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1.11.3 Example 8: Reliability of the soils investigation; 1.11.4 Example 9: Deterioration of ground exposed by excavation; 1.11.5 Example 10: Effect of new foundation on existing structure; 1.12 Design procedures; 1.13 References; 2 Soil Mechanics, Lab Testing and Geology; A: Soil mechanics; 2.1 Introduction to soil mechanics; 2.2 Pressure distribution through ground; 2.3 Bearing capacity; 2.3.1 Introduction to bearing capacity; 2.3.2 Main variables affecting bearing capacity; 2.3.3 Bearing capacity and bearing pressure; 2.3.4 Determination of ultimate bearing capacity; 2.3.5 Safe bearing capacity - cohesionless soils; 2.3.6 Safe bearing capacity - cohesive soils; 2.3.7 Safe bearing capacity combined soils; 2.4 Settlement; 2.4.1 Introduction to settlement; 2.4.2 Void ratio; 2.4.3 Consolidation test; 2.4.4 Coefficient of volume compressibility; 2.4.5 Magnitude and rate of settlement; 2.4.6 Settlement calculations; 2.5 Allowable bearing pressure; 2.6 Conclusions; B: Laboratory testing; 2.7 Introduction to laboratory testing; 2.8 Classification (disturbed sample tests); 2.8.1 Particle size and distribution; 2.8.2 Density; 2.8.3 Liquidity and plasticity; 2.8.4 General; 2.9 Undisturbed sample testing; 2.9.1 Moisture content; 2.9.2 Shear strength; 2.9.3 Consolidation tests (oedometer apparatus); 2.9.4 Permeability tests; 2.9.5 Chemical tests; 2.10 Summary of tests; 2.11 Analysis of results; 2.12 Final observations on testing; C: Geology; 2.13 Introduction to geology; 2.14 Formation of rock types; 2.15 Weathering of rocks; 2.16 Agents of weathering; 2.16.1 Temperature; 2.16.2 Water; 2.16.3 Wind; 2.16.4 Glaciation; 2.17 Earth movement; 2.17.1 Folds, fractures and faults; 2.17.2 Dip and strike; 2.17.3 Jointing; 2.17.4 Drift; 2.18 Errors in borehole interpretation

Sommario/riassunto

This manual for civil and structural engineers aims to simplify as much as possible a complex subject which is often treated too theoretically, by explaining in a practical way how to provide uncomplicated, buildable and economical foundations. It explains simply, clearly and with numerous worked examples how economic foundation design is achieved. It deals with both straightforward and difficult sites, following the process through site investigation, foundation selection and, finally, design. The book includes chapters on many aspects of found