



# PWC Foundation Realignment

Project	PWC Foundation Realignment
Client	Fletcher Construction Ltd
Location	Auckland City, New Zealand
Brief	Cut / Realign oversized foundation

When construction of the new tower block for PWC in Auckland commenced, it was found that a large wedge of concrete some 50m long, 3m high and up to 1.2m wide protruded from the adjacent site hindering the new foundations. The wedge formed the outer wall of the neighbours basement carpark and if left in place would seriously reduce parking as well as the form of the new tower.

Initial efforts to break off the offending piece created unacceptable levels of noise and vibration as well as possible damage to the remaining wall. At this stage the foundation works were grinding to a halt.

**Lowery were asked for a solution and given the tolerances within which to work.**

The underside of the wedge had been dug away and there was a gap of around 1.2 m high below in which to work across the width of the site. A line was surveyed along

the underside on the boundary. At points 1.5m apart, 40mm diameter holes were drilled vertically upward 3m until they penetrated the wedge. Diamond wire was

then threaded up and across to the next and then down the hole, both ends were passed through a wire saw and joined to form a loop. Before cutting started, two dowel holes were drilled through the offcut to prevent movement at the completion of the cut. As cutting progressed past the dowel holes, steel dowels were inserted and the cut finished. When each section was cut, an excavator would peel the 3 tonne piece off and the procedure repeated.

The diamond wire used was run at a speed of up to 25 m/sec so it was important that no one be close in the event of a breakage. To minimize risk the saw is remotely operated and the working area barricaded off, all operators are trained on the specifics of each machine they use through our in house seminars and on the job working with other skilled workers.

The wire sawing machine used was one of our Hydrostress DS-WS 15 machines. These saws are Austrian and utilize the latest in motor speed controls, have water cooled 3 phase synchronous drive motors and pneumatic tensioning for the wire. Despite less than ideal conditions the job was completed in 2 weeks. Accuracy exceeded the design specification and the tower was able to be built to the original design.