

Technical category 3 foundation options

If you need to rebuild or replace the foundations of your technical category 3 house, we recommend three types of foundation: Deep piles, site ground improvements, or surface structures with shallow foundations.

Published on 1 February 2013

1st edition

Of interest to Homeowners

Chartered professional engineers will advise you on the most appropriate foundation type for each property based on geotechnical information.

Deep piles

Deep piles are already widely used in parts of Christchurch in peaty areas or areas where there is soft ground. Deep piles can go down as far as 20 metres but you would hope to find a solid layer of gravel at 12 to 15 metres. Geotechnical information will be crucial to ascertain the extent of stable ground.



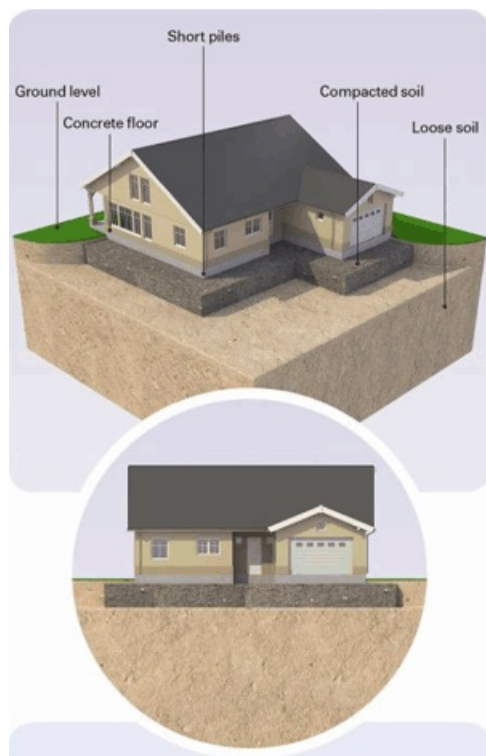
Deep piles

Loose soil (gradual densification of soil layers) to solid being layer

Site ground improvements

Site ground improvement options aim to strengthen the land, using a variety of methods, to create a better building platform.

This typically involves treating the land beneath the house by either compacting the land to make it denser, or stabilising the land by adding cement. Once the land is suitably strengthened and has a more effective crust, standard TC2 foundations can be used.



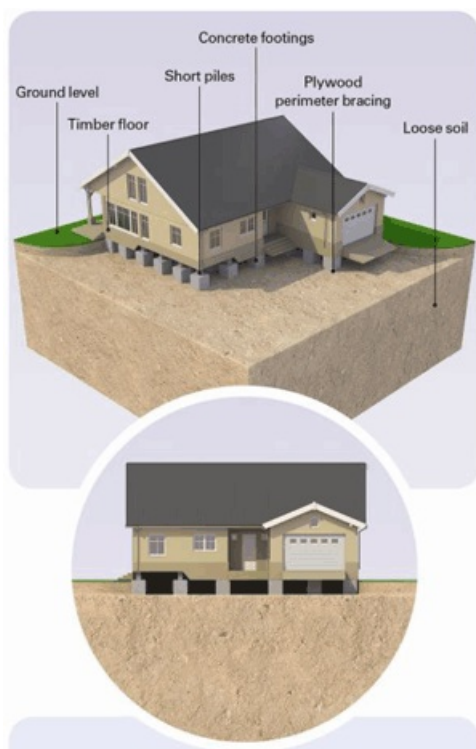
Ground improvements

Compacted layer of strengthened soil

Surface structures with shallow foundations

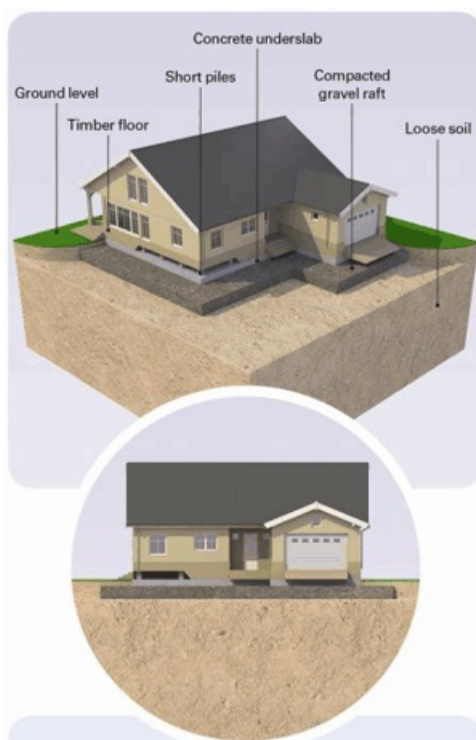
A shallow pile option may be appropriate for lighter-weight homes with standard timber floors and simple floor plans on sites where there is no evidence of significant lateral spreading.

One example is constructing a timber floor on shallow or short piles and wrapping the perimeter foundation with plywood sheeting to provide bracing against earthquake shaking and minor ground.



Light-weight re-levellable platform

Another example is the 'raft' foundation method. This method of concrete floor construction sits 'on' the ground not 'in' the ground making it seismically more resilient.



Light-weight platform with understab

All guidance related to Canterbury rebuild (<https://www.building.govt.nz/building-code-compliance/canterbury-rebuild/>)

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