LANDSCAPE HANDBOOK
FOR THE TROPICS

W.F. HILL

Garden • Art • Press
Contents

Foreword 10
Preface and Acknowledgements 11
Introduction 13
Chapter 1: ELEMENTS OF THE TROPICAL LANDSCAPE 14
The Biosphere 15
Energy 16
Nature 16
Fuel 16
Hydroelectric Power 17
Wind 17
Solar Cells 18
Climate 18
Sunlight, Winds 18
Landform, Vegetation and Climate 20
Altitude and Atmosphere 20
Wind Patterns and Seasons 21
Surface Water and Clouds 21
Geomorphology 22
Rock Classification 24
Igneous 24
Sedimentary 25
Metamorphic 26
Soils 27
Formation 27
Physical Properties 30
Chemical Properties and pH 30
Classification 33
Soil Profile 33
Tropical Soils 35
Oxisols 35
Ultisols 37
Vertisols 37
Inceptisols 37
Alfisols 37
Entisols 39
Aridisols 39
Ecosystems 40
Life Cycles 40
Balance and Variety 42
Catenas 45
Change and Adaptation 47
Chapter 2: LANDSCAPE AND CULTURES 56
Energy and People 57
The Gatherer-Hunters 57
Planting 58
Subsistence Farming 59
The Development of Agriculture 61
Terracing 61
Lake Islands 62
Specialization and Government 62
Religion 63
The Garden 64
Aztec Gardens 64
Islamic Gardens 64
The Generalife 65
and The Alhambra 65
Islam in India 66
Industrialization 68
Urbanization 69
Mankind and Nature 70
Transport Systems 70
Nature’s Backlash 71
Reassessments 71
The Future 72
Botanical Gardens 73
Chapter 3: THE PRACTICE OF LANDSCAPE DESIGN 76
The Designer 76
The Client 77
Agencies 78
Legal Experts 78
Surveyors 78
Soil Analyst, Geologist, Hydrologist 78
Civil Engineer 84
Biologists 84
Design Procedure 85
Terms of Engagement 85
Limits of Authority 85
The Brief 86
Survey 86
Proposal 87
Sketch Scheme 87
Final Scheme 88
Details 88
Contract 89
Tenders 89
Implementation 90
Subcontractors, Clerks of Works, Site Agent 90
Records 92
Timing 92
Payments, Variations 95
Practical Completion, Defects, Liability Period 95
Handing Over 96
Fees 96
Percentage Basis 97
Time Basis 98
Lump Sum 98
Chapter 4: COMMUNICATION METHODS 100
Suggestions, Commitments 101
Drawing Types 101
Rough Work 103
Presentation Drawings 103
Working Drawings 103
Style 104
Standard Data 104
Sheet Layout 106
Survey 107
Topography 107
Geology 107
Contents

Hard Surface Construction  243  Footpath and Amenity Lighting  298  The Green Space Plan  322
Drainage to Hard Surfaces  249  Areas of interest  299  Plants for Produce  322
Edges  256  Decorative Lighting  300  The Cultural Aesthetic Landscape  323
Circulation Routes  257  Illuminated Signs  300  Plant Needs in Urban areas  323
Barriers  265  Signs  300  Plants and Hard surfaces  327
Water  274  Planters  304  Plant Barriers  328
   Swimming Pools  276  Bollards  306  Plant Choice and arrangement  330
   Fish Farms  278  Play Structures  308  Site Preparation  331
   Urban Water Bodies,  279  Shelters and Other Structures  310  Soil Nutrition  332
      Garden Ponds  279  Art in the Landscape  313  Plant Sources  333
   Fountains, Waterfalls  282  Viewing positions  313  Installation  324
   Edging  285  Lighting  314  Roof Gardens  335
Coastal Works  287  Background  314  Water Plants  336

Chapter 10:
LANDSCAPE FURNITURE,  290  The Reclamation of Wastes  341
STRUCTURES, ART WORK

Chapter 11:
SOFT LANDSCAPING  316

Furniture  291  Hard or Soft?  317
Seating and Tables  292  Climate and Plants  318
Litter Bins  294  Plant Origins  320
Lighting  296  Planting Concepts  321
   Highway lighting  297  Cultural aesthetic  321

Conservation  339

Waste Sources  341
Waste Characteristics  341
and Sampling  342
Advance Planning for Wastes  343
Treatment of Wastes  343
Planting on Wastes  345
Chapter 12: PLANTS

350 Semi-mature

350 The Palms

370 Direct Biological Control

370 Natural Pesticides

370 Commercial Pesticides

371 Postscript The Ecology Debate

373 Glossary of terms

373 Measures and formulae

374 Useful data for surveying

375 Appendix 1 Journals on landscape, gardening, ecology and wildlife

376 Appendix 2 Foundations, trusts and institutions concerned with the environment

378 Appendix 3 Associations for landscape architecture

378 Lists of tables, figures and plates

378 Index and Plant List

351 Cycads

350 Grass

357 Species Selection

357 Ground Preparation

357 Seeding

357 Turfing

359 Tufting

357 Non-Wearing Ground Cover

360 Herbaceous Plants

362 Bulbs and Tubers

362 Ferns

363 Shrubs and Bushes

363 Climbing Plants, Creepers

366 Trees

366 Seedlings and Saplings