

# Studi perancangan bangunan penyelamat terhadap Gempa dan Tsunami di Aceh = study of escape building design to Earthquake and Tsunami in Aceh / Mirna Fauziah

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## Abstrak

[<b>ABSTRAK</b><br>

Bangunan penyelamat atau yang biasa dikenal dengan escape building dalam penggunaan sehari-hari dapat diperuntukkan sebagai fasilitas umum seperti perkantoran ataupun ruang serbaguna, namun pada saat terjadi bencana gempa dan tsunami maka bangunan ini dapat digunakan sebagai tempat perlindungan sehingga harus dilengkapi dengan kemudahan jalan masuk yang memadai seperti ramp dan tangga. Struktur bangunan penyelamat ini berdasarkan FEMA P646 harus memiliki sistem yang kuat untuk menahan gaya yang ekstrim, sistem terbuka yang dapat mengalirkan air dengan sedikit tahanan, sistem daktail yang menahan gaya yang ekstrim tanpa hancur, dan sistem tak tentu yang dapat mengalami kegagalan parsial tanpa keruntuhan progresif. Bangunan penyelamat berlokasi pada wilayah Banda Aceh dengan kondisi tanah lunak (SE) sehingga didapat Sds 1,05 dan Sd1 0,217. Beban tsunami yang digunakan adalah gaya hidrodinamik, puing (debris impact), dan angkat (uplift). Gaya yang lebih dominan berpengaruh terhadap struktur adalah akibat gaya gempa dibandingkan tsunami yang dapat terlihat dari besaran nilai momen dan shear check;

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<b>ABSTRACT</b><br>

Building a savior or commonly known as escape building in daily use can be designated as public facilities such as office or utility room, but in the event of earthquake and tsunami is building can be used as a sanctuary and should be equipped with adequate ease of access such as ramps and stairs. Building structure is based on FEMA P646 rescuer must have robust systems to withstand extreme forces, an open system that can drain the water with little resistance, ductile systems that withstand extreme forces without destroyed, and the indeterminate system that can undergo a partial failure without progressive collapse . Rescue building located at the Banda Aceh area with soft soil conditions (SE) to obtain SdS 1.05 and Sd1 0.217. Tsunami load used is the hydrodynamic force, debris (debris impact), and lift (uplift). Style that is more dominant effect on the structure is due to the tsunami earthquake forces than can be seen from the magnitude of the moment and shear check, Building a savior or commonly known as escape building in daily use can be designated as public facilities such as office or utility room, but in the event of earthquake and tsunami is building can be used as a sanctuary and should be equipped with adequate ease of access such as ramps and stairs. Building structure is based on FEMA P646 rescuer must have robust systems to withstand extreme forces, an open system that can drain the water with little resistance, ductile systems that withstand extreme forces without destroyed, and the indeterminate system that can undergo a partial failure without progressive collapse . Rescue building located at the Banda Aceh area with soft soil

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