
Peters Associates

Consulting Structural and Civil Engineers

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BUILDING SUBSIDENCE

The Problem

Building subsidence is caused by the movement of the natural ground beneath structures. In recent years particular problems have arisen due to shrinkage and/or heave of clay subsoils following periods of prolonged dry weather. Isolated soil failure has been a further problem. PETERS ASSOCIATES (RIPON) LTD area highly experienced in dealing with building subsidence.

The Solution

To arrive at the appropriate structural solution, identification of the cause is vital.

Probably causes are:

- Shrinkage of the clay due to climatic effects.
- Shrinkage of the clay due to moisture demand from nearby trees.
- Heave of the ground following removal of trees.
- Softening of ground due to defective drainage.
- Weak ground conditions.
- Gypsum collapse in the Ripon area.
- Mining.
- Ground Instability.

Remedial works could be:

- A passive approach allowing natural ground recovery with time.
- Removing the source of high water demand by felling or pollarding trees.
- Selective underpinning if progressive non-recoverable subsidence is demonstrated.
- Piling in extreme, isolated cases.

Geography

The geographical spread of subsidence is governed by the geological conditions prevalent in any particular area. Principal areas where we have been involved are:-

Ripon, London, Thirsk, York, Harrogate, Darlington, Norwich, Sheffield, Leeds, Northallerton and Boroughbridge.

The properties involved ranged from domestic through to industrial and commercial premises.

We were retained by Direct Line Insurance as structural consultants on subsidence claims in the North of England for several years, prior to their restructuring.

Technical Assessment

The correct response to subsidence can only be achieved after a thorough technical assessment. On each of the schemes handled by the practice, the entire project from initial survey through to final remedy is under the control of a Qualified Engineer.

To assist in this technical appraisal the practice has its own testing equipment:

- Proving ring penetrometer to determine the bearing capacity of the underlying ground.
- Self adjusting level to measure the level profile around a property and hence confirm areas where subsidence has taken place.
- Digital calliper set to accurately monitor movement across existing cracks to within 0.1mm.

Technical Support

Where further technical support is required we have long standing agreements with site investigation and testing laboratories both in the north and south of England, who are able to provide an efficient and accurate service.

Reporting

Particular emphasis is given within the practice to the production of clear and concise technical reports.

Seventy percent of the cases of subsidence investigated by the practice are the subject of an insurance claim. Our technical reports contain the requisite information in order to assist Loss Adjusters and Insurance Companies to reach definitive conclusions.

Project Management

We have the expertise to carry through our recommendations to a satisfactory conclusion including:

- Preparation of construction drawings, specifications and contract documentation.
- Obtaining competitive tenders for remedial works.
- Appointing contractors.
- Site supervision.
- Issuing of interim payment certificates.
- Producing a detailed financial summary.

This procedure ensures that the works are executed in accordance with our designs and specifications whilst at the same time providing full value.

Resolving a subsidence problem is a stressful undertaking for any property owner. It is therefore important to advise the property owner of the necessary timescale involved in solving his problems.

We are experienced in the required negotiations with Loss Adjusters, and are aware of the necessary overlap between the work of the Loss Adjuster and the Engineer. By maintaining good communications between all parties duplication of effort can be eliminated contributing to an early and economic resolution of the problem.

We are also able to assist Loss Adjusters and Insurance Companies in assessing schemes prepared by others to confirm that they are not only technically adequate but are also appropriate to the particular problem.

Fees

We would assess the nature of the work required and would provide a detailed breakdown of our costs.

These vary from time charges through to quoted lump sums for specific work.

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