

Contents

| | | |
|---------------------------|--|----|
| 1 | Introduction | 1 |
| 1.1 | Background | 1 |
| 1.2 | Modernism | 5 |
| 1.3 | The Significance of Space | 9 |
| 1.4 | The Social, Cognitive and Experiential | 11 |
| 1.4.1 | Social Properties | 11 |
| 1.4.2 | Cognitive Properties | 13 |
| 1.4.3 | Experiential Properties | 14 |
| 1.5 | Structuring the Research | 16 |
| 1.6 | Presentation and Precision | 19 |
| Part I Methods | | |
| 2 | Space Syntax, Theory and Techniques | 23 |
| 2.1 | Introduction | 24 |
| 2.2 | Graphs and Space | 25 |
| 2.3 | Convex Space Analysis | 31 |
| 2.4 | Axial Line Analysis | 35 |
| 2.5 | Intersection Point Analysis | 41 |
| 2.6 | Visibility Graph Analysis | 46 |
| 2.7 | Conclusion | 50 |
| 3 | Spaces, Lines and Intersections | 53 |
| 3.1 | Introduction | 53 |
| 3.2 | Convex Space Analysis | 54 |
| 3.3 | Axial Line Analysis | 70 |
| 3.4 | Intersection Point Analysis | 87 |
| 3.5 | Conclusion | 93 |

| | | |
|---|--|-----|
| 4 | Isovist Analysis, Theories and Methods | 95 |
| 4.1 | Introduction | 95 |
| 4.2 | Background to Visibility Analysis | 96 |
| 4.3 | Methodological Considerations | 100 |
| 4.4 | Manual Isovist Construction | 105 |
| 4.5 | Worked Example | 108 |
| 4.5.1 | Surface Vertex Method | 109 |
| 4.5.2 | Radial Projection Method | 110 |
| 4.6 | Deriving Quantitative Measures | 113 |
| 4.7 | Isovist Representation | 119 |
| 4.8 | Using Isovists for Analysis | 122 |
| 4.9 | Conclusion | 123 |
| | | |
| Part II Mies, Neutra and Murcutt | | |
| 5 | Mies van der Rohe: Characteristics of the Free Plan | 127 |
| 5.1 | Introduction | 128 |
| 5.2 | Mies van der Rohe | 130 |
| 5.3 | Method | 133 |
| 5.3.1 | Hypotheses | 133 |
| 5.3.2 | Approach | 136 |
| 5.4 | Results | 138 |
| 5.4.1 | Wolf House, Guben, Poland (1927) | 138 |
| 5.4.2 | Lange House, Krefeld, Germany (1930) | 142 |
| 5.4.3 | Esters House, Krefeld, Germany (1930) | 145 |
| 5.4.4 | Lemke House, Berlin, Germany (1933) | 148 |
| 5.4.5 | Farnsworth House, Plano, Illinois, USA (1951) | 152 |
| 5.5 | Discussion | 169 |
| 5.6 | Conclusion | 175 |
| 6 | Richard Neutra: Spatial Theory and Practice | 179 |
| 6.1 | Introduction | 179 |
| 6.2 | Neutra and Biorealism | 182 |
| 6.3 | Method | 184 |
| 6.3.1 | Hypotheses | 184 |
| 6.3.2 | Approach | 186 |
| 6.4 | Results | 188 |
| 6.4.1 | Kaufmann Desert House, Palm Springs, California, USA (1947) | 188 |
| 6.4.2 | Tremaine House, Montecito, California, USA (1948) | 191 |
| 6.4.3 | Moore House, Ojai California, USA (1952) | 195 |

| | | |
|--|--|------------|
| 6.4.4 | Kramer House, Norco, California, USA (1953) | 198 |
| 6.4.5 | Oxley House, La Jolla, California, USA (1958) | 201 |
| 6.5 | Conclusion | 204 |
| 7 | Glenn Murcutt: Form and Social Function | 207 |
| 7.1 | Introduction | 208 |
| 7.2 | Spatial Structure | 209 |
| 7.3 | Method | 211 |
| 7.3.1 | Hypotheses | 211 |
| 7.3.2 | Approach | 212 |
| 7.4 | Results | 214 |
| 7.4.1 | Marie Short House, Kempsey, New South Wales, Australia (1975) | 214 |
| 7.4.2 | Nicholas House, Blue Mountains, New South Wales, Australia (1980) | 216 |
| 7.4.3 | Carruthers House, Blue Mountains, New South Wales, Australia (1980) | 219 |
| 7.4.4 | Fredericks House, Jambaroo, New South Wales, Australia (1982) | 221 |
| 7.4.5 | Ball-Eastaway House, Glenorie, New South Wales, Australia (1982) | 224 |
| 7.4.6 | Magney House, Bingie Bingie, New South Wales, Australia (1984) | 226 |
| 7.4.7 | Simpson-Lee House, Mount Wilson, New South Wales, Australia (1994) | 228 |
| 7.4.8 | Fletcher-Page House, Kangaroo Valley, New South Wales, Australia (1998) | 230 |
| 7.4.9 | Southern Highlands House, Kangaloon, New South Wales, Australia (2001) | 233 |
| 7.4.10 | Walsh House, Kangaroo Valley, New South Wales, Australia (2005) | 235 |
| 7.5 | Comparative Analysis | 237 |
| 7.6 | Conclusion | 245 |
| Part III Frank Lloyd Wright | | |
| 8 | Wright and Spatial Preference Theory | 249 |
| 8.1 | Introduction | 250 |
| 8.2 | Environmental Preference Theory | 251 |
| 8.3 | Environmental Preference Theory and Frank Lloyd Wright | 256 |
| 8.4 | Isovists and Environmental Preference | 261 |
| 8.5 | Initial Application of Isovists to Perceptual Properties | 262 |

| | | |
|-----------|--|------------|
| 8.6 | Results | 265 |
| 8.6.1 | Measures Which Isolate Prospect or Refuge | 265 |
| 8.6.2 | Measures Which Combine Prospect and Refuge | 270 |
| 8.6.3 | Measures for Mystery | 271 |
| 8.6.4 | Measures for Complexity | 272 |
| 8.6.5 | Measures for Enticement | 273 |
| 8.7 | Conclusion | 274 |
| 9 | Experiencing Wright's Living Spaces | 277 |
| 9.1 | Introduction | 278 |
| 9.2 | Psychology, Geometry and Domesticity | 279 |
| 9.3 | Method | 281 |
| 9.3.1 | Hypotheses | 281 |
| 9.3.2 | Approach | 284 |
| 9.4 | Results | 286 |
| 9.5 | Analysis | 290 |
| 9.6 | Conclusion | 300 |
| 10 | Enticement in, and Through, Wright's Architecture | 303 |
| 10.1 | Introduction | 304 |
| 10.2 | Environmental Experience | 306 |
| 10.3 | Method | 308 |
| 10.3.1 | Hypotheses | 308 |
| 10.3.2 | Approach | 310 |
| 10.4 | Prairie House Results | 313 |
| 10.4.1 | Henderson House Elmhurst, Illinois, USA (1901) | 313 |
| 10.4.2 | Heurtley House, Oak Park, Illinois, USA (1902) | 317 |
| 10.4.3 | Cheney House Oak Park, Illinois, USA (1903) | 321 |
| 10.4.4 | Evans House, Chicago, Illinois, USA (1908) | 323 |
| 10.4.5 | Robie House, Chicago, Illinois, USA (1910) | 327 |
| 10.5 | Textile-block House Results | 335 |
| 10.5.1 | Millard House, Los Angeles, California, USA (1923) | 335 |
| 10.5.2 | Storer House, Los Angeles, California, USA (1923) | 340 |
| 10.5.3 | Freeman House, Los Angeles, California, USA (1923) | 344 |
| 10.5.4 | Ennis House, Los Angeles, California, USA (1924) | 349 |
| 10.5.5 | Lloyd Jones House, Tulsa, Oklahoma, USA (1929) | 353 |

| | | |
|-----------|---|------------|
| 10.6 | Usonian House Results | 358 |
| 10.6.1 | Jacobs House, Madison, Wisconsin, USA (1936) | 358 |
| 10.6.2 | Schwartz House, Two Rivers, Wisconsin, USA (1939) | 363 |
| 10.6.3 | Lloyd Lewis House, Libertyville, Illinois, USA (1940) | 367 |
| 10.6.4 | Affleck House, Bloomfield Hills, Michigan, USA (1941) | 371 |
| 10.6.5 | Palmer House, Ann Arbor, Michigan, USA (1950) | 375 |
| 10.7 | Discussion | 379 |
| 10.7.1 | Hypothesis 1: Prospect and Refuge | 380 |
| 10.7.2 | Hypothesis 2: Reduplication | 383 |
| 10.7.3 | Hypothesis 3: Enticement | 384 |
| 10.7.4 | Hypothesis 4: Complexity and Mystery | 386 |
| 10.8 | Conclusion | 389 |
| 11 | Conclusion | 391 |
| 11.1 | Social, Cognitive and Experiential Properties of Modernism | 392 |
| 11.1.1 | Free Plan | 392 |
| 11.1.2 | Spatial Choreography | 394 |
| 11.1.3 | Social Function | 395 |
| 11.1.4 | Existence, Experience and Emotion | 397 |
| 11.2 | Conclusion | 400 |
| | References | 401 |
| | Index | 417 |