



Foreword

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The *International Journal of Geoengineering Case Histories* (IJGCH) is a refereed journal covering the practice of geoengineering, which encompasses the fields of engineering geology, soil mechanics, rock mechanics, geoenvironmental engineering, and geotechnical earthquake engineering, among others. The growth of the fields of soil mechanics, rock mechanics, and engineering geology into the broader area that is now known as geoengineering or geotechnics provides insight to how future developments in our profession will continue to expand and to diversify our field of practice. As the profession moves forward there will be continuing pressures toward specialization, as evidenced by the growth of specialized journals for promoting research and practice in the many subdisciplines of geoengineering.

Yet, case histories are what unite our profession, as each subdiscipline of geoengineering is unique relative to other fields of engineering in their need for well-documented case histories to examine, to validate, and to extend our understanding. As eloquently stated by Professor Ralph Peck in the following letter of support for this journal, geoengineers must always address the primary challenge of engineering with materials built by nature and not by humans. The inherent heterogeneity of soils and rocks in their natural deposits or formations will always refocus our profession's attention back to the importance of case histories. No theory or experiment will be self-sufficient, and no geoengineer should employ numerical or laboratory procedures that have not been first validated and calibrated through well-documented case histories.

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The primary aim of the *International Journal of Geoengineering Case Histories* is to provide a responsive forum for the dissemination of well-documented case histories. The data that are carefully developed to document a case history represent significant contributions to the advancement of geoengineering. A well-executed subsurface investigation program that describes key characteristics of the pertinent soil deposits, formations, or rock masses at a project site, the layout of field instrumentation and the proper collection of the resulting data are as important to the profession as a well-executed analysis or experiment. Moreover, recorded observations of performance of full-scale engineered facilities bring forth knowledge and confidence that is unmatched in the laboratory or in the office.

Professor Karl Terzaghi stated in 1936 in his presidential address to the First International Conference on Soil Mechanics and Foundation Engineering: “*Our theories will be superseded by better ones, but the results of conscientious observations in the field will remain as a permanent asset of inestimable value to our profession.*” He re-emphasized his belief in 1948 in the foreword for the first issue of *Geotechnique*:

During the last decade, theory and the techniques of sampling and testing have advanced far beyond immediate practical needs, whereas our knowledge of the difference between the behaviour of soils in the field and in the laboratory has lagged behind. Therefore, at the present time, a well-documented case history should be given as much weight as ten ingenious theories and the results of laboratory investigations should not receive too much attention unless the validity of the conclusions has been demonstrated by adequate field observations on full-sized structures.

Although our profession has advanced significantly over the last half century, one could argue that Professor Terzaghi’s advice should continue to guide our profession.

Papers on well-documented case histories with emphasis on observations and data collected during and after project construction are invited for consideration for publication in the *International Journal of Geoengineering Case Histories*. Emphasis is given to the methods used to collect the data, their assessment, the establishment of the geologic model of the subsurface conditions, the project’s design and construction details, and instrumented system performance. Items of interest could include site characterization by soil borings, rock coring, in situ tests, laboratory programs, or field geophysics, as well as full-scale performance of foundations, earth fills, tunnels, excavations, and groundwater flow. Papers that describe the use of the “Observational Method” (i.e. the use of field measurements and observations during construction to calibrate and to refine the theoretical model employed for analysis to allow modification of the design as necessary) in geoengineering practice are particularly desirable. Case histories that employ this method and include comparisons of the results of analysis and field measurements offer great insight to the profession.

The journal, by taking advantage of the opportunities provided by the Internet, aims to become an efficient means of communication among practicing engineers and of publication and distribution of high quality, useful, and easily accessible project data that could be used in research projects. The journal intends to be the most effective way for the publication of the wealth of case history data that practicing engineers and professors worldwide currently have that is now unavailable to the profession.

Most geoengineers have worked on several insightful case histories during their careers. Although carefully documenting the data collected so that key insights can be shared requires additional effort, it is hoped that the combined benefit to the profession provides sufficient compensation for this effort. Without the history of the practice of geoengineering described through well-documented case records, we will fail to advance fully our understanding in the current century.

The journal has a number of characteristics that differentiate it from existing geoengineering journals:

- Because our main intention is to create a useful and high quality tool for engineering practice worldwide, all published papers and data are accessible at no cost. Anyone interested may download a paper from the website. This feature is important for the readers, but also guarantees wide dissemination of the published papers to the benefit of the authors and the profession.
- The journal is multi-colored. Published papers can have colored photos that more clearly show the important details. This is particularly important for case histories.
- Data files that contain the important characterization information for each case history will accompany each paper, making the data easily available to other interested parties and allowing for the widest possible dissemination of these data. The digital data are an integral and required part of each article.



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- Back-analyses with sophisticated numerical procedures or advanced physical models are not required. Although back-analyses with state-of-the-practice analytical procedures and if appropriate, advanced numerical procedures are encouraged to provide insight, they are not required. The careful documentation of a well-executed program of subsurface investigation and field instrumentation of performance is considered a significant contribution in its own right if the material is of interest to the profession.
 - An effort is made for the accepted papers to be published online on a timely manner, minimizing time delays. The entire review procedure is performed online, and each paper is published individually as soon as it is accepted.
 - The journal takes advantage of the opportunities provided by the Internet. All papers are searchable directly on the Internet by search engines making the articles more accessible. Free mailing lists will announce the publication of the most recent papers. Additional web space is provided, if needed, to the authors of a paper to store and to present additional useful information, and the published papers will be able to refer to the location of these data.

The *International Journal of Geoengineering Case Histories* will hopefully become a much relied upon database of high-quality geotechnical information. Our primary goal is to provide a high quality, useful and free tool for engineering practice worldwide. Papers in the journal will be refereed according to the standards established by other prestigious journals in our field.

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