

PREFACE

Understanding the limitations and opportunities of a given landscape to sustain plant growth will ultimately determine the success or failure of any landscape design. In this book, our objectives are to empower landscape architects, horticulturists, and city foresters with tools so that they may make detailed assessments of sites that pose problems or present opportunities for proposed and existing plantings. In addition, subjects we engage in this text include understanding microclimates, soil texture, soil compaction, soil pH and nutrients, drainage, and spatial limitations to plant growth both above and below ground as well as evaluating existing vegetation. This sets the stage for appropriate plant selection and installation guidance to meet the design intent as well as point out the need to modify the planting design or the site conditions when feasible.

Detailed considerations of soil amendments, drainage and aeration, nutrients and innovative materials, methods, and details are provided. Critical step-by-step calculations to determine needed soil volumes to achieve envisioned designs are outlined. Associated with these calculations are strategies to design for planting areas and configurations that improve the success of plant establishment in urban areas.

The way in which we make plant selections for a given site based on documented site assessment is stressed in this text. Strategies for the consideration of biological diversity and visual similarity are considered, and some tree species that may be used to achieve such ideas are suggested. Essential considerations of planting techniques and maintenance are provided, as are techniques for site preservation and management during construction.

Many people have contributed to the science and art of urban tree establishment. In this text, we present their best ideas. We are grateful for the efforts of graduate students at Cornell University's Urban Horticulture Institute for their contributions over the years, many of which are presented here. We are especially appreciative of the research done by Louis Anella,

Michelle Buckstrup, Susan Day, Mathew Evans, Jason Grabosky, Carol Grohs, J. Roger Harris, Michael Haug, George Hawver, David Headley, John Jordan, Patricia Lindsey, Barbara Neal, Donald Rakow, Thomas Ranney, and Angela Rivenshield. We also appreciate the guiding expertise of Joann Gruttadaurio.

Design conceptualization through site assessment, soil remediation, detailing, plant selection, installation, and maintenance are all considered in detail and are accessible to the student and practitioner of landscape architecture as well as the horticulturalist and urban forester. It is our hope that the strategies, techniques, and best contemporary research and horticultural practices will advance and improve the success of establishing trees in cities.

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