



Stati-CAL Ltd.

PROVIDING QUADRABUILD SOLUTIONS

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QUADRAPILE

Installation near Trees



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Introduction

This document should be read in conjunction with the QuadraPile Technical and Testing Report which gives further details on the materials, design principals, installation and testing of the QuadraPile system. The purpose of this document is to show the benefits of the QuadraPile system when foundations are required in close proximity to trees including within the root structure of large specimens.

The QuadraPile System

Each section of QuadraPile consists of a helical form with the cross sectional area having four fins with an overall diameter of 100mm. Each section is either 500mm or 1000mm in length and can be joined to form longer lengths as required. The system can be used to provide foundations for new structures as well as for remedial work to existing buildings.



The small size of the driving equipment needed to install QuadraPile negates any requirement for large machinery on site which would have the potential to cause damage through high ground pressure and overhead incursion on branches.

Using the QuadraPile system as foundations for a new structure will reduce or often completely remove the need for concrete. Concrete ringbeams use less concrete or the new structure can simply be bolted to the top of the piles once they are installed.

Tree Roots

Prior to installing each pile, a spike is driven into the ground to form a pilot hole. This spike has the benefit of providing a method to detect any large roots which are in the path of the pile. Small roots are often simply pushed aside. If a large root is encountered with the spike, then the pile position can be altered slightly to avoid causing damage to the root.

Once a clear path has been identified with the spike, the pile is driven into the ground with the use of a pneumatic hammer. The helical shape causes the pile to rotate as it is driven. Damage to smaller roots is minimised due to the shape of the pile which allows it to twist through the roots with only minimal disturbance.

Stati-CAL have successfully installed piles in close proximity to large trees with Tree Preservation Orders, including in the Greater London area following consultation with the local authority.



Load Capacity and Trees

Allowance for nearby trees is made using the NHBC guidance (Appendix 4.2A (Building Near Trees)). This normally results in a tensile test at a shallow depth followed by a tensile test at a deeper depth with the difference needing to exceed a calculated value in order to overcome the zone of influence of the tree. The zone of influence varies according to the tree type, distance from the structure and ground composition.



Re-build of a wall in London -
Successfully piled in close proximity
to large and important trees.



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