

Dalam struktur bangunan beton bertulang, ada beberapa pilihan untuk memperkuat struktur terhadap gaya lateral seperti gempa, antara lain portal penahan momen, *shear wall*, dan rangka pengkaku diagonal (*bracing*). Pada bangunan gedung pencakar langit, biasanya gedung dengan dinding geser juga dilengkapi dengan sistem *outrigger truss* yang berfungsi untuk menambah kekakuan struktur.

Penelitian ini menggunakan studi kasus gedung Apartemen 1 St. Moritz Makassar, Panakukkang yang menggunakan SRPMK dinding geser dan *outrigger truss*. Penelitian ini dilakukan untuk menganalisa jikalau struktur gedung mampu menahan gaya lateral tanpa *outrigger truss*, dan untuk mendesain tulangan dan dimensi yang optimal dari komponen struktur gedung Apartemen 1 St. Moritz Makassar tersebut.

Hasil analisa yang dibantu dengan *software* SAP2000 menunjukkan bahwa struktur hasil perancangan ulang (tanpa *outrigger truss*) memiliki nominal parameter respon struktur yang lebih besar dari struktur eksisting (dengan *outrigger truss*), nilai *base shear*, *displacement*, dan sebagai parameter respon struktur dari struktur hasil rancang ulang berturut-turut 0,324% dan 0,484% (*base shear* arah x dan y); 7,02% dan 3,22% (*displacement* arah x dan y). Sementara nilai *story drift* dari struktur hasil perancangan ulang cenderung lebih besar dari struktur eksisting. Meskipun hasil analisa menunjukkan perbedaan nilai antara keduanya, hasil pemeriksaan dengan batas simpangan sesuai SNI 1726:2019 menunjukkan bahwa struktur hasil perancangan ulang AMAN untuk digunakan.

**Kata kunci:** dinding geser, beton bertulang, tulangan, SAP2000

In reinforced concrete building structures, there are several options for strengthening the structure against lateral forces such as earthquakes, including moment resisting portals, shear walls, and diagonal stiffening frames (bracing). In skyscraper buildings, usually buildings with shear walls are also equipped with an outrigger truss system which functions to increase the stiffness of the structure.

This research uses a case study of the Apartment 1 St. Moritz Makassar, Panakukkang which uses SRPMK shear walls and truss outriggers. This research was conducted to analyze whether the building structure is able to withstand lateral forces without truss outriggers, and to design optimal reinforcement and dimensions of the structural components of the Apartments 1 St. Moritz Makassar.

The results of the analysis assisted by SAP2000 software show that the structure resulting from the redesign (without outrigger truss) has nominal structural response parameters that are greater than the existing structure (with outrigger truss), the value of base shear, displacement, and as a structural response parameter of the designed structure return respectively 0.324% and 0.484% (base shear in x and y directions); 7.02% and 3.22% (displacement in x and y direction). Meanwhile, the story drift value of the redesigned structure tends to be greater than the existing structure. Even though the analysis results show differences in values between the two, the results of examination with deviation limits according to SNI 1726:2019 show that the structure resulting from the redesign is SAFE to use.

**Key words:** shear walls, reinforced concrete, reinforcement, SAP2000