

TIMBER POLE DEEP PILE FOUNDATION AND RETAINING WALLS



New residential townhouse development, Manurewa, Auckland, NZ

Foundations and retaining walls were required for a new residential development of two and three storey townhouses in Manurewa, Auckland.

TIMBER POLE DEEP PILE FOUNDATION

Project background: New residential townhouse development, Manurewa, Auckland, NZ

- 40 new two and three storey townhouses were to be built.
- Foundations and retaining walls were required.
- The project was completed in 2018.

Project challenge:

- The townhouses were to be built in close proximity to existing services.
- The foundation solution for each townhouse needed to support a 150mm thick concrete slab.
- The ground conditions were soft, with uncertified fill.
- Existing services were within 1.0m of where the piles were being installed.
- The site was located close to a school so noise restrictions were in place.
- Piles had to be installed close to adjacent properties, but installation was not allowed to impact on these neighbouring properties.
- Installation needed to be rapid.
- Unloading and handling needed to be easy.
- H5 treated Radiata Pine timber poles were determined as the best solution.

The NZ Ground Control solution:

- MultiPole SED poles, 1.8 to 3.0m x 175 and 250mm, 270 pieces, were used for the Retaining Walls.
- MultiPole Uglie poles, 3.6 to 6.0m x 175 and 250mm, 900 pieces, were used for the Deep Pile Foundations.
- MultiPoles are incredibly versatile timber poles with a unique hollow core.
- MultiPole SED poles are naturally tapered, machine-peeled poles. Minimal wood is removed during processing so each pole retains its strength.
- MultiPole Uglie poles are similar to SED poles but are debarked rather than peeled. They offer greater skin friction when used as piles and are stronger than SED poles.
- The unique hollow core of the MultiPole allowed for fast installation via high-frequency vibration. This method of installation resulted in minimal disturbance to the neighbouring properties and no pre-drilling was required.
- The piles were installed under the load bearing walls approximately 1.5m apart.
- The MultiPoles were installed to a minimum set as calculated using the Hiley Formula.

