

# LOADTEST

## O-Cell<sup>®</sup> Technology in Barrettes



*O-cells are installed within the barrette reinforcement*



*Test in progress: Instrumentation is installed throughout the barrette section and length*



*O-cells ideally suited for close quarters*



*Cage Placement with O-Cells*

The world of foundation load testing presents many challenges and full scale testing of barrettes has, until recently, been one of the hardest to overcome.

Loadtest's experience on several barrette projects has pushed development of an efficient, cost-effective method for full scale static load testing of barrettes utilizing the patented bi-directional O-cell testing method.

On a recent project in Singapore, a barrette 9 ft. x 3 ft. section was load tested. Installed to a depth of 164 ft. into very hard siltstone, two 34 in. diameter O-cells placed 23 ft. from the barrette tip. The combined side-shear and end bearing mobilized during the load test was approximately 11,200 tons.

Barrettes are often used as a load bearing foundation element capable of supporting very high loads. Full scale static loading from the top has often been impossible to conduct on barrettes. Large loads and deep foundations are not a problem with bi-directional testing and the arrangement of the O-cells can be selected to evenly distribute the load across a specific plane of the barrette making it possible to measure load distribution for specific strata or foundation levels. Instrumentation may be installed which can also allow the stress distribution throughout the barrette to be determined.

The O-cell method also makes it possible to test the barrette when the concrete level is far below construction level. Should the concrete of the barrettes be terminated at basement level, testing can take place from this predetermined elevation prior to excavation.

Foundation design depths can be optimized as required based on results achieved long before construction starts in earnest. The financial savings that may result from full scale load testing is usually substantial.

