



■ Commercial Buildings



Reference Details:

Owner Keppel Land / Cheung Kong (Holdings) Limited / Hongkong Land Limited, Singapore +++ **General Contractor** Obayashi Corporation Pte Ltd, Singapore Office +++ **Engineer** Meinhardt (Singapore) Pte Ltd., Singapore

DSI Unit UTRACO Structural Systems Pte Ltd., Singapore
DSI Scope Supply and Installation of DYWIDAG Post-Tensioning Tendons



DYWIDAG Post-Tensioning Tendons secure new Office Tower at Singapore's Center

"One Raffles Quay" Prime Office Building, Marina Bay, Singapore

A new office-building complex was built at Raffles Quay in Singapore. This complex - One Raffles Quay - is located at the center of Singapore's extended business and financial district. Due to its central position, the building will also accommodate general infrastructure facilities such as an underground airconditioned retail link leading to Raffles Place MRT station, a hub car park and a district cooling system plant.

DYWIDAG Post-Tensioning Tendons secure new Office Tower at Singapore's Center "One Raffles Quay" Prime Office Building, Marina Bay, Singapore This landmark development consists of two towers, a 50 story North Tower and a 29 story South Tower. Both towers are linked by a roofed lobby structure featuring fountains and seats.

Due to the high foundation cost associated with the heavy self weight of floor slabs for ultra high rise buildings, the 50 story North Tower was designed as a composite steel structure.

However, for the column free floor plate of the lower South Tower, a post-tensioned design proved to be more economical. Here, post-tensioned beams span 19.5 m from the central core wall into the perimeter columns, with the maximum height being kept at 900 mm. Those beams were post-tensioned with a combination of 12x0.6" and 19x0.6" DYWIDAG Post-Tensioning Tendons with MA anchorages

The centralized cooling system, located in the basement, is large enough to supply cool air to adjacent buildings. The cold water required for operating the cooling system is stored in numerous post-tensioned concrete water tanks built around the basement columns. Both the tanks' 600 mm thick base slab and the 475 mm thick, 12.5 m high walls were post-tensioned using flat DYWIDAG Post-Tensioning Tendons. Post-Tensioning tie beams spanning across the tanks are used to stiffen the otherwise cantilever walls of the tanks. Utraco Structural Systems Pte Ltd., DSI's licensee in Singapore, supplied the DYWIDAG Post-Tensioning Tendons and carried out all post-tensioning operations as a specialist subcontractor.