

GEOTECHNICAL ASSESSMENT

The nature of the ground has a major influence on construction projects. The rocks that form the ground have a major influence on the terrain. Weathering and other long term geological processes sculpt the landscape and reduce some of the rocks to sand, clay and other engineering soils. Some of the processes erode the higher ground and others leave complex deposits of sand & clay. Together these rocks and landform shaping processes determine the nature, strength and physical shape of the ground.

We seek to gain a detailed understanding of the geological processes and rocks that have shaped the landscape in order to manage the design and construction process most effectively. The findings of these studies provide information about the physical characteristics of soils and rocks and what the likely impacts on the project will be. The nature of the ground is the geology. Understanding the strength of the ground and its influence on construction is the study of geotechnics.

Studies will include gathering existing published information regarding the history of development, underlying geology, distribution of soils, aggregate & mineral workings, groundwater protection & extraction & previous site investigation data. These may be supplemented by a walkover survey of the area to confirm such features.

Ongoing studies will gather geotechnical information and identify the potential impacts and constraints within the study area which may affect the proposed scheme. Those impacts will be considered in relation to their effect on the feasibility and cost of construction, the time to construct the project, safety of workmen and users of the project quality of the construction and impact on the environment. Constraints may include the following:

• IDENTIFICATION OF AREAS OF SOFT GROUND: The geological maps and the aerial photography for the study area will be used to help identify areas of soft ground; for example areas of peat, riverside alluvium and marshland. These lead to weak or wet soil, where excavation could be difficult, foundation conditions are poor and construction methods expensive. Peat areas can be particularly difficult.







- IDENTIFICATION OF AREAS OF ROCK CLOSE TO THE GROUND SURFACE: The geological maps by GSNI and aerial photography help identify areas where the rock surface lies at or near to the ground surface. Rock can be difficult and costly to excavate, though can yield benefits in providing aggregate for use in the works.
- MAN-MADE FEATURES: Pits, quarries and other historic industrial activity can lead to potential contamination of the ground, which can be harmful to the environment. These can be identified from the air photos, historic maps, records and by walking the area. Any such sites will be designated as low, medium or high risk, using the grading criteria established by The Environment and Heritage Service. Where such sites affect the proposed route, it will be necessary to clean them up to eliminate the risk to the project, its users, and the environment.



