

LOCAL SYSTEMS CONTENTS

0.0. Introduction	11
0.1. <i>Preliminary Thoughts on Local Ecological Design</i>	12
0.1.1. What this work is Not	
0.1.2. What this work Is	
0.1.3. What we need to do & Why it would work	
0.1.4. What can you do?	
0.2. <i>Designing Local Places</i>	16
0.2.1. Starting with Local Ecological Design	
0.2.2. A Snapshot of Local Ecological Design	
0.2.3. How should We Regard Local Ecological Design?	
0.3. <i>Design Science as Poetic Production (Conversation with R.B. Fuller)</i>	19
0.3.1. Allowing Flatscapes of Design	
0.3.2. Designing Real Living Places: Eutopias	
0.3.3. How Can We Redesign the Experiment?	
0.3.4. Expanding Poetic Production	
0.4. <i>Deep Ecology and the Potters in Our Planet (By Arne Naess)</i>	26
1.0. Preparing Tools for Challenges to Design	29
1.1. <i>Naming with Metaphors</i>	
1.2. <i>Questioning Things: Socratic, Hardinian, Maslovian Methods</i>	32
1.3. <i>Performing Ecological Thought Experiments</i>	37
1.3.1. Sample Thought Experiments: Forests, Populations & Roads	
1.3.2. What if all Urban Concentrations were Arcologies?	
1.3.3. Conclusions: And Then What?	
1.4. <i>Using Systems Synthesis & Other Tools</i>	42
1.4.1. Systems Analysis	
1.4.2. Ecological Synthesis	
1.5. <i>Threading Systems in Fields</i>	56
1.5.1. Fields (Properties & Changes)	
1.5.2. Living Fields (Person & Place)	
1.6. <i>Having Educated Fun with Words Numbers Links & Images</i>	66
2.0. Approaching Local Ecosystems with Design	72
2.1. <i>Human Design</i>	
2.1.1. Why design?	
2.1.2. What is the Local Scale?	
2.1.3. Why Start with the Local?	
2.2. <i>Holecological History & Life</i>	75
2.3. <i>What is Natural Design?</i>	76
2.3.1. Does Nature design?	
2.3.2. Natural Design	
2.3.3. Principles of Nature?	
2.4. <i>What is Traditional Design?</i>	86
2.4.1. What is Traditional Design?	
2.4.2. What is the Difference between Natural & Human Design?	
2.4.3. Design Components Elements & Variations	
2.4.4. Principles of Traditional Design	

2.4.5. Applied Design Stages	
2.4.6. Summary	
2.5. <i>What is Ecological Design?</i>	100
2.5.1. Definition of Ecological Design	
2.5.2. Differences between Traditional & Ecological	
2.5.3. Ecological Design Components Elements & Variations	
2.5.4. Properties of Ecological Design	
2.5.5. Principles of Ecological Design	
2.5.6. Applied Ecological Design as Lessons	
2.5.7. Applying Ecological Design to Places	
2.5.8. Ecological Design Management	
2.6. <i>Fitting Local with Regional & Global Designs</i>	127
2.7.1. Regions Emerge from & Constrain Local Systems	
2.7.2. Regions are Constrained by the Global System	
2.7.3. Are Local Designs Ever Independent of Regional Designs?	
2.7.4. Leaving Hooks & Flexibility	
2.7. <i>Insurmountable Problems at the Local Level</i>	130
2.8.1. Water & Drought	
2.8.2. Heat & Control	
2.8.3. Liberty & Crime	
2.8.4. The Maintenance of Civilization	
3.0. Naming Nature for Design	135
3.1. <i>Local Design Factors: Ecosystems Communities & Organisms</i>	
3.1.1. Communities & Ecosystems	
3.1.3. Populations Organisms & Organic Structures	
3.2. <i>Local Design Factors: Landscapes Forms & Structures</i>	146
3.2.1. Landscapes	
3.2.2. Biomes	
3.2.3. Dealing with Change	
3.3. <i>Local Design Factors: Local & Planetary Cycles</i>	150
3.3.1. Individual Cycles	
3.3.2. Interactions of Cycles with Ecosystems	
3.4. <i>Local Design Factors: Intricate Patterns</i>	156
3.4.1. Distribution & Density	
3.4.2. Surprise & Joy at Diversity	
3.4.3. Unique Places	
3.4.4. Living Places as Invested Ecosystems	
3.5. <i>Defining Local Places Ecologically</i>	163
3.5.1. Places as Healthy Ecosystems	
3.5.2. Place Health at the Local Level	
3.5.3. Details & Framework	
3.6. <i>Designing Elements to Bioregions</i>	169
3.6.1. Designing Elements & Processes	
3.6.2. Designing Ecosystems & Local Landscapes	
3.6.3. Designing Patterns	
3.6.4. Designing Landscapes & Fitting Humanity Inside	

4.0. Designing Nature	172
4.1. <i>Local Problems: Water</i>	
4.1.1. Water Cycle Restated	
4.1.2. Interaction of Cycles	
4.1.3. Problems with Disrupted Cycles	
4.1.4. Valuing Water	
4.1.5. Designing Water Flows	
4.2. <i>Designing a Local Wetland Ecosystem</i>	176
4.2.1. Wetlands	
4.2.2. Paradise Creek	
4.3. <i>Designing Local Cycles</i>	197
4.3.1. Designing Cycles	
4.3.2. Designing to Adjust to Change	
4.4. <i>Local Goals for Forests (By Twila Jacobsen et al.)</i>	205
4.4.1. Local Goals	
4.4.2. Design Considerations	
4.5. <i>Restoration & Destruction of Altazor Forest</i>	209
4.5.1. Ecology of the Forest	
4.5.2. Human History of the Forest	
4.5.3. Design of the Forest	
4.5.4. Destruction & Lessons	
4.6. <i>Local Animal Patterns</i>	229
4.6.1. Wild Animals as Individuals Species & Ecosystems	
4.6.2. Interactions: Disturbance Exploitation & Interference	
4.6.3. Trophic Cascades & Networks (By M. W. Fox)	238
4.7. <i>Wolves in the Balkans</i>	241
4.7.1. Wolf Populations in central Bulgaria (By A. Stanchev et al.)	243
4.7.2. Wolves in Western Bulgaria (By E. Tsingarska et al.)	252
4.7.3. Wolf Models	
4.8. <i>Wilderness Definition & Determining Local Wilderness Areas</i>	263
4.8.1. Wilderness as Empty Waste	
4.8.2. Wooing the Wild	
4.8.3. Local Wildness as a Contradiction?	
4.8.4. Determining Local Wilderness Designs & Extents	
5.0. Facing Culture for Design	282
5.1. <i>What is Humanity?</i>	
5.1.1. Living Together: Participating in the Flow of Life	
5.1.2. Adaptive Patterns of Living: Ecstasy & Otherness	
5.1.3. Attachment to Place: Joy of Entanglement	
5.1.4. Human Ecology & Political Limits	
5.2. <i>What is Culture?</i>	283
5.2.1. Animate Culture	
5.2.2. What is Human Culture?	
5.2.3. Dependence & Constraints	
5.2.4. Health of a Culture	
5.3. <i>Local Design Factors: Adaptive Reconstructive Patterns—Agriculture</i>	296
5.3.1. Historical Pattern of Agriculture	
5.3.2. Farmland Designs	
5.3.3. Timberland Plantation Designs	

5.4. <i>Local Design Factors: Adaptive Patterns—Technology History</i>	297
5.4.1. Historical Pattern of Technology	
5.4.2. Tools Small Things Electronics	
5.4.3. Houses & Buildings (Super Adobe) (By J.B. Cobb Jr.)	305
5.4.4. Transportation/vehicles	
5.5. <i>Local Design Factors: Adaptive Patterns—Urbanization & Civilization</i>	309
5.5.1. Cities & Patterns (Ideals or Traps)	
5.5.2. Large Buildings	
5.5.3. Small Place Design	
5.5.4. Zones: Neighborhoods & Campuses	
5.5.5. Whitaker Bayou (By J. Bacher et al.)	317
5.5.6. Ringling Campus (By S. Adams et al.)	324
5.5.7. Ringling Library (By Y. Shtibelman et al.)	329
5.5.8. Illustration Building (By S. Rajpathak et al.)	339
5.5.9. Recreation Building (By C. Anderson et al.)	347
5.6. <i>Design Factors: Adaptive Patterns—Civilization & Industrialization</i>	351
5.6.1. Patterns of Science Art & Music (By C.F. More et al.)	367
5.6.2. Processes	
5.6.3. Design of Industrial Ecologies	
5.7. <i>Local Problems: Ecosystem & Cultural Collapse</i>	364
5.7.1. The Spectrum of Collapse	
5.7.2. Discussion of Collapse	
5.7.3. Patterns of Collapse: Recovery & Renewal	
5.7.4. Future Collapse: What is there to Fear?	
5.8. <i>Local Problems: Culture & Bad Images</i>	375
5.8.1. Patterns & Cultural Transformations	
5.8.2. Challenges & Traps	
5.8.3. Problems Facing Individual Cultures & a Local Culture	
5.9. <i>Designing Cultural Units based on Primary Cultures</i>	382
5.9.1. Begetting Problems	
5.9.2. Redefining Culture	
5.9.3. A Frame for Cultures	
5.9.4. Summary: Nightmares & Wisdom	
6.0. Designing Domiture	385
6.1. <i>Culture & Nature Coevolving</i>	387
6.2. <i>Practicing Ecosystem Medicine</i>	388
6.2.1. Brief History of Medicine	
6.2.2. Strengths & Problems of Medicine	
6.2.3. Extensions to Medicine: Health to Conservation	
6.2.4. Ecosystem Medicine	
6.3. <i>Applying Medicine: Mountain Grove Forest</i> (By M. Barnes et al.)	396
6.3.1. The Setting	
6.3.2. Forest History	
6.3.3. Design Objectives	
6.3.4. Strategies & Actions	
6.4. <i>Local Problems: Conversion & Interference</i>	420
6.4.1. Cultural Conversion of Places	
6.4.2. Interference	
6.4.3. Humanity as an Agent of Change in History	

6.4.4. Practicing Noninterference	
6.5. <i>Local Problems: Technology</i>	427
6.5.1. Physical Problems	
6.5.2. Cultural problems	
6.5.3. Conclusion: Questioning a Machine Image	
6.6. <i>Integrating & Limiting Local Technology Designs</i>	439
6.6.1. Purposes of Technology	
6.6.2. Usefulness (Alternative & Appropriate)	
6.6.3. Combining Tools Machines Automaton & Hybrids	
6.7. <i>Designing Adaptive Patterns: Agriculture—Industrialization</i>	446
6.7.1. Calculating Optimum Local Human Populations	
6.7.2. Redesigning Agriculture	
6.7.3. Redesigning Cities	
6.7.4. Redesigning Transportation	
6.7.5. Redesigning Technology (By A. Drengson)	485
6.7.6. Redesigning Industries	
6.7.7. Redesigning Civilization	
6.8. <i>Designing Education for Design through Education</i>	493
6.8.1. Discussion of Design Education	
6.8.2. Comprehensive Design Curriculum	
7.0. Managing Design Levels	496
7.1. <i>Local Problems: Growth Inequality Poverty Dominance & Slavery</i>	
7.1.1. Growth—Population & Economics	
7.1.2. Inequality—Economic & Social	
7.1.3. Poverty & Consumption	
7.1.4. Cultural Dominance: Colonialization	
7.1.5. Cultural Dominance: Slavery	
7.2. <i>Local Solutions: Avoiding Adaptations & Traps</i>	510
7.2.1. Adaptation & Drift	
7.2.2. Drifts & Traps	
7.2.3. Synergetics in Practice (Taking up the Past)	
7.2.4. Emergency Designing	
7.2.5. Straw Houses & Vernacular Architecture	
7.2.6. Sharing Renting & Leasing	
7.3. <i>Local Design Factors: City Shapes & Arcologies</i>	519
7.3.1. Shaping Cities	
7.3.2. Wild Technology & Artificial Nature	
7.3.3. Virtual Arcologies	
7.3.4. Oregon Douglas-fir Tree Arcology	
7.3.5. Floating City of Venice Florida (By C. Beasley & H. Ryder)	535
7.3.6. Mumbai Shellarcology	
7.4. <i>Lean Linear Arcologies—Arterial Arcology</i> (By Paolo Soleri)	557
7.5. <i>Leaping to Urban Sustainability in China</i> (By J.B. Cobb Jr.)	569
7.6. <i>Local Design Factors: Ecological Economics to Koinomics</i>	577
7.6.1. Holeconomics & Ecological Economics	
7.6.2. Local Problems: Corporations	
7.6.1. Local Design Solutions: Charting Responsible Corporations	
7.7. <i>Managing Multiscalar Interacting Technologies</i>	607
7.7.1. Threats of Technologies & Scales	

7.7.2. Extreme Technology & Scale	
7.7.3. Designing Hybrid Systems & Mixed Communities	
7.7.4. Managing Mixed Systems with Design	
7.8. <i>Local Ecological Planning & Monitoring</i>	617
7.8.1. Ecological Planning & Limits	
7.8.2. Creating Monitoring of Local Properties	
7.8.3. Preparing for Emergencies & Catastrophes	
7.8.4. Designing Links	
7.9. <i>Landscapes & Networks</i>	620
8.0. Designing Local Good Places	622
8.1. <i>Local Problems: Intolerance Conflict & War—Grey Earth</i>	
8.1.1. Intolerance	
8.1.2. Kinds of Conflict	
8.1.3. War	
8.1.4. Summary: Inseparable Behaviors	
8.2. <i>Local Design Factors: Commons</i>	627
8.2.1. Tragedy of the Commons	
8.2.2. Actions Profits & Losses	
8.2.3. Resolution of Tragedy	
8.3. <i>Designing Behavioral Constraints: Ethics & Religions</i>	629
8.3.1. Plain Ethics, Living Alone; Pan Ethics, Living Together	
8.3.2.. Relating Being to Rights	
8.3.3. Binding Humanity to Places	
8.4. <i>Local Design Factors: Ecological Politics & Panocracy</i>	636
8.4.1. Forms of Governing & Leading	
8.4.2. Functions of Politics	
8.4.3. Ecological Politics & New Functions	
8.4.4. Designing a Good Society	
8.5. <i>Local Design Factors: Cultural Solutions</i>	655
8.5.1. The Health of Cultures	
8.5.2. Comparing Ecosystems & Cultures	
8.5.3. Imagining Place: Human Cosmologies	
8.5.4. Imagination & Metabolism	
8.5.5. Fitting in Place—Image & Place	
8.6. <i>Creating Legal Protections for Ecosystems</i>	659
8.6.1. Incorporating Hardwood Hammock: A Thought Experiment	
8.6.2. Putting a Place in Trust: Sweet Beauty Farm	
8.7. <i>Wild Design: Creating Local Designs</i>	665
8.7.1 Local Scale Designs	
8.7.2. Coevolution of Design & Wildness	
8.7.3. Wild Design	
8.7.4. Restoring Balance	
8.8. <i>Designing Good Places Culturally & Politically</i>	668
8.8.1. Local Functions	
8.8.2. Individual Responsibilities	
8.8.3. Considering Realistic Arguments	
8.8.4. Eutopian Actions at All Levels	
8.8.5. Working All Together	
8.9. <i>Rethinking Design</i>	684

- 8.9.1. Rethinking
- 8.9.2. Starting to Advertise Goodness
- 8.9.3. Learning to Love Home
- 8.9.4. Brief Summary of Local Ecological Design
- 8.9.5. But, What Can We Do?

9.0. Appendix

693

- 9.1. Notes
- 9.2. Appendices
- 9.3. Glossary
- 9.4. Bibliography
- 9.5. Index & Expanded Contents
- 9.6. Biographies
- 9.7. Contacts: Web pages & Email Addresses