra, Wisnu, 2012. *Perancangan Bangunan Tinggi dan Struktur Beton Prategang*
Perancangan Bangunan Perkantoran Jakarta, Final Project. UI, Jakarta.