TIMBER POLE
RAFT FOUNDATION

Foundation for a residential dwelling extension, Christchurch, NZ

For a difficult to access site susceptible to significant geotechnical hazards a Raft Foundation was the perfect solution.

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Project background: Foundation for a residential extension, Christchurch, NZ

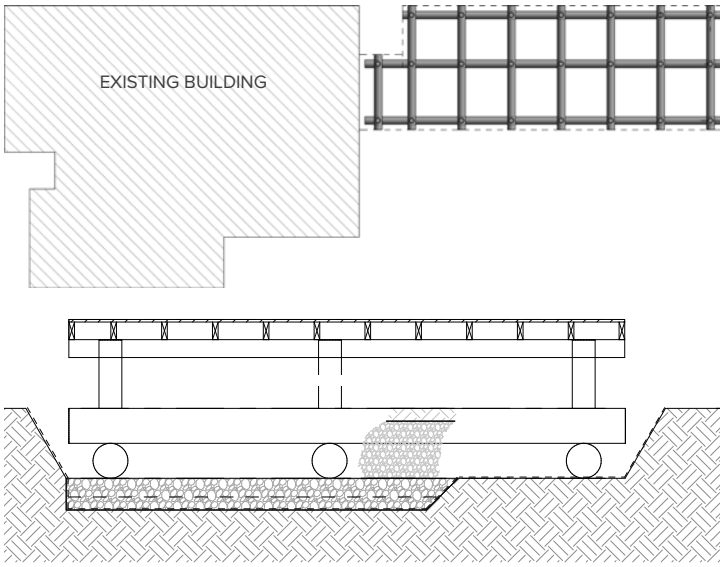
- A new foundation was required for a 60m^2 extension located at the rear of an existing property.
- The residential extension needed to be able to withstand any future seismic events.
- The project was installed in 2020.

Project challenge:

- The original geotechnical report indicated the site was susceptible to significant geotechnical hazards including very low ultimate bearing capacity over shallow depths.
- The client had been recommended screw piles down to 9.0m below ground – an option that was expensive and involved large installation equipment.
- The client required an economically alternative solution to the screw pile option they had been offered, with equipment that could easily access the rear site.
- The site was located in an urban location in close proximity to neighbouring properties.
- Installation was not allowed to have any impact on these neighbouring properties.
- The foundation solution needed to be installed at the rear of an existing dwelling.
- Site access was down the side of the existing dwelling so equipment with a small footprint was required.
- Working space was limited so unloading and handling of materials and equipment needed to be easy.

The NZ Ground Control solution:

- NZGC engaged a geotechnical engineer to investigate the site's suitability for alternative foundation options.
- A Raft Foundation was identified as being a suitable foundation solution.
- NZGC provided the client with a structural foundation design that was both economical and able to be installed with equipment that could easily access the rear site.
- The site was excavated and prepared by a small 5 tonne excavator ready for installation of the Raft Foundation.
- Raft Foundation components were delivered to site, then purpose-built equipment was used to assemble and complete the Raft Foundation on site.
- The unique hollow core of the MultiPole means the product is lighter than traditional solid roundwood or steel products. This allowed for easier handling and installation in the restricted access of the rear site.
- Installation was rapidly completed within 5 working days.
- Installation was successfully carried out without disturbing the neighbouring properties.
- The Raft Foundation solution cost approximately one-third of the price of the screw pile option the client had been offered.



Timber Pole Raft Foundation floor plan and cross section

GROUND CONTROL

• PO Box 99, Tuakau 2342 New Zealand | 0800 115 323 | nzgc.co.nz