

Upper Street, Leeds, Kent—Emergency Ground Stabilisation

Project Profile

Client: Amey Highways/Kent County Council

Designer: Peter Brett Associates

Value: £488k



The A2163 road through Leeds, near Maidstone, Kent collapsed during the winter of 2013/14 revealing a large void below the highway and also voids extending beneath adjacent properties.

The collapse was thought to be caused by deep localised crevices within the underlying bedrock—Cretaceous deposits comprising of Hythe Formation deposits overlying Atherfield Clay.

The works undertaken comprised the following:

- Dynamic probing investigation to the road and adjacent properties to establish the extent of the anomalies and the stability of the surrounding ground to aid the design of a treatment strategy.
- Site investigative boreholes using rotary open-hole and coring techniques around and angled beneath the properties.
- Hand dug trial pits to locate services and expose the foundations of the properties.
- Carry out garden clearance works to permit access for the dynamic probe and rotary drill rigs.
- Drill 55 treatment holes within the road and a further 22 treatment holes around and beneath the properties using rotary open-hole techniques.
- The majority of the property treatment holes were angle drilled from the road using specialist geotechnical drill rigs with angle and casing capability.
- Injected 470 tonnes of sand/pfa/cement/bentonite grout using high pressure compaction grouting techniques.
- Injected 20 tonnes of sand/pfa/cement/bentonite grout using bulk fill techniques to fill two surface anomalies located during the treatment works.
- Validation of the treatment works using a combination of grout acceptance and dynamic probing techniques.
- Reinstatement of the gardens following completion of the treatment works.
- Continual liaison with Kent County Council, the Highways Agency, Consultants (AMEY and PBA), Insurance Loss Adjustors, residents and interested third parties.

The programme time and the disruption caused by the work was minimised as far as possible by 7 day working throughout the contract.

