



## QUAY 7, V & A WATERFRONT

Cape Town, South Africa



### Project Facts

#### Product

Temporary Cased Auger Piles,  
Lateral Support

#### Market

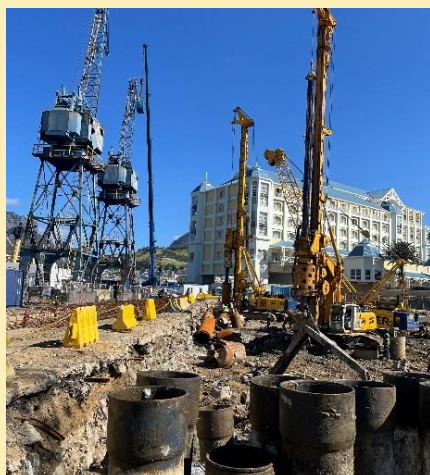
Commercial

#### Client

V&A Waterfront Holdings

#### Consultant/Engineers

Pile design by Franki and Structural  
design by Arup



- **About the project**

Franki was appointed to execute foundational works at the Quay 7 site in Cape Town's V&A Waterfront, beginning on 25 March. The scope included the demolition of an old fish factory and concrete surface beds, bulk excavation to a depth of 3 m (+1.0 m MSL), the installation of 112 temporary cased auger piles (1050 mm and 1350 mm diameters), and the installation of 47 lateral support piles with capping beams and gunite.

The site was uniquely positioned between three sensitive boundaries: 80 m from the breakwater adjacent Breakwater Boulevard, 15 m from the quayside along Victoria Basin, and 30 m from a luxury hotel. Groundwater levels fluctuated with the tide due to permeable reclamation fill, requiring careful platform level selection to balance drilling depth and concrete volumes with a sound piling platform located just above the water table elevation at high tide.

#### Challenges

The site was underlain by layers of reclamation material with boulders, natural clays/sands, and bedrock at depths ranging from -22 m to -32 m MSL. Drilling into bedrock was slow, with production rates as low as 10 hours per meter. Significant concrete losses occurred in the boulder-rich fill layer.

The southeastern boundary of the site bordered onto an old quay wall with a steeply angled face and a deep foundation (16 m below street level) which obstructed pile installation on the southeastern gridline. Excavation through this structure required a combination of mechanical breakers, chisels, and oscillators.



Night shifts were initially used to accelerate progress and avoid ready-mix supply delays caused by traffic congestion and competing contractors. However, complaints from the adjacent hotel forced termination of night work. Winter rains further slowed production.

### Solution

Excavation was staged with mechanical breakers and chisels to key into the old quay wall so that drilling could commence from a horizontal surface. Pile installation through the quay wall was achieved using a powerful oscillator to advance and retrieve casing and maintain verticality.

A skeleton crew worked night shifts to prepare piles for early morning concrete pours, bypassing supply bottlenecks. After night work was halted, extended day shifts and dual casing sets allowed continuous drilling and minimized downtime.

Two strings of temporary casing per pile diameter enabled parallel operations, reclaiming up to 25% of lost production time. Despite weather and scheduling setbacks, the project was completed two months ahead of the contractual deadline.