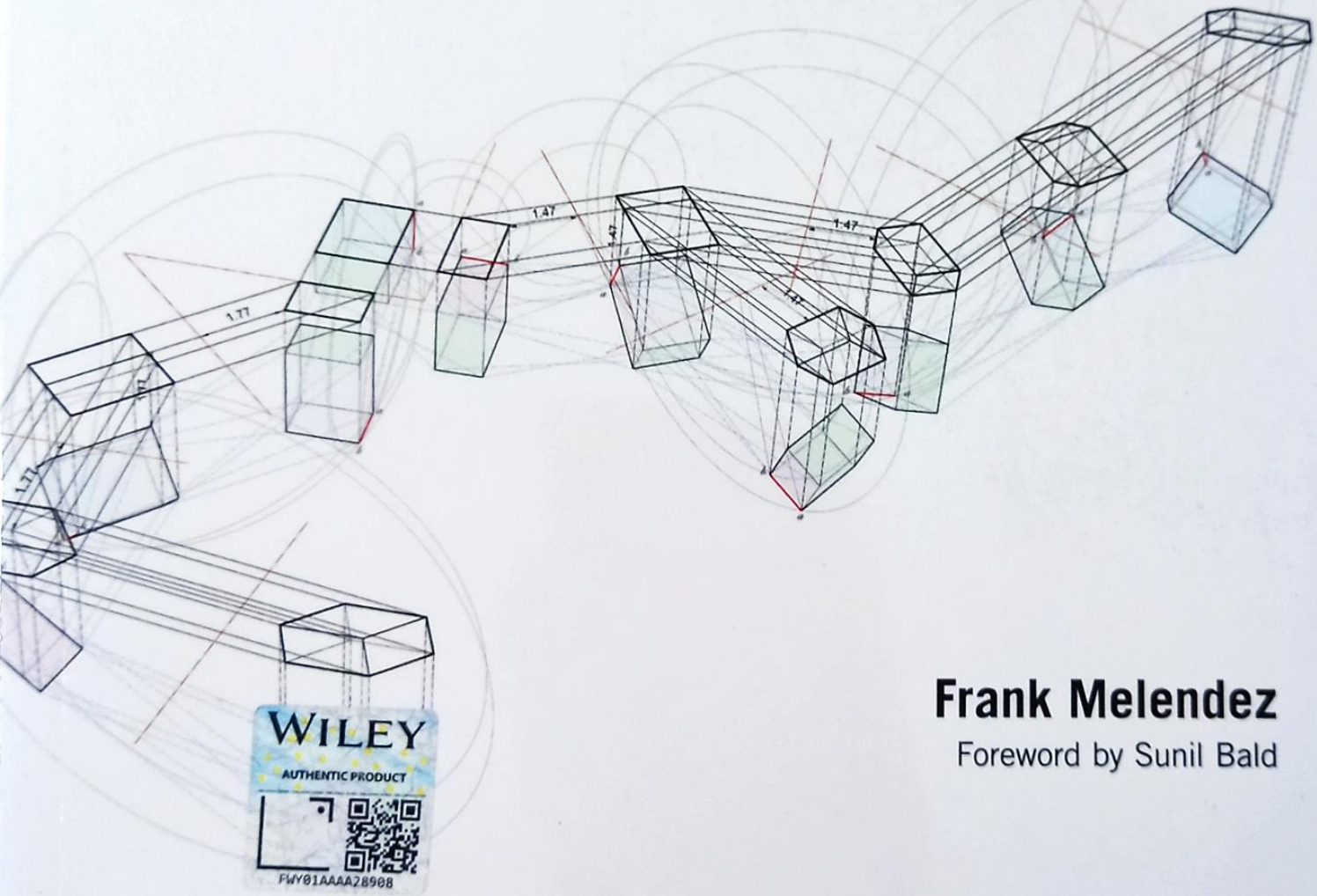
DRAWING FROM THE MODEL

Fundamentals of Digital Drawing, 3D Modeling, and Visual Programming in Architectural Design



Frank Melendez
Foreword by Sunil Bald

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Frank Melendez

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Contents

Foreword viii
Acknowledgments ix
Introduction x

Part 1: Architectural Representation and Digital Technologies

Chapter 1: Architectural Drawing 3
1.1 Drawing and Perception 3
1.2 Drawing from Observation and Imagination 6
1.3 Drawing and Projection 11
1.4 Drawing Methods 15
Endnotes 29

Chapter 2: Architectural Models 30
2.1 Physical Models 30
2.2 3D Models 37
2.3 Digital Fabrication 47
Endnotes 58

Chapter 3 Architecture and Computing 60
3.1 Digital Concepts 60
3.2 Computing in Architecture 63
3.3 Developments in 3D Modeling 66
Endnotes 69

Part 2: 3D Modeling and Geometry

Chapter 4: The 3D Modeling Environment 72
4.1 Surface Types 72
4.2 The Rhinoceros Interface 74
4.3 Units and Scale 79
4.4 Navigation 80
4.5 Visualization Methods 80
Endnote 80

Chapter 5: 2D Drawing 81
5.1 Drafting 81
5.2 Points and Lines 82
5.3 Curve Control Points 88
5.4 Working with Lines and Planar Curves 92
Endnotes 98

Chapter 6: 3D Modeling 99
6.1 Solid Models. 99
6.2 Planar and Space Curves 104
6.3 Surfaces 105
6.4 Modeling NURBS Surfaces 109
6.5 Working with NURBS Surfaces 112
Endnotes 118

Chapter 7: Generating Linework 119
7.1 Wireframe Linework 119
7.2 Contour Linework 121
7.3 Paneling Linework 124
Endnote. 125

Part 3: Architectural Design Drawings and Graphics

Chapter 8: Generating 2D Projections. 128
8.1 Architectural Projections. 128
8.2 Setting Up a View 138
8.3 Clipping Planes. 139
8.4 Orthographic Projections 140
8.5 Axonometric Projections 145
8.6 Perspective Projections 147
Endnotes 149

Chapter 9: Architectural Design Drawings 150
9.1 Linework Overview 150
9.2 Exporting Linework 153
9.3 The Adobe Illustrator Interface 165
9.4 Setting Up the Page 168
9.5 Line Weights and Line Types 170
9.6 Lines, Curves, and Shapes 175
9.7 Color 179
9.8 Text 185
9.9 Raster Graphics. 188
Endnotes 192

Part 4: Computational Design

Chapter 10: Parameters and Algorithms 195
10.1 Parameters and Constraints 195
10.2 Algorithms 197
Endnotes 198

Chapter 11: Visual Programming 199
11.1 The Grasshopper Interface 199
11.2 Visualization Methods 202
11.3 Components 203
11.4 Component Types 205
Endnotes 216

Chapter 12: Geometric Patterns 217
12.1 Tessellations 217
12.2 Spirals 222
12.3 Pattern Effects 227
Endnotes 235

Chapter 13: Parametric Modeling 236
13.1 Parametric Surfaces 236
13.2 Paneling Surfaces 238
13.3 Modular Assemblies 241
Endnotes 252

Chapter 14: Simulations and Data Visualizations 253
14.1 Simulations 253
14.2 Environmental Simulations 255
14.3 Physics Simulations 262
Endnotes 268

Chapter 15: Robotics and Physical Computing 269
15.1 Robotics 269
15.2 Physical Computing 277
15.3 Arduino Hardware and Software 283
Endnotes 297

Appendix: Design Drawing and Modeling Exercises
Drawing Exercises 298
3D Modeling Exercises 305
Computational Design Exercises 313

Selected Bibliography 321
Index 325

Bridges traditional and contemporary methods of creating architectural design drawings and 3D models through digital tools and computational processes

Drawing from the Model: Fundamentals of Digital Drawing, 3D Modeling, and Visual Programming in Architectural Design presents architectural design students, educators, and professionals with a broad overview of traditional and contemporary architectural representation methods. The book offers insights into developments in computing in relation to architectural drawing and modeling, by addressing historical analog methods of architectural drawing based on descriptive geometry and projection, and transitioning to contemporary digital methods based on computational processes and emerging technologies.

Drawing from the Model offers digital tools, techniques, and workflows for producing architectural design drawings (plans, sections, elevations, axonometrics, and perspectives), using contemporary 2D drawing and 3D modeling design software. Visual programming is introduced to address topics of parametric modeling, algorithmic design, computational simulations, physical computing, and robotics. The book focuses on digital design software used in higher education and industry, including Robert McNeel & Associates Rhinoceros® (Rhino 6 for Windows), Grasshopper®, Adobe Illustrator® CC, and Arduino, and features an appendix filled with 10 design drawing and 3D modeling exercises intended as educational and pedagogical examples for readers to practice and/or teach workflows that are addressed in the book.

- Bridges analog hand-drawing and digital design drawing techniques
- Provides comprehensive coverage of architectural representation, computing, computer-aided drafting, and 3D modeling tools, techniques, and workflows, for contemporary architectural design drawing aesthetics and graphics.
- Introduces topics of parametric modeling, algorithmic design, computational simulation, physical computing, and robotics through visual programming environments and processes.
- Features tutorial-based instruction using the latest versions of Rhinoceros® (Rhino 6 for Windows), Grasshopper®, Adobe Illustrator® CC, and Arduino.

FRANK P. MELENDEZ teaches at The Bernard and Anne Spitzer School of Architecture, City College of New York. His teaching and research engage topics pertaining to architectural drawing and 3D modeling, digital fabrication, computational design, emerging materials, responsive systems, physical computing, and robotics. He has held academic appointments at Carnegie Mellon University and Louisiana State University, and has been supported through grants and fellowships, including the MacDowell Colony. Frank is a partner at Augmented Architectures, a research and design practice in New York, NY, and has professional experience working at prominent offices, including Gehry Partners, LLP and Urban A&O. He holds a Bachelor of Architecture degree from the University of Arizona and a Master of Architecture degree from Yale University.

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