

Landscaping

Principles and Practices

6 T H E D I T I O N

Jack E. Ingels
State University of New York
College of Agriculture and Technology
Cobleskill, New York

THOMSON
—★—™
DELMAR LEARNING

Contents

Preface ix

Acknowledgments xi

Introduction: An Overview of the
Landscape Industry xiii

SECTION 1 Landscape Designing

- Chapter 1 Using Drawing Instruments 2**
The Purpose of the Drawing Tools 2 • The Tools and How They Work 3
• Getting Started 11
- Chapter 2 Lettering 15**
The Importance of Lettering 15 • Methods of Lettering 15
- Chapter 3 Graphic Materials and Techniques 27**
Same Design, Different Views 27 • Landscape Symbols 31 •
Explaining an Idea With Symbols 36 • Labeling 36 • Design Sheet
Layout 39 • Different Drawings for Different Requirements 44 •
Graphic Media 46 • The Layout of Graphic Presentations 55
- Chapter 4 The Site 60**
Site Features and Characteristics 60 • Sources of Site Information 62 •
Reading the Terrain 64 • Grading the Land 65 • Preparing a Base
Map 67
- Chapter 5 The Landscape Process 74**
Landscaping as a Process 74 • Interviewing the Client 76 • Diagrams
and Drawings Within the Design Process 79
- Chapter 6 The Outdoor Room Concept 85**
Outdoor Use Areas 85 • The Outdoor Room Concept 88
- Chapter 7 Plant Selection 98**
The Origins of Landscape Plants 98 • Plant Forms Available 99
• Plant Nomenclature 102 • Selecting the Proper Plant 102 •
Computer-Aided Plant Selection 129

- Chapter 8 The Principles of Design 131**
The Foundation for Designing 131 • Applying the Principles of Design to Landscape Designing 136 • Material Characteristics Supportive of the Design Principles 146
- Chapter 9 Flowers 152**
The Uses and Limitations of Flowers in the Landscape 152 • Different Flowers Have Different Life Spans 153 • Flower Beds and Flower Borders 155 • Designing Flower Plantings 156
- Chapter 10 Xeriscaping 162**
Xeriscape: Water-wise Landscaping 162 • The Benefits of Xeriscaping 163 • The Seven Principles of Xeriscaping 170 • Applying Xeriscape Principles to Designing 171
- Chapter 11 Hardscape 175**
Hardscape: An Umbrella Term 175 • Selection Criteria 176 • Changing Levels in the Landscape 180 • Walks, Drives, and Stepping Stones 184 • Water Features 185 • Constructing a Recirculating Water Feature 189 • Outdoor Lighting 190
- Chapter 12 Enrichment 206**
Landscape Enrichment Is Something Extra 206 • Tangible and Intangible/Natural and Fabricated 206 • Is the Enrichment Item Necessary? 217
- Chapter 13 Landscaping in the Age of Technology 219**
Technology is Dynamic 219 • The Necessary and the Novel 220 • Sources of New Technology 220 • The Forms and the Types of Technology in Landscaping 220 • The Future 227
- Chapter 14 Pricing the Proposed Design 229**
Cost and Price 229 • Estimates and Bids 230 • Specifications 231 • Preparing the Estimate 231

SECTION 2 Landscape Contracting

- Chapter 15 Landscape Calculations 238**
The Landscape Take-Off 238 • The Necessary Calculations 239 • Sources of the Data 239 • Standardized Technique Is Important 239 • Typical Sequence of Calculations for Take-Offs 240 • Typical Calculations Required for Take-Offs 241 • Pit and Ball Calculations 252
- Chapter 16 Understanding Contracts and Contractors 258**
The Importance of Contracts 258 • The Components of a Contract 259 • Types of Contractual Associations 259 • How Landscape Contractors Are Selected 262 • The Advantages and Disadvantages 266

| | |
|-------------------|---|
| Chapter 17 | Contract Documents 268 The Need for Documents 268 • The Documents 268 • The Complete Contract 278 |
| Chapter 18 | Specifications 281 Project Manuals 282 • Masterformat 282 • Standard and Customized Specifications 283 • Uniformity in Preparation of Project Manuals 284 • The Writers 284 • Methods of Specifying 284 • Sources of Specification Data 286 • Closed and Open Specifications 286 • When Changes Are Needed 286 |
| Chapter 19 | Human Resources: The Needs and Opportunities 288 Staffing: The Industry's Number One Problem 288 • The Career Opportunities 290 • Qualities Needed for Career Success 290 • Successful Match-Up: Creating a Win-Win Relationship 293 |
| Chapter 20 | Installing Landscape Plants 296 The Importance of Proper Installation 296 • The Necessary Tools 296 • The Soil for Installation 297 • Root Forms of Landscape Plants 298 • The Time to Transplant 299 • Methods of Installation 299 • Mulching 307 • Using Antitranspirants 308 • Problems of Arid Regions 308 • Planting in the Southeast 309 |
| Chapter 21 | Selecting the Proper Grass 315 Comparison of Turfgrasses 315 • Purchasing Grass Seed 318 • Mixtures, Blends, and Single-Species Lawns 324 |
| Chapter 22 | Lawn Construction 326 Selecting the Method of Lawn Installation 326 • Proper Lawn Construction 328 • Calibrating a Spreader 332 |
| Chapter 23 | Landscape Irrigation 335 Types of Landscape Irrigation Systems 336 • The Terminology of Landscape Irrigation 336 • Sprinkler Irrigation 339 • Sizing Irrigation Pipe 342 • Matching Water Flow and Pressure With Pipe Size 342 • Calculating Working Water Pressure 343 • Selecting and Locating Sprinklers 346 • Trickle Irrigation 349 • The Future 350 |
| Chapter 24 | Interior Plantscaping 353 Containerizing Plants, Past and Present 353 • The Materials 354 • Uniqueness of Interior Plantscapes 355 • Light and Interior Plantings 356 • The Growing Medium 365 • Watering and Drainage 367 • Other Concerns 368 • The Interdisciplinary Team 371 • The Future 372 |

SECTION 3 Landscape Maintenance

- Chapter 25 Maintaining Landscape Plants 376**
Sustained Care of Plantings 376 • Pest Control 379 • Pruning Trees and Shrubs 381 • Flower Plantings 389
- Chapter 26 Plant Injuries: Identification and Care 393**
Plant Injuries and Their Causes 393 • How Insects and Diseases Are Spread 394 • The Symptoms of Injury 396 • Determining the Cause 397 • Weeds 399 • The Principles of Control 399 • Pesticides 401 • Pesticide Formulations 402 • Integrated Pest Management 403
- Chapter 27 Care of the Lawn 406**
Spring Lawn Care 406 • Lawn Fertilization 408 • Watering the Lawn 411 • Mowing the Lawn 412 • Damage to Lawns 414
- Chapter 28 Winterization of the Landscape 418**
Types of Winter Injury 418 • Reducing Winter Injury 423
- Chapter 29 Pricing Landscape Maintenance 427**
The Need for Cost Analysis in Landscape Maintenance 427 • Features of the Maintenance Cost Analysis 428 • Calculations for Cost Analysis 428 • The Completed Cost Estimate 430
- Chapter 30 Safety in the Landscape Industry 434**
It's a Risky Business 434 • Safety Regulations Established by Government 436 • The Occupational Safety and Health Administration (OSHA) 441 • Safety Awareness Is Promoted by the Landscape Industry 441 • Safe Practice at the Worksite 442
- The Final Word: Customer Service 446**
- Appendix A: Examples of Landscape Designs 449**
- Appendix B: Tools of the Trade 463**
- Appendix C: Professional and Trade Organizations 469**
Agronomy, Soil 469 • Botany 469 • Bulbs 470 • Business Management 470 • Fertilizers, Chemicals 470 • Flowers, Plants 470 • Government Agencies 471 • Horticulture 471 • Landscaping 471 • Nurseries 472 • Outdoor Living 472 • Pest Control 472 • Power Equipment, Parts 472 • Seeds 473 • Soil Conditioners 473 • Trees 473 • Turf 474 • Wildflowers 474
- Glossary 475**
- Index 484**