

Wuhan Greenland Center

Wuhan, China

Owner

Greenland Group

Client/Architect

Adrian Smith + Gordon Gill Architecture

Completion Date

2017

Construction Cost

\$4.5 billion

Total Area

323,280 m²

Number of Stories

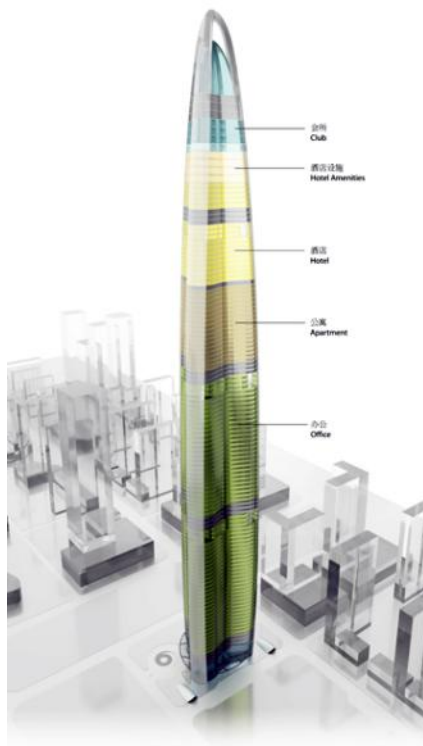
125

Height

600+ m



Adrian Smith + Gordon Gill Architecture



Thornton Tomasetti is providing structural design services for the Wuhan Greenland Center. The 125-story tower will consist of 202,000 square meters of office space, 60,000 square meters of luxury apartments and a 61,000-square-meter five-star hotel. The 600-meter-plus mixed-use structure will be the third tallest building in China and the fourth tallest in the world.

The structural system will consist of a composite concrete core with locally embedded steel plates, a combination that increases strength and enhances ductility. Outrigger trusses, as well as belt trusses will be placed at the mechanical levels, which will connect to the core or super columns. The floor system will be composite structure, consisting of concrete slab, metal deck and steel beam. This structural system is very popular, particularly in East Asia where concrete prices are much cheaper than steel. A composite column with embedded steel provides strength and ductility, and the composite floor system accelerates the construction process.

To reduce wind resistance and vortices action that builds up around super tall towers, the building will feature a tapered body and a domed top. A tapered structure reduces the forces at the top of the building, which results in reducing the overall wind forces and overturning moments.