



Contents

FOREWORD

Bob Berkebile, FALA

Sim Van der Ryn

xi

PREFACE

xvii

ACKNOWLEDGMENTS

xxi

Part I. DESIGN PRINCIPLES

1. Introduction

The Natural Building Movement

Lynne Elizabeth

3

The Realities of Specifying Environmental Building Materials

Cassandra Adams

9

2. A New Context for Building Codes and Regulation

David Eisenberg

19

- 3. Natural Conditioning of Buildings** 37
*Ken Haggard, Polly Cooper, and Jennifer Rennick
with assistance from Phil Niles*
- 4. Structural Properties of Alternative Building Materials** 71
Bruce King, P.E.
-

PART II. SYSTEMS AND MATERIALS

- 5. Adobe** 87
Michael Moquin
- 6. Cob** 117
Michael Smith
- 7. Rammed Earth** 151
David Easton
- 8. Modular Contained Earth**
- Earthbag** 175
*Joseph Kennedy and Paulina Wojciechowska
with special acknowledgment of the work of Nader Khalili*
- Earth-Rammed Tires** 190
Michael Reynolds
- 9. Light Clay** 195
*Robert Laporte and Frank Andresen
with special acknowledgment of the work of Franz Volhard*
- 10. Straw-Bale** 209
Kelly Lerner, Bob Theis, and Dan Smith
- 11. Bamboo** 235
Darrel DeBoer and Karl Bareis

- 12. Earthen Finishes**
- Earth Plasters** 255
Carole Crews
- Earth Floors** 264
Bill and Athena Steen

Part III. APPLICATIONS

- 13. Integrated Systems with Rammed Earth**
- Charles Sturt University, Thurgoona Campus,
New South Wales, Australia** 273
Marci Webster-Mannison
- 14. Straw, Clay, and Carrizo**
- Obregon Project, Northern Mexico** 283
Bill and Athena Steen
- 15. Light-Clay House Additions**
- School/Residence in Wisconsin** 297
Lou Host-Jablonski, AIA
- 16. Variations on Earthbag**
- The Honey House—Moab, Utah** 309
Kaki Hunter and Doni Kiffmeyer
- Residences in Arizona and Wisconsin** 313
Dominic Howes
- Sandbag House, Rum Cay Island, Bahamas** 315
Steve Kemble and Carol Escott
- 17. The Value of Indigenous Ways**
- Habitat for Humanity International** 323
C. Wayne Nelson

18. Building Technology Transfer	317
Raising Straw-Bale Housing for Farmworkers in California	333
<i>Kelly Lerner, Dan Smith, and Bob Theis</i>	
Introduction of Straw-Bale Construction to Mongolia and China	339
<i>Kelly Lerner</i>	
Epilogue	
Finding the Soul of Natural Building	357
<i>Tom Bender</i>	
Appendix A	
Recommended References	365
Appendix B	
Alternative Construction Resource Centers	375
ABOUT THE CONTRIBUTORS	381
INDEX	387