

# Burj Khalifa

Dubai, United Arab Emirates

Burj Khalifa is a record-breaking building in Dubai, UAE. At 828m (2717ft) in height, not only is it the world's tallest building but it is also the tallest free-standing structure on earth. The Y-shaped tripartite floor geometry optimizes residential and hotel space and its buttressed central core lateral system supports the height of the building. The buttressed core is a reflection of understanding load flow, efficiency, construction methods, and materials. It utilizes conventional materials and the latest construction methods, to strategically locate structure so as to maximize its use in resisting lateral loads. The result is a very efficient and well behaving structure, which responds well to wind, gravity, constructability, and also function. The Tower has been shaped with respect to its primary influence – wind. One module of each wing sets back in a spiraling motion as the Tower increases in height, creating 24 different floor plates to help disorganize wind vortex shedding and 'confuse' the wind. Over 70 wind tunnel tests were performed to help shape the Tower and tune the structure.

***Jim Pawlikowski served as one of the lead senior engineers during his tenure at SOM.***

