



SPEEDECK
FOUNDATIONS LIMITED



Meadow Lane, Thurston, Suffolk

CLIENT TYPE	Residential
LOCATION	Thurston, Suffolk
NO. OF UNITS	Six units

Project Overview

Matthew Homes required foundations for six new homes and a garage at Meadow Lane, Thurston, Suffolk. The proposed structural foundations covered approximately 403m², comprising five piled rafts serving the six residential units, with a further piled raft for the garage.

The site presented a particular design challenge as the plots were located within a mapped Tree Influence Zone. SPEEDECK's approach was to establish whether a voided solution was actually necessary for the ground conditions at this site.

Essential Design and Engineering

Following review of the ground investigation and geotechnical data, SPEEDECK proposed a non-voided piled raft solution. By using the site-specific geotechnical evidence rather than defaulting to a voided solution, the design avoided the additional excavation and void-forming requirements that would otherwise have been introduced.

The foundation design incorporated 300mm diameter piles, designed in accordance with Eurocode 7 Design Approach 1, Combination 2, with pile lengths ranging from 6.0m to 12.0m. The reinforced concrete rafts were designed using RC35 concrete, with raft thicknesses ranging from 225mm to 300mm. Across the development, approximately 403m² of structural foundations were proposed.

A Complete Solution

The final solution provided Matthew Homes with a non-voided piled raft foundation within a Tree Influence Zone, supported by site-specific geotechnical evidence and warranty-provider approval.

Two key site risks were addressed through targeted investigation rather than adopting more conservative measures by default:

- Volume change potential was assessed through Atterberg and desiccation testing.
- Ground bearing capacity for the piling rig was confirmed through plate-bearing CBR testing.

This allowed SPEEDECK to avoid the additional excavation and void formers associated with a voided solution, while also avoiding the need for an engineered granular piling mat. The result was a foundation solution that was economical, technically justified and quick to construct, with approximately 403m² of structural foundations delivered within a six-week programme.

