# TABLE OF CONTENTS

1 Introduction ................................................................. 1 - 1

2 Getting started .......................................................... 2 - 1
   2.1 Installation ....................................................... 2 - 1
   2.2 General modelling aspects .................................. 2 - 1
   2.3 Input procedures ............................................... 2 - 3
      2.3.1 Input of geometry objects ......................... 2 - 3
      2.3.2 Input of text and values .......................... 2 - 3
      2.3.3 Input of selections .................................. 2 - 4
      2.3.4 Structured input ...................................... 2 - 5
   2.4 Starting the program ......................................... 2 - 6
      2.4.1 General settings ...................................... 2 - 6
      2.4.2 Creating a geometry model ..................... 2 - 8

3 Settlement of circular footing on sand (Lesson 1) ........... 3 - 1
   3.1 Geometry ....................................................... 3 - 1
   3.2 Rigid footing .................................................. 3 - 2
      3.2.1 Creating the input ................................... 3 - 2
      3.2.2 Performing calculations ......................... 3 - 14
      3.2.3 Viewing output results .......................... 3 - 18
   3.3 Flexible footing ............................................... 3 - 21

4 Submerged construction of an excavation (Lesson 2) ....... 4 - 1
   4.1 Geometry ....................................................... 4 - 2
   4.2 Calculations .................................................. 4 - 11
   4.3 Viewing output results ................................... 4 - 14

5 Undrained river embankment (Lesson 3) ......................... 5 - 1
   5.1 Geometry model ............................................. 5 - 1
   5.2 Calculations .................................................. 5 - 4
   5.3 Output .......................................................... 5 - 9

6 Dry excavation using a tie back wall (Lesson 4) ............... 6 - 1
   6.1 Input .......................................................... 6 - 1
   6.2 Calculations .................................................. 6 - 5
   6.3 Output .......................................................... 6 - 9

7 Construction of a road embankment (Lesson 5) ............... 7 - 1
   7.1 Input .......................................................... 7 - 1
   7.2 Calculations .................................................. 7 - 4
   7.3 Output .......................................................... 7 - 5
   7.4 Safety analysis ............................................... 7 - 7
1 INTRODUCTION

PLAXIS is a finite element package that has been developed specifically for the analysis of deformation and stability in geotechnical engineering projects. The simple graphical input procedures enable a quick generation of complex finite element models, and the enhanced output facilities provide a detailed presentation of computational results. The calculation itself is fully automated and based on robust numerical procedures. This concept enables new users to work with the package after only a few hours of training.

This Tutorial Manual is intended to help new users become familiar with the full PLAXIS package. The various lessons deal with a wide range of interesting practical applications and cover most of the program features. Users are expected to have a basic understanding of soil mechanics and should be able to work in a Windows 95 or Windows NT environment. It is strongly recommended that the lessons are followed in the order that they appear in the manual. The tutorial lessons are also available in the PLAXIS examples directory and can be used to check your results.

The Tutorial Manual does not provide theoretical background information on the finite element method or on numerical procedures, nor does it explain the details of the various soil models available in the program. The latter can be found in the Material Models Manual, as included in the full PLAXIS manual, and theoretical background is given in the Scientific Manual. For detailed information on the available program features, the user is referred to the Reference Manual. In addition to the full set of manuals, short courses are organised on a regular basis at several places in the world in order to provide hands-on experience and background information on the use of the program.