Table of Contents

About the Editors xvii
About the Authors xxi
Introduction xxxv

Part I: Background 1

1 Green Building 101 3
   I. What Is Green Building? 3
      A. Common Descriptions 3
      B. Green Building Goals 5
      C. International Markets 5
   II. Green Building Statistics 7
      A. Environmental 7
      B. Economical 8
   III. Green Construction and Certification 10
      A. Categories of Green Construction 10
      B. LEED 11
      C. Green Globes 12
      D. The Living Building Challenge 12
      E. BREEAM 13
      F. CASBEE 13
      G. International Green Construction Code 13
   IV. Green Building Mandates and Incentives 14
      A. Green Building Laws 14
      B. Green Building Incentives 15
         1. Tax Credits 16
         2. Tax Deductions 16
         3. Financing 16
         4. Permitting 17
         5. Grants 17
   V. The Green Construction Lawyer 18

2 Nuts and Bolts of Green 21
   I. General Green Building Terms 21
   II. Materials and Green Building 25
   III. Water Resources and Sustainable Construction 26
   IV. Energy Efficiency and Sustainable Construction 27
   V. Air Quality and Sustainable Construction 28
   VI. Life-Cycle Analysis and Green Construction 29
   VII. Emerging Technologies in the Green Building Movement 29
3 Sources of Green Building Law

I. The Green Building Movement 31

II. Model Green Building Codes 32
   A. International Green Construction Code (IgCC) 32
      1. History & Development 33
      2. Scope 33
      3. Use and Adoption of the IgCC in the United States 39
   B. ASHRAE Standard 189.1 40
      1. History 41
      2. Scope 41
      3. Use and Adoption of Standard 189.1 in the United States 42
   C. International Energy Conservation Code (IECC) and ASHRAE Standard 90.1 43

III. Green Building Statutes and Regulations 43
   A. Federal 43
   B. State Initiatives 46
   C. Local 48

IV. Conclusion 49

4 The LEEDing Criteria

I. Overview of Chapter 51

II. LEED 52
   A. The LEED Rating System 52
      1. History and Evolution of LEED 52
      2. LEED v2009 57
      3. LEED v4: Moving into Performance 60
      4. Updates to the LEED Rating System 62
   B. The LEED Certification Process 63
      1. Administration 63
      2. Registration 64
      3. LEED Online 64
      4. Certification 64
      5. CIRs and Credit Appeals 65
      6. Credit Categories 66
      7. Certification Levels 68
   C. LEED International 68
   D. LEED Professional Credentials 69
      1. LEED Green Associate 69
      2. LEED AP 70
      3. LEED Fellow 70
      4. Conclusion 70

III. Beyond LEED: Other Green Building Rating Systems 70
   A. Green Globes (Canada and United States) 70
   B. CASBEE (Japan) 72
C. Energy Star (United States) 73
D. BREEAM (United Kingdom and Europe) 73
E. DGNB (Germany) 75
F. GreenStar (Australia) 75
G. Earth Advantage (United States) 77
H. The Living Building Challenge (United States) 77

5 Green Building Case Law Survey 79
I. Air Conditioning, Heating and Refrigeration Institute v. City of Albuquerque 80
II. Bain v. Vertex Architects, LLC 81
III. Barber v. West Chelsea Development Partners, LLC 82
V. Burchick Construction Co. v. Pennsylvania State System of Higher Education 84
VI. The Chesapeake Bay Foundation, Inc. v. Weyerhaeuser Co. 85
VII. CLP Elements, LLC v. Benton County Assessor 88
VIII. Destiny USA Holdings, LLC v. Citigroup Global Markets Realty Corp. 89
IX. Drew George & Partners, Inc. v. Farmer 90
X. East Hampton Town Architectural Review Board 91
XI. Gidumal v. Site 16/17 Development 91
XII. Gifford v. U.S. Green Building Council 92
XIII. Hampton Technologies v. Department of General Services 94
XIV. Hartz Solar Hamilton, LLC v. Platinum Partners Value Arbitrage Fund L.P. 95
XV. JLB Realty, LLC v. Capital Development, LLC 96
XVI. Keefe v. Base Village Owner, LLC 97
XVII. Kinetics Noise Control v. ECORE International 98
XVIII. In re McIvor 99
XIX. Northland Pines High School 100
XX. Southern Builders, Inc. v. Shaw Development, LLC 101
XXI. Tagliarini v. New Haven Board of Aldermen 102
XXII. Conclusion 103

Part II: Contractual Issues 105

6 Matching Owner and Architect Expectations: Green Advocacy and the Necessity for Informed Consent 107
I. Introduction 107
II. Defining (or Not Defining) Green 109
III. The Architectural Tradition: Aesthetic Advocacy 110
Identifying Design and Construction Provisions Impacted by and Impacting on Desired Green Building Goals and Objectives Raised by the LEED Rating System

I. What Is Required: “Goals” or “Mandates” 141
   A. Goal versus Mandates 142
   B. Guarantees on the Level of Certification 142

II. Clearly Delineate Who Is Responsible for the Achievement of Green Goals or Mandates 143
   A. Design-Phase and Construction-Phase Credits 143
   B. Green Prerequisites 144
   C. Identify the Participants, Their Roles, and Their Responsibilities 145
   D. The Program Manager 145
   E. The Green Coordinator and Design Professional 146
   F. Construction Contract 148

III. Identify Key Submittal Criteria 149
   A. Identify Who Is Responsible for Submittals 149
   B. Identify What Must Be Submitted 149
   C. Identify When Submittals Must Be Received and Submitted to the Reviewing Authority 150

IV. Do Not Tie Payments to Achievement of Certification 150

V. Representations Regarding Familiarity with LEED Techniques and Processes 151

VI. Force Majeure or Impossibility of Performance Tied to LEED Criteria 152

VII. Default or Termination Principles and Resources 152

VIII. Participation in LEED Appeals Process 152

IX. LEED Consultant as Prelitigation/ADR Neutral 153

X. Special Insurance and Bonding Considerations 155
   A. Green Bonds 155
   B. Insurance 156

XI. Enhanced Risks under LEED v4 Decertification Provisions 156
8 Contractual Definition of the Project’s Green Goals, Green Risk Allocation, and Project Delivery Methods

I. Introduction: The Importance of Advance Planning and Clear Definition of Objectives to a Successful Green Project
   A. Scope of Work Definition: The Most Important Task for Negotiators and Drafters
   B. Major “Green” Definitions in Green Building Codes and Rating Systems
      1. Sustainable Planning and Development and Integrated or Collaborative Design
      2. Sustainable Sites
      3. Energy Efficiency/Reduction of Building Emissions
      4. Water Use Efficiency
      5. Sustainable Materials
      6. Indoor Environmental Quality
      7. Rigorous Commissioning
   C. Defining Green Scopes of Work
      1. Customizing Green Goals and Contractual Scopes of Work for Each Specific Project
      2. Lack of Trade Usages and Industry Customs
      3. Resolution of Potentially Conflicting Requirements

II. Contractual Definition of the Project’s Green Goals: Typical Green Goals
   A. Green Code Standards and Mandatory Code Requirements
      1. CALGreen: The Nation’s First Statewide Green Building Code
   B. Third-Party Certification
      1. Decide Early Whether to Seek Third-Party Certification
      2. Include Third-Party Certification Requirements in All Relevant Contracts
      3. Assign Responsibility for Oversight
      4. *Shaw Development v. Southern Builders*: An Example of What Not to Do
      5. Decide Early Which Level of Certification to Seek
6. Decide Which Specific Credits and Points Will Be Sought
7. Document Which Specific Approaches Will Be Used to Achieve Credits

C. Contractual Goals of Obtaining Benefits by Achieving Third-Party Certification
   1. Federal Green Contractual Requirements
   2. Government- and Utility-Related Green Incentives

D. Project-Specific Functional Green Goals: Resource Efficiency Performance Requirements
   1. State Performance Requirements in all Relevant Project Statements and Contracts
   2. Specify Protocols and Conditions for Measuring Performance
   3. Specify Remedies in Case of Performance Shortfall
   4. Practical Difficulties in Obtaining Green Performance Guarantees

III. Additional Contract Provisions to Promote a Successful Green Project
A. Provide for Support of Integrated Design and Delivery
   1. “Discovery”: Determine and Spell Out Project Goals
   2. Provide for Adjustment of Goals
   3. Use a Checklist

B. Assign Specific Team Members to Coordinate with Governmental Authorities and Third-Party Certifiers

C. Address BIM and Related Legal Issues
   1. Model Management/Maintenance
   2. Responsibility for Data/Reliance on Data
   3. Intellectual Property Issues
   4. Model’s Legal Status
   5. Consistency across All Project Contracts

D. Address Project Team Participation in Appeals of Third-Party Certification Denials

E. Modify Traditional Contracts for Green Projects

F. Plan for Potential Added Risk of Injury to Workers on Green Projects

IV. Green Risks, Allocation of Green Risks, and Security or Incentives for Green Performance
A. Risk of Failure to Achieve Green Goals
B. Risk Allocation Provisions for Green Contracts
   1. Warranties
   2. Liquidated Damages for Performance Failure
3. Waiver of Consequential Damages 203
4. Limitations of Liability 203
C. Financial Security for Meeting Green Obligations 204
   1. Retainage as Security for Green Obligations or Substantial Completion 204
   2. Postoccupancy Bonding as Security for Green Obligations 206
   3. Bonuses for Achieving Green Objectives 207

9 Understanding the ConsensusDOCS 310 Green Building Addendum 209
I. Overview 209
II. Article-by-Article Overview of the ConsensusDOCS 310 Green Building Addendum 213
   A. Article 1: General Principles 213
   B. Article 2: Definitions 214
   C. Article 3: Green Requirements and Procedures 215
   D. Article 4: Green Building Facilitator 215
   E. Article 5: Green Status 216
   F. Article 6: Green Measures 216
   G. Article 7: Plans and Specifications 218
   H. Article 8: Risk Allocation 219
III. The ConsensusDOCS Guidebook 220
IV. Industry Reaction to the ConsensusDOCS 310 Green Building Addendum 221

10 The American Institute of Architects and the Design-Build Institute of America Approaches for Green/Sustainable Design, Construction, and Design-Build Contracting 223
I. Introduction 223
II. The AIA “LEEDs” a Contractual (R)Evolution 224
   A. AIA First Addresses Green with the B214 224
      1. AIA Document B214-2007 224
      2. AIA Document B214-2012 225
   B. Sustainable Project (SP) Forms: AIA Welcomes New Members to the Family 227
      1. AIA’s Guide for Sustainable Projects (Document D503-2011) 228
      2. Purpose of the D503 231
      3. Architect to Advocate Sustainability 233
      4. Warranty or Guarantee of Certification 234
      5. Additional Services 235
6. Increased Owner Responsibilities 237
7. Owner/Contractor Agreements 238

C. The D503-2011 Makes an Early Exit and Reemerges with a Substantial Overhaul in 2013 239
1. Changes between 2011 and 2013 Versions 239
2. Definition of “Sustainable” 241
3. The AIA Acknowledges a Difference in Sustainable Projects 242
4. Jurisdictional Requirements 243
5. AIA Owner/Architect Agreement Forms 244
6. Sustainability Plan 244
7. Basic versus Additional Services 244
8. Introducing the Sustainability Workshop and Plan 245
9. Use of Untested Products 245
10. Architect as Agent of Owner 246
11. Commissioning Services 247
12. Waiver of Consequential Damages 247
13. Scope of Services Exhibit 247
15. The Architect and LEED Certification 248
16. Owner/Contractor Agreement 249
17. Contractor/Subcontractor Agreements 250
18. The Sustainability Plan in Detail, and Appendices 250

D. The Sustainable Project Family of Documents: An Overview 251

E. The B101-2007 SP 252
1. Sustainability Services 252
2. Registration and Document Collection 253
3. Increased Owner Responsibilities 253
4. Intellectual Property Rights 254

F. The A201-2007 SP 255
1. Special Definitions 255
2. Discussion with Architect 257
3. Substitution of Materials 257
4. Required Documentation 258
5. Untested Materials 258
6. Waste Management 258
7. Change Orders and Directives 259
8. Certification and Substantial Completion 259

G. The Rest of the New SP Family 259

III. AIA Waiver for Use of Experimental Green Product 260
IV. Pursuing Green/Sustainable Development on a Design-Build Delivery Track: The DBIA’s Sustainable Project

Goals Exhibit  
A. General Observations 262  
B. Focus on LEED 263  
C. Commissioning 263  
D. Legal Requirements 264  
E. Appeal of Certification Award 265  
F. Allocation of Liability 265  
G. Untested Products and Materials 265  
H. Certification Mechanics 266  
I. Waiver/Informed Consent 266

V. Conclusion 267

Part III: Insurance and Bonding Considerations 269

11 Green Property Insurance 271

I. Introduction 271  
II. Coverage for Contractors 271  
A. Green Building and Construction Defect Claims 271  
B. Coverage under Traditional Commercial General Liability Insurance 272  
C. Standardized Green Endorsement Options for Builders’ Coverage 273  
D. Increased Risk Window 274  
E. Professional Liability (E&O) Insurance 275

III. Coverage for Design Professionals 276  
A. Green Warranties and Guarantees 276  
B. Heightened Standard of Care 277  
C. Broader Definition of Professional Services and Available Coverage 280  
D. Punitive Damage Coverage 280  
E. Extended Reporting Period 280  
F. Toll-Free Risk Management Hotline 281

IV. Coverage for Owners 281  
A. Increased Property Valuation/Increased Time and Cost to Reconstruct 281  
B. Coverage for Green Elements 283  
C. Coverage for Cost to Recertify 284  
D. Financial Incentives 284  
E. Special Conditions and Exclusions 285
V. Other Types of Green Property Coverage
   A. Sustainable Reconstruction 285
   B. On-Site Energy Generation 285
   C. Green Reputation Coverage 286
   D. Pollution Liability Coverage 286
VI. Conclusion 287

12 Bonding Considerations for Green Projects 289
   I. Introduction 289
   II. What Is a Performance Bond and How Does It Get Issued? 290
   III. What Is Covered under a Traditional Performance Bond? 291
   IV. Evaluating Risks 291
   V. Addressing Risk 293
   VI. D.C. Green Building Act of 2006 294
   VII. Conclusion 295

Part IV: Energy and Water Performance 297

13 How Green Are These Projects When It Comes to Energy and Water Performance? 299
   I. A Look at the LEED, Green Globes, and Energy Star Rating Systems 299
      A. LEED 300
      B. Green Globes 301
      C. Energy Star 302
      D. Impacts of Selecting a Rating System 303
   II. Evaluating the Performance of Green Buildings 304
      A. Federal Green Building Energy and Water Requirements 305
      B. Water Performance 307
      C. Energy Performance 310
      D. Commissioning 313
      E. The Wynkoop Building Case Study—Water Performance 314
   III. Conclusion 316

14 A Scientific Look at LEED, Green Globes, and Energy Star 317
   I. Overview of Rating Systems and Basis 317
      A. LEED 317
      B. Green Globes 317
      C. Energy Star 318
II. Identification of Scientific and Energy-Specific Promises 319
   A. Green Globes 319
   B. Energy Star 320
III. Criticisms of Ability to Meet Promised Performance 320
   A. Broad Criticisms Relating to All Systems 320
      1. Sufficiency of Requirements 320
      2. Marketability of Requirements (FTC Regulations) 321
   B. Broad Criticisms Relating to Data and Studies 322
      1. Sufficiency and Availability of Data 322
      2. Interested Parties 323
      3. Comparability 323
      4. Attempts to Respond to Concerns Relating to Reliability of Data 324
   C. Studies Comparing Actual versus Anticipated Performance 325
      1. New Solutions Study—Rise and Fall of Green Buildings (Three Parts) 325
      2. NBI Study 325
      5. Case Study: Youngstown, Ohio, Federal Building 328
      6. Unmet Expectations in Massachusetts Study 328
      7. Kibert Critique of Other Green Studies 329
      8. Criticism of the High Cost of Optimization 330
     10. Reexamination of the NBI Study 332
     12. 2011 Residential Codes Energy Use Savings Report 333
D. Real-World Challenges to Unmet Expectations 334
   1. Northland Pines High School LEED Certification Challenge 334

15 Achievable Energy Performance 337
I. Introduction 337
II. Limitations and Controversies 338
III. The Metrics 340
   A. National Average EUI—CBECS 341
   B. Energy Star Rating 341
   C. Comparison to Initial Design and Baseline Modeling 342
   D. Comparison to Actual Achievements 342
E. Progress toward the 2030 Challenge and Net Zero 343
F. Development of Uniform Metrics 344
IV. The Results 344
   A. 2008 GSA Study 345
   B. 2008 Report on LEED for New Construction 346
   C. 2011 Regional Green Building Case Study: Year Two Report 348
   D. 2011 NEEA Deep Savings in Existing Buildings 349
   E. 2012 Net Zero Study 351
   F. 2013 World's Greenest Buildings 352
V. Near Zero and Net Zero as State of the Art 353
   A. Educational: Richardsville Elementary, Warren County, Kentucky 353
   B. Industrial: McCormick Distribution Center, Belcamp, Maryland 354
   D. Residential (Multifamily): Dockside Green Development, Victoria, British Columbia 356
   E. The Present and the Future 357

Part V: Litigation 359

16 Litigation Considerations for the Project Owner 361
   I. Introduction: Aligning Expectations 361
   II. Types of Owners Pursuing Green Building Objectives 362
      A. Private 362
      B. Public 363
      C. Institutional 364
   III. Types of Risks That Owners May Face in Implementing Green Building Objectives 365
      A. Financial 365
      B. Regulatory 366
      C. Performance 367
      D. Insurance 367
      E. Marketing 368
      F. Contractors and Consultants 369
      G. Technology 369
      H. Standards of Care 369
   IV. Case Studies 370
      A. Projects Fail to Earn LEED Certification or Meet Green Incentives 370
         1. Bain v. Vertex Architects 370
         2. Shaw Development v. Southern Builders 371
### 17 Litigation Issues for the Design Professional 379

I. Introduction: Role of the Design Professional on a Sustainable Project 379

II. A Heightened “Green” Standard of Care 381
   A. The Standard of Care in General 381
   B. Establishing the Standard of Care in General 383
   C. Establishing the Green Standard of Care 384
      1. Contractual Obligations 385
      2. Building Codes 386
      3. LEED AP Accreditation 389
      4. Professional, Trade, and Other Industry Groups 389
      5. New Industry Products and Developing Technology 392

III. Proving a Breach of the Standard of Care 392
   A. Generally 392
   B. Expert Testimony 393
   C. Certificates of Merit 394

IV. Potential Liability of Design Professionals: Case Studies 396
   A. Failing to Meet Green Certification Requirements 396
   B. Exposure for Increased Operating Expenses Resulting from a Green Design 397
   C. Employing Untested Green Materials 398
   D. Specifying Untested Green Technology 400

### 18 Litigation Issues for the Prime Contractor 403

I. Introduction 403

II. Green Building Issues 404
   A. Project Certification 404
   B. Compliance with Green Laws, Codes, and Standards 405
   C. New Green Products and Systems 406
   D. Green Design and Performance Specifications 406
III. Case Studies
   A. Claims Made against a General Contractor 407
   B. Claims Brought by a General Contractor 410
IV. Other Litigation Issues and Risks
   A. Potential Liability through Indemnity 411
   B. Bid Protests 413
   C. Guarantees, Promises, and Other Representations to Consumers, Clients, and Customers 414
   D. Obligations to the Federal Government 415
V. Conclusion 418

19 Third-Party Claims 419
I. Introduction 419
II. Case Studies
   A. Postdevelopment Purchasers, Tenants, and Owner Associations
      1. Failure to Achieve LEED Certification 419
      2. Failure to Provide Environmental Benefits 421
   B. Community and Activist Groups
      1. Decertification Challenges 423
      2. Historic Preservation Arguments 425
   C. Commercial Trade Associations and Competitors
      1. LEED as the Basis of Bid Protests 426
      2. Challenges to Government Building Requirements or Regulations 428
      3. Challenges to the LEED Rating System Itself 432
   D. Issues Unique to Third-Party Claims
      1. Challenges to Standing 434
      2. Express and Implied Representations and Warranties 436
      3. Requests for Nonmonetary Relief 436
III. Other Legal Theories 437
   A. Tenant’s Failure to Comply with Environmental Duties under a Lease 437
   B. Owner’s Misrepresentations That the Building Uses the Most Energy-Efficient Products on the Market 438
   C. Owner Organizations’ Limitations on the Design or Modification of Buildings 438
IV. Conclusion 439

Table of Cases 441
Index 445