

Contents

ACKNOWLEDGMENTS, XVII

INTRODUCTION, XIX

I Previsualization

I

Introducing the Previsualization Process, 3

Step-by-Step Previsualization, 3

Utilizing Environmental References and Sketches, 4

Architecture for Game Levels, 5

Basic Environmental Design, 6

Function, 8

Room Flow, 11

Interior to Exterior, 12

Reinforcing Mood, 12

Paper-Based Level Blocking, 13

Quick Topographic Maps, 13

Case Study Comments on Previsualization, 17

Mega Tips, 22

2 Level Planning and Building

23

Planning Your Level Work, 26

Prefabricated Geometry and Modularity, 27

Scale and Grid Sizing Considerations, 28

Avoiding Common Level Mistakes, 30



Level Stubbing Walk-Through,	31
<i>Step One: Working from Your Topographic Sketches,</i>	33
<i>Step Two: Create Contour Lines,</i>	34
<i>Step Three: Build a Mesh from Your Contour Lines,</i>	35
<i>Step Four: Utilize File Referencing to Build Up and</i> <i>Populate Your Level,</i>	35
<i>Step Five: Start Checking Layout Details,</i>	37
Game Prototyping,	37
Post Level Stubbing Considerations,	38
<i>Adapting Architecture and Terrain to Games,</i>	39
<i>Checking Character Flow Throughout a Level,</i>	40
<i>Jump Heights, Hazards, and Scale,</i>	41
<i>Keeping the Big Game Picture in View,</i>	42
<i>The Early Evolution of Levels,</i>	43
<i>The Importance of Early Feedback,</i>	44
<i>Are Your Level Goals Enhancing Your Game Vision?,</i>	45
Case Study Comments on Level Execution,	45
Mega Tips,	51

3 Lighting, Texturing, Particles, Effects, and Audio

53

Lighting,	55
<i>Position,</i>	58
<i>Light Color,</i>	59
<i>Basic Lighting Types,</i>	59
<i>Lighting Strengths or Multipliers,</i>	60
<i>Lighting Falloff,</i>	62
<i>Three Sample Lighting Setups,</i>	62
Animating Lights,	64
Texturing,	64
<i>Using Textures Well,</i>	66
Particles,	67
<i>Using Particle Emitters,</i>	68
<i>Exporting Particles and Dynamics Information,</i>	69
Effects,	72
Audio,	74
<i>Pushing Game Audio Further,</i>	76
Design Tools Shift,	76
Case Study Comments on Cornerstone Elements,	78
<i>The Moonlight Forest Example,</i>	79
Mega Tips,	83

4 Actors, Props, Items, and Camera Details**85**

Placing Actors, 87

Hero Actors, 87*Enemy Actors*, 88*NPC Actors*, 90*Boss Actors*, 91

Types of Props and Their Use, 92

Using Props, 93*Placing Props*, 93

Types of Items/Power-Ups and Placement, 94

Camera Considerations, 95

Interface Detailing, 95*Floating Cameras*, 96*Fixed Cameras*, 97*Special-Case Cameras*, 97*Common Camera Problems*, 98

Case Study Comments on Actor Loading and Camera Tuning, 99

Mega Tips, 105

5 Design by Genre**107**

Sports Games, 109

Fighting Games, 112

Puzzle Games, 114

Real-time Strategy Games, 116

Role-Playing Games, 120

First- or Third-Person Action Games, 121

Simulations, 123

Creating Cinematics, 125

Developing Backstory, 125

Creating Dialog, 126

Summary of Designer's Work Tools, 128

Case Study Comments on Design Flux, 129

Mega Tips, 133

6 Scripting Action Events**135**

Scripting Technology Choices, 137

JavaScript Sample, 139*Visual Basic Sample*, 139*Python Sample*, 140*Perl Sample*, 140

Applied Scripting Examples,	140
<i>NPC Conversation Templates,</i>	140
<i>Shooter Flying Patterns,</i>	141
Using Triggers,	144
<i>Fearthis,</i>	145
<i>Line of Sight,</i>	146
<i>Crowd,</i>	146
<i>Weather Effects,</i>	147
<i>Counter,</i>	148
<i>Material,</i>	148
<i>Audio,</i>	149
<i>Message,</i>	149
<i>Light,</i>	149
Building Behaviors,	150
<i>Creature Creator,</i>	150
Engine Solutions and the Unreal Engine,	151
Script/Editing System Considerations,	153
Case Study Comments on Scripting a Baseball Game,	154
<i>General,</i>	155
<i>Pitching,</i>	156
<i>Fielding,</i>	156
<i>Hitting,</i>	157
<i>Catching,</i>	158
Mega Tips,	163

7 Quality Assurance and Play-Test Feedback

165

Quality Assurance,	166
<i>QA Setups,</i>	168
<i>Bug Tracking,</i>	168
<i>Technical Support,</i>	170
<i>Testing MMOGs,</i>	171
<i>A Three-Stage Completion Process,</i>	172
<i>Writing a Test Plan,</i>	172
Play-Test Feedback,	173
<i>Managing Feedback,</i>	175
<i>Listening to Feedback,</i>	177
<i>Impact of Play-Test Feedback on Daily Design Tasks,</i>	178
Case Study Comments on the Impact of QA,	179
Mega Tips,	184

8 Design Considerations for Massively Multiplayer Online Games 187

- MMOG Production Challenges, 188
 - Defining Titles*, 189
 - How Is the MMOG Player Different from the Console Player?*, 189
 - Saturation Concerns for the MMOG*, 190
 - Pure Production Risks for the MMOG*, 190
 - Cost and Support Considerations for the MMOG*, 191
- MMOG Construction Factors and Solutions, 194
 - General MMOG Structures*, 194
- MMOG Design Factors, 197
 - Latency*, 197
 - Modularity*, 198
 - Monitoring*, 198
 - Tools Support*, 198
 - Special Events*, 198
 - Pace and Balance*, 198
 - Player Dropout/Lost Connections*, 199
 - MMOG Play Mechanics*, 199
- MMOGs and Design Orientation, 200
 - MMOG Genre Growth*, 201
 - NPCs and Familiars*, 201
 - Isolating MMOG Strengths*, 201
 - MMOG Player Categories*, 202
 - Deep Social Factors*, 202
 - Current Challenges*, 203
- Sports Fans or Groups and MMOGs, 203
 - MMOG Opportunities*, 205
- Case Study Comments on Challenges for UBO, 206
- Mega Tips, 212

9 Cell Phones and Wireless Gaming 215

- The Impending Boom, 217
 - Global Competition*, 219
 - Development Considerations*, 220
- Design Issues for Cell Phones, 222
 - Multiplay Cell Phone Gaming*, 226
 - Wireless Toy Networks*, 226

Building the Cell Phone Gaming Market, 228

Opportunities in Wireless, 229

Case Study Comments on Development Factors in the
Infancy of Wireless, 230

Mega Tips, 234

10 Getting Started in Game Development

237

Why Diversify?, 239

Role Definition for Game Designers, 240

Growth Areas and New Opportunities, 244

Microsoft, Mattel, Intel, and LeapFrog, 244

Challenges for PC Toys, 245

Advergaming, 246

Interesting Trends for the Near Future, 247

Web Game Entertainment with Physical Counterparts, 248

Toys and Card Games Go Online, 249

The Importance of New Opportunities for Developers, 250

Anecdotes from the Game Development Frontlines, 250

Think Fish, 251

Sacking Sanka, 252

Case Study Comments on Final Thoughts for Designers, 253

Creating Your Perspective and Maintaining Your Passion, 257

Mega Tips, 264

11 Game Development Career Choices

265

Programming, 266

Game Programming as a Career Choice, 267

Art, 268

Game Artist as a Career Choice, 269

Design, 270

Game Designer as a Career Choice, 271

Production, 271

Production as a Career Choice, 272

Audio, 273

Audio Composer and Engineer as a Career Choice, 273

Quality Assurance, 274

QA as a Career Choice, 274

Opening an Independent Game Studio, 274

Joining a Game Developer, 276

Industry Economics, 276

Game Development Studio Breakdown,	276
<i>Executive Department,</i>	277
<i>Product Development Department,</i>	279
<i>Creative Department,</i>	279
<i>Programming or Technical Department,</i>	281
<i>Marketing Department,</i>	282
<i>Breakdown Conclusions,</i>	282
Case Study Comments on the Testing Doorway,	282
Mega Tips,	284

A Reference Information

285

Education,	286
Events,	287
Industry Magazine,	287
Industry-Related Sites,	288
Organizations,	288
Breaking In!,	288
Agents and Recruiters,	289
Job Sites,	289
Design Document Reference,	289
TV Programming,	289
COPPA Guidelines,	289
Self-Publishing,	290
Outsourced Testing Services,	290
Game Industry Market Research and Reports,	290
Recommended Sites,	290
Recommended Reading,	291
Recommended Topics for Further Research and Reference,	292

B Tools Discussed

295

3-D Modeling Packages,	296
Art Tools,	297
Level Editing,	297
Middleware,	298
Production Tools,	298
Sound Editing Tools,	299
3-D Construction for the Web,	299
Scripting Languages,	300

Game Dynamics Libraries, 300

Motion Tracking, 300

Programming Language for Console/PC, 300

MMOG Box Solutions, 301

Wireless Development, 301

Introducing Children to Game Design, 301

C Career Guideline Worksheet

303

If You Want to Explore Production, 304

If You Want to Explore Game Art Construction, 305

If You Want to Explore Game Programming, 305

If You Want to Explore Quality Assurance, 306

If You Want to Explore Game Audio, 306

If You Want to Explore Business Relations or Marketing, 307

D Quick Topic Summary for Designers

309

Reference Material, 310

Design Document Writing, 316

Quick Modeling, 317

Layout and Staging, 318

Scripting, 318

Mapping or Level Building, 319

Audio, 319

Testing, 319

Support Software, 320

Team Focus, 320

E Ultimate Baseball Online Gallery

321

UBO Game Interface, 322

Player Creation Screen, 323

Early Game Setup Screen, 324

Game Details, 324

Position Selection and Batting Order, 325

Basic Character Construction, 326

The Motion Capture Process, 328

Baseball Stadiums, 330

Game Action, 332

Index

335