Soil Improvement

HISTORY, CAPABILITIES, AND OUTLOOK

Report by the
Committee on Placement and Improvement of Soils
of the
Geotechnical Engineering Division
of the
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INTRODUCTION

Soil, nature's most abundant construction material, has been used by man for his engineering works since prior to the beginnings of recorded history. Virtually all construction is done on, in, or with soil, but not always are the natural soil conditions adequate to accomplish the work at hand. When poor soil conditions are encountered, the engineer has, apart from abandoning the project, four alternatives: (1) bypass the poor soil, for example, by moving to a new site or through the use of a deep foundation, (2) remove the poor material and replace it with a good one, (3) redesign the structure for the poor conditions, or (4) treat the soil to improve its properties. Each of these alternatives has been utilized extensively in the past. As the scarcity of good sites and materials intensifies, it is likely that the importance of the fourth alternative will increase in the future.

As the United States paused during the Bicentennial Year of 1976 to take stock of its past, present, and future, the GT Division Committee on Placement and Improvement of Soils considered it appropriate also to review the history, assess the present capabilities, and project the future of some of the methods and technology for soil and site improvement. Accordingly a Committee-sponsored program, "New Directions in Placement and Improvement of Soils," was developed for presentation at the ASCE Annual Convention and Exposition, "CE 76" held in Philadelphia, September 27 - October 1, 1976. The series of papers prepared by members of the Committee for that program have been combined to form the Committee Report that follows.