

Signature Tower

Jakarta, Indonesia

Owner

PT Grahamas Adisentosa

Architect

Smallwood, Reynolds, Stewart, Stewart & Associates, Inc.

MEP Engineer

Beca Engineering

Completion Date

2017

Total Area

593,000 m²

Total Heights

638 m

Number of Stories

111



Thornton Tomasetti is providing structural engineering services for a 111-story, 638-meter mixed-use tower that will be the tallest building in southeast Asia when completed. Located on lots six and seven of the Sudirman Central Business District (SCBD) in Jakarta, Indonesia, the project has an observatory at the top level, 25 levels of hotel space, 24 levels of residential, 50 levels of office space, 10 levels of retail podium that includes a conference center, a ballroom and restaurants, and six levels of basement parking and provides a total area of 593,000 square meters.

The building is located within one of the most active seismic zone in the world. Classified as Seismic Design Category D, Signature Tower presents great challenges to engineers because of high seismic reactions and extremely soft soil conditions. The primary lateral system used includes a composite core wall, composite super columns and steel outrigger trusses. The exterior mega frame includes nine steel belt trusses, six steel floor trusses and additional composite super columns that accommodate the specific requirements of the high seismic zone. Performance-based design was used to evaluate the building performance under different levels of seismic hazard, in addition to the traditional code-based design, in order to achieve an efficient and safe structure.