

# Contents

<b>Acknowledgments</b> . . . . .	xiii
<b>Prologue: History of Cordwood Masonry</b> . . . . .	xv
The Origin of Cordwood Construction <i>by William H. Tishler</i> . . . . .	xvi
An Old Cordwood House Near Stockholm <i>by Olle Lind</i> . . . . .	xix
Historical Variations <i>by Olle Hagman</i> . . . . .	xx
Our Personal History <i>by Rob Roy</i> . . . . .	xxii
<b>Introduction</b> . . . . .	1
What is Cordwood Building? . . . . .	1
But Why Build with Cordwood? . . . . .	1
How? . . . . .	2
<b>Part 1: Cordwood Basics</b>	
<b>1. Three Cordwood Masonry Styles</b> . . . . .	7
Cordwood Infilling Within a Strong Timber Frame . . . . .	7
Cordwood as Curved Load-bearing Walls . . . . .	10
Cordwood with Stackwall Corners . . . . .	13
Door Frames . . . . .	16
Summation . . . . .	19
<b>2. The Wood</b> . . . . .	21
What Kind or Species of Wood Is Best? . . . . .	21
How Long Should the Wood Dry? . . . . .	24
Should I Bark (or “Debark”—Means the Same Thing) the Wood? . . . . .	25
How Much Wood Should I Cut? . . . . .	26
How Thick Should the Walls Be in a Cordwood Home? . . . . .	27
How Should I Cut the Wood? . . . . .	28
Split Wood or Round Log-ends? . . . . .	28
Can I Mix Species of Wood in the Same Wall? . . . . .	30

<b>3. Building Cordwood Walls 101</b> . . . . .	31
The Mortar . . . . .	31
Insulation Options . . . . .	35
Building a Cordwood Wall . . . . .	38
Window Bucks . . . . .	41
Pointing . . . . .	45
Cleaning the Log-ends . . . . .	47
<b>4. Building with Cordwood 202</b> . . . . .	49
Wood Expansion . . . . .	49
Wood Shrinkage after the Build . . . . .	52
Mortar Cracks . . . . .	55
When Everything Shrinks—A Solution . . . . .	55
Building Thicker Cordwood Walls Within a Timber Frame . . . . .	58
Time Efficiency . . . . .	60
Stand Back from the Wall . . . . .	61
<b>Part 2: The New State of the Art</b>	
<b>5. Is Cordwood Green?</b> . . . . .	65
Sustainability . . . . .	65
Leaving Little Impact on the Planet . . . . .	66
Low Embodied Energy . . . . .	66
Energy Efficiency . . . . .	68
The Healthy Home . . . . .	68
So, Is Cordwood Masonry Green? . . . . .	68
<b>6. Double-wall Cordwood</b> <i>by Cliff Shockey and Rob Roy</i> . . . . .	69
Introduction . . . . .	69
Solar Design . . . . .	69
Foundations and Under-floor Radiant Heat . . . . .	70
The Double-wall Cordwood Technique . . . . .	71
The Evolution of Double-wall Cordwood . . . . .	74
<b>7. Foam Insulation with Cordwood</b> . . . . .	77
Open Cell Foam . . . . .	77
Soy-Based Foam . . . . .	78
Foam Insulation with Single-wall Cordwood . . . . .	79
<b>8. Bottle-ends and Other Design Features</b> . . . . .	85

Making Bottle-ends . . . . .	85
Creating Bottle-end Designs . . . . .	88
Design Features at Mushwood . . . . .	94
<b>9. Electrical Wiring in Cordwood Masonry Buildings</b>	
<i>by Paul Mikalauskas, Mike Abel and Rob Roy</i> . . . . .	99
Wiring Mushwood . . . . .	103
<b>10. Lime Putty Mortar</b> <i>by Rob Roy and Bruce Kilgore</i> . . . . .	107
A Short History . . . . .	107
Lime Putty Mortar Versus Portland-based Mortar . . . . .	107
Making Lime Putty and Lime Putty Mortar . . . . .	109
Pay Attention to Detail . . . . .	114
<b>11. Cobwood Revisited</b> . . . . .	115
Cobwood at Earthwood . . . . .	116
Our Latest Cobwood Wall Building . . . . .	121
To Summarize . . . . .	123
<b>12. Paper-enhanced Mortar</b> <i>by Jim Juczak, Alan Stankevitz,</i>	
<i>Tom Huber and Rob Roy</i> . . . . .	125
Papercrete, or Paper-enhanced Mortar (PEM) . . . . .	125
My Paper-enhanced Mortar . . . . .	127
Cellulose-enhanced Mortar . . . . .	129
Paper-enhanced Mortar Observations . . . . .	131
<b>13. Cedar Eden: Design Considerations</b> <i>by Tom Huber</i> . . . . .	133
The Pattern that Connects . . . . .	133
Place-based Design Considerations for Cold Climates . . . . .	134
The Hobbit Way of Homesteading . . . . .	134
A Cabin with Four Doors . . . . .	135
Intentional Patterns—The Nature of Order; Building as Sacred Practice . . . . .	136
Retreat from the World . . . . .	137
<b>14. Cordwood-to-mortar Ratio: An Analysis</b> . . . . .	139
Consistency in Cordwood Build Quality . . . . .	139
Varying Wood-to-mortar Ratios . . . . .	140
Impact of Wood-to-mortar Ratio . . . . .	142

<b>15. Cordwood Cutoff Table for a Chainsaw</b>	
<i>by Rob Roy and Bruce Kilgore</i> . . . . .	143
Fabrication Skills Needed . . . . .	144
You Will Also Need . . . . .	144
The Frame . . . . .	144

### Part 3: Case Studies from Around the World

<b>16. The Arcus Center for Social Justice Leadership</b>	
<i>by Studio Gang Architects</i> . . . . .	151
Why Wood Masonry? . . . . .	151
Learning from the Experts . . . . .	154
Playing by the Rules . . . . .	154
Thermal and Structural Constraints . . . . .	156
Pushing the Limits with Digital Tools . . . . .	158
Mixing It Up . . . . .	160
Not the End . . . . .	162
<b>17. My Cordwood Construction Evolution</b> <i>by Geoff Huggins</i> . . . . .	163
Cordwood Constants . . . and Why . . . . .	163
Cordwood Embellishments . . . and Why . . . . .	165
<b>18. Adirondack Cordwood Cabin</b> <i>by Rarilee Conway (with James Conway)</i> . . . . .	171
If I Was to Do It Again . . . . .	173
<b>19. Ravenwood: A Labor of Love in Northern New York</b>	
<i>by Bruce Kilgore (with Nancy Dow)</i> . . . . .	175
Our Cordwood Odyssey . . . . .	175
A Five-year Plan . . . . .	176
The Trisol Design . . . . .	178
Breaking Ground . . . . .	179
Racing to Get the Roof On . . . . .	181
Cordwooding Commences . . . . .	181
Closed In! . . . . .	183
What Worked . . . and Hard Lessons Learned . . . . .	184
<b>20. Hexadecagons in Hawaii and Tasmania</b>	
<i>with Peter Robey and Blythe Tait (and with help from Ben Oliveros)</i> . . . . .	187
Builder Ben . . . . .	189
Australia's First Council-approved Cordwood Residence? . . . . .	191

<b>21. The Hermit’s Hut</b> . . . . .	197
Cultivating Coincidence . . . . .	199
Siliconized Sealer . . . . .	200
<b>22. La Casa del Trunco</b> . . . . .	203
Cultivating a Coincidence in Nicaragua . . . . .	203
Solentiname’s Cordwood Homestead . . . . .	204
The Cordwood Dorm Room . . . . .	207
When We Got Home . . . . .	208

**Part 4: Economics and Code**

<b>23. The Mortgage-free Cordwood Home</b> . . . . .	213
The Grubstake . . . . .	214
The Land . . . . .	215
The Temporary Shelter . . . . .	215
Keep It Small . . . . .	219
Keep It Simple . . . . .	221
Use Recycled Materials . . . . .	223
Work Parties . . . . .	224
The Add-on House Strategy . . . . .	224
<b>24. Getting a Building Permit for a Cordwood Home</b> . . . . .	227
Part 1: An Engineering Viewpoint <i>by Dr. Kris J. Dick, P.E.</i> <i>and Professor A.M. Lansdown</i> . . . . .	227
Part 2: A Code Enforcement Officer’s Viewpoint <i>by Thomas M. Kwiatkowski</i> . . . . .	235
Part 3: Other Cordwood Code Issues <i>by Rob Roy</i> . . . . .	236
<b>Afterword: Where We Go From Here</b> . . . . .	243
<b>Annotated Cordwood Masonry Bibliography</b> . . . . .	245
<b>Glossary of Terms</b> . . . . .	249
<b>Appendix: Products</b> . . . . .	253
<b>Index</b> . . . . .	255
<b>About the Author</b> . . . . .	263
<b>A Note About the Publisher</b> . . . . .	264