

# Index

## A

- AAA. *See* American Arbitration Association
- Abadan, Mustafa, 522
- Abbreviations, in drawings, 539
- Abramowitz, Ava J., 479–490, 794
- Accelerated project techniques, 737. *See also*  
Fast-track projects and construction cost,  
755
- Access letters, 240  
sample, 239
- Accessibility  
ADA and, 252, 274–275, 806, 892  
codes on, 806
- Accessory use areas, IBC on, 818
- Accommodation units, and cost estimates,  
751
- Accountants  
selection of, 329  
and start-ups, 90
- Accounting  
accrual method, 326, 327  
cash method, 326  
cash method sample, 327  
codes, 324, 721  
method, legal structure and, 101–102  
methods of, 326  
for multiple-office firms, 439  
orientation to, 268  
systems, 324–326
- Accounts payable, in computerized financial  
systems, 330
- Accounts receivable, in computerized  
financial systems, 330
- Accreditation of architecture schools,  
participating in, 34–35
- Accretion (behavior of building users), 637
- ACEC. *See* American Council of Engineering  
Companies
- Acquisitions, firm, 172, 345–347
- Acronyms, and communication, 229
- Action item lists, 710
- Action item report format, 586–588, 710  
sample, 587
- Action learning, leadership development as,  
306
- ADA. *See* Americans with Disabilities Act
- Addenda  
to bidding documents, 566–567, 571  
in construction contract, 868
- Additional services, 464–465  
and agreement selection, 833–834  
in schematic design phase, 526
- Adjudication, of fee disputes, 729
- Administration. *See also* Office administration  
and documentation, 534–535  
orientation to, 268
- Administrative expenses, 323  
types of, 325
- Administrative function in architecture,  
405–409
- Administrative staff, 410  
in large firms, 411–412  
in medium-sized firms, 411  
sample job descriptions, 413–417  
in small firms, 409–411
- Administrative law, 37
- Admonition (ethics penalty), 6
- Advantage, in Choosing by Advantage, 664
- Advertising. *See also* Marketing; Public  
relations  
for staff, 255
- Adviser role of architect  
in client relationships, 42, 237–238  
small-stakes advice, giving, 241
- Advocacy (public), 23–24  
architects and, 29  
professional societies and, 17  
project managers and, 696
- aecXML, 426
- Affinity diagram, definition of, 766
- Affirmative action, 261
- Age Discrimination in Employment Act, 252,  
311
- Agency, legal issues regarding, 40–42
- Agenda  
project manager and, 709  
for project meetings, 586–588
- Aging schedule, for accounts receivable, 724,  
729t
- Agreements. *See also* AIA Documents,  
Contracts  
assessment of, 353–355, 364–365  
construction contracts, 865–874  
for design services, 462, 466–467  
inconsistency in, procedure for, 868  
for joint ventures, 861–864  
modifications to, 834–835  
negotiation of, 479–490  
nonstandard forms, 834  
oral, 828  
with owners, 466–467, 826–835  
owner-generated, 467, 835–852  
project design team, 852–862  
review of, 579  
types of, 466–467, 826–874
- AIA. *See* American Institute of Architects
- AIA CAD Layer Guidelines, 541, 559
- AIA Code of Ethics and Professional Practice,  
3–4, 10–13, 52
- AIA Continuing Education System  
(AIA/CES), 63
- AIA Contract Documents program, 21,  
466–467, 829, 875–886  
2007 release, 466, 882–886  
benefits of standard forms in, 876  
development of, 875–878  
document families, 882  
document numbering, 882–883, 883f

- AIA Contract Documents program (*continued*)  
document series, 882  
future of, 885  
guiding principles of, 877  
and risk management, 353–355  
using, 884–885
- AIA Documents, A-series  
A101/CMA-1992, 566  
A101-2007, Standard Form of Agreement Between Owner and Contractor where the Basis of Payment is a Stipulated Sum, 566, 572, 876  
A102-2007, Agreement Between Owner and Contractor, Cost Plus a Fee with a Guaranteed Maximum Price, 563, 566  
A103-2007, Standard Form of Agreement Between Owner and Contractor where the Basis of Payment is the Cost of the Work with a Negotiated GMP, 572  
A105-2007, 566  
A107-2007, 566  
A121/CMc-2003, Standard Form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor, 566, 572, 866, 879  
A131/CMc-2003, Standard Form of Agreement Between Owner and Construction Manager where the Basis of Payment is Cost Plus a Fee, No Guarantee of Cost, 563, 566, 572, 866  
A141-2004, 879  
A142-2004, Agreement Between Design-Builder and Contractor, 866, 879  
A201/CMA-1992, 566  
A201/SC-1999, Federal Supplementary Conditions of the Contract for Construction, 872  
A201-2007, General Conditions of the Contract for Construction, 376, 534, 563, 566, 577–578, 595–596, 601, 777, 851–852, 857, 872, 876, 879f, 883–884  
A305-1986, Contractor's Qualification Statement, 565  
A312-1984, Performance Bond and Payment Bond, 566  
A503-2007, Guide for Supplementary Conditions, 876  
A521-1993, Uniform Location of Subject Matter, 867  
A701-1997, Instructions to Bidders, 565
- AIA Documents, B-series  
B101-2007, Standard Form of Agreement Between Owner and Architect, 461, 464–466, 524–525, 563, 745, 771–772, 828, 832–833, 857, 859, 881, 883–884  
B102-2007, Standard Form of Agreement Between Owner and Architect Without a Predefined Scope of Architect's Services, 466, 828, 881–882  
B103-2007, Standard Form of Agreement Between Owner and Architect for a Large or Complex Project, 356, 466  
B104-2007, Standard Form of Agreement Between Owner and Architect for a Project of Limited Scope, 466–467  
B105-2007, Standard Form of Agreement Between Owner and Architect for a Residential or Small Commercial Project, 466–467  
B141-1997 Part 1, 466, 880–881  
B141-1997 Part 2, 466, 880–881  
B142-2004, 880  
B143-2004, 879  
B144/ARCH-CM-1993, 502  
B151-1997, 466, 881  
B155-1993, 466  
B161-2007, 160  
B162-2007, 160  
B201-2007, Scope of Services: Design and Construction Contract Administration, 466, 526, 881  
B203-2007, Site Evaluation and Planning, 882  
B204-2007, Value Analysis, 882  
B205-2004, Historic Preservation, 466  
B205-2007, Historic Preservation, 882  
B206-2007, Security Evaluation and Planning, 882  
B209-2007, Construction Contract Administration, 882  
B210-2007, Facility Support, 882  
B211-2007, Commissioning, 882  
B214-2007, LEED Certification, 882  
B252-2007, Architectural Interior Design, 882  
B253-2007, Furniture, Furnishings and Equipment Design, 882  
B503-2007, Guide for Amendments to AIA Owner-Architect Agreements, 356, 876
- AIA Documents, C-series  
C101-1993, Joint Venture Agreement for Professional Services, 862–864  
C401-2007, Standard Form of Agreement Between Architect and Consultant, 857, 881
- AIA Documents, D-series  
D101-1995, Methods of Calculating the Area and Volume of Buildings, 752  
D200-1995, Project Checklist, 565, 595, 601
- AIA Documents, G-series  
G606-2000, Amendment to the Professional Services Agreement, 466  
G612-2001, Owner's Instructions to the Architect Regarding the Construction Contract, Insurance and Bonds, and Bidding Procedures, 533, 565, 594  
G702-1992, Application and Certificate for Payment, 588–589  
G703-1992, Continuation Sheet, 588  
G704/DB-2004, 880  
G704-2000, Certificate of Substantial Completion, 590, 593, 602  
G706-1994, Contractor's Affidavit of Payment of Debts and Claims, 602  
G706A-1994, Contractor's Affidavit of Release of Liens, 602  
G707-1994, Consent of Surety to Final Payment, 601  
G707A-1994, Consent of Surety to Reduction in or Partial Release of Retainage, 601  
G710-1992, Architect's Supplemental Instructions, 585  
G711-1992, Architect's Field Observation Report, 585  
G712-2001, Shop Drawing and Sample Record, 584  
G716-2004, Request for Information, 585, 880  
G802-2007, Amendment to the Professional Services Agreement, 835, 881  
G804-2001, Register of Bid Documents, 567
- AIA Educator Practitioner Network, 34  
AIA Gold Medal, 21  
AIA Honors and Awards Program, 21  
AIA National Ethics Council, 4–5  
rules of procedure, 5–6  
AIA Trust, 21–22, 380, 887  
programs offered by, 368–269  
Air conditioning. *See* HVAC systems  
Air quality, indoor. *See* Indoor air quality  
Alliances, 144–152  
commitment and, 147  
creation of, 146–150  
definition of, 144  
do's and don'ts for, 150  
future of, 151–152  
and project delivery, 498–500  
rationale for, 145–146  
types of, 146  
Allowances (cost), 756  
Alterations, estimates for, 758–759  
Alternates, 757  
and bidding problems, 570–571  
Alternative dispute resolution. *See* Dispute resolution  
Alternative staffing, 263–266  
methods of, 264–266  
American Arbitration Association (AAA), 399–400, 402, 404, 887  
American Council of Engineering Companies (ACEC), 139, 888  
American Forest & Paper Association, 621  
American Institute of Architects (AIA).  
*See also under* AIA  
building code policy, 804–805  
College of Fellows, 21  
Committee on the Environment, 603–604  
and community service, 23  
Documents Committee, 876–877, 882–883, 885  
founding of, 14–15, 875  
knowledge communities in, 64  
membership in, 20–22  
membership in, firm support for, 293

membership suspension/termination (ethics penalty), 6

National Ethics Council (NEC), 4–6

as professional society, 20–22

American Institute of Steel Construction, 552

American National Standards Institute (ANSI), 548, 888

American Planning Association (APA), 802, 888

American Society for Quality, 760, 769, 888

American Society for Testing and Materials (ASTM), 548, 888

standard time-temperature curve, 811, 811*f*

American Society of Association Executives, 16

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), 805, 888

and sustainable design, 616

Americans with Disabilities Act (ADA), 806, 892

and employment issues, 252

and job descriptions, 274–275

Analysis

in design process, 522–523

and programming, 512–514, 522–523

Analytical classification, definition of, 430

Andrews, Charles, 225

Annualized method, of life cycle costing, 684

ANSI. *See* American National Standards Institute

Antitrust issues, 52–53

APA. *See* American Planning Association

Appeal(s)

on codes, 816–817

of ethics violation decision, 6

in litigation, process of, 398–399

of NEC decision, 6

on zoning, 796

Applicant bank, 257

Applications

employment, reviewing, 257

for payment, 588–589

processing, 588

Approvals, in schematic design phase, 526

Arbitration, 399–402

evaluation of, 402

versus mediation, 402–403

procedures, 401–402

process of, 400–401

Archetypes, business, 116

business models for, 124–125

and work perspectives, 122–123

ArchiPAC, 24, 29

Architect's services. *See also* Additional services; Basic services; Project services and compensation, 469–479

consultants and, 853

defining, 460–468

value of, 470–472

Architectural Archives in Europe, 457

Architectural Computer Services, Inc. (ARCOM), 421

Architectural information

approaches to organizing, 429–430

classification systems for, 430–432

in construction documentation, 535

storage and retrieval of, 432–433

Architectural programming. *See* Programming

Architectural Registration Examination (ARE)

mentoring for, 67

support for, 293

Architectural survey

accuracy in, acceptable levels, 643

digital technologies for, 642–656

goals of, 642

Architectural Works Copyright Protection Act (AWCPA), 44–45

Architecture education, participating in, 30–35

Architecture schools, 35, 897–902

Archives, 430, 433

preservation conditions for, 448, 454

project manager and, 718

of records, 445–457

security issues with, 456

ARE. *See* Architectural Registration Examination

Area, of building, 808

calculation methods, and cost estimates, 751–753

determining limits, 808–810

IBC on, 820–821

Arlati, Ezio, 421

Articles of incorporation, 96

Ashcroft, Howard W., 499

ASHRAE. *See* American Society of Heating, Refrigerating and Air-Conditioning Engineers

Assemblies, and cost estimates, 753

Assets, definition of, 324

Assignment, consent to, owner-generated agreements on, 845–846

Associated General Contractors of America, 876, 889

Associated professional firms, 861–862

Association of Collegiate Schools of Architecture (ACSA), 34–35

Assumptions, challenging, 231

ASTM. *See* American Society for Testing and Materials

Athena Institute, 615

Atkins, James B., 574–592, 713, 718, 735–744, 770–781

Attitude, of project managers, 695

Attribute, in Choosing by Advantage, 664

Attribution of credit, 7–8

At-will, term, 251

Authority

lines of, in alliances, 149

matrix of, 578*t*

Automobile liability insurance, business, 378

## B

Baby boomers, 250

Backlog (financial), 336*f*

Balance sheets, 327

sample, 328

of start-up, sample, 343

Balance-to-finish amount, 589

Bank credit, obtaining, 346

Bar chart, for scheduling, 731, 733

interactive, evaluation of, 731

sample, 732*f*

Basement, IBC on, 821

Basic services, 464–465

owner-generated agreements on, 841–845

BATNA, 485

Beckwith, Harry, 188

Behavior

mapping, 637–638

observation, 636–638

of project manager, 695

traces of [user], 636–637

Behavioral interview, 258

Behavioral theory, 294

Benchmarking, definition of, 766

Benefit cost analysis, 684

Benefits, 279–285

administration of, 245

legal requirements for, 251

packages, 91, 283–284

types of, 282–283

Bernstein, Phillip G., 491–501

Best alternative to a negotiated agreement (BATNA), 485

Best practice, definition of, 766

BHAG. *See* Big hairy audacious goal

Bid(s)

advertisement for, 565

based on insufficient construction documents, 570

evaluation of, 568

negotiation of, 568–569

receipt of, 567

rejection of, 569

understanding, 570

Bid bond, 568

Bid form, 565

Bid projects, controlling construction costs on, 571–573

Bidders

instructions to, 565

notification of, 569

prequalification of, 564

questions from, responding to, 571

Bidding, 562–573

assumptions in, 562

in construction management, 502

documents in, 532–533

errors, withdrawals, and revocations in, 568

with fast-track projects, 738, 741

management and control of, 566–

versus negotiating, 563

or negotiation phase, 562–573

phase, preparatory steps, 563–564

problems in, avoiding, 569–571

results of, 568


strategies for cost management, 757

Bidding documents

addenda to, 566

distribution of, 567

preparation of, 564–566

- Big box stores, 791
  - Big hairy audacious goal (BHAG), 108
  - Billing, 478–479
    - rates, in job descriptions, 276
    - volume, and professional liability insurance premiums, 374
  - BIM. *See* Building information modeling
  - Bingaman, Gordon B., 642–656
  - Bio-based sources, as green attribute, 619–620
  - Bioclimatic design, 606–607
  - Biophilia, 606
  - Birge, John, 145
  - Birx, Glenn W., 460–468
  - Black water, 609
  - Bluetooth technology, 644
  - Board for the Coordination of the Model Codes (BCMC), 808
  - Boards
    - and agreement selection, 829
    - dispute review, 393, 404
    - state registration, 894–896
    - zoning, 783–784, 796–797, 800
  - Bohm, Friedl, 118
  - Bold targets, 108–110
  - Bond(s)
    - bid, 568
    - fidelity, 379
    - labor and material, 566
    - performance, 566
  - Bond, Ed, 130
  - Bonding, mandatory, in design-build, 505
  - Bowen, Brian, 744–759
  - Boycotts, 53
  - Brainstorming, team building and, 129
  - Branch offices, 436
    - foreign, 159
    - future of, 444
    - management of, 438–444
    - monitoring, 443–444
    - opening, 437–438
  - Branch-office syndrome, 438–439
  - Branding, 179–180
  - Braun, Peter, 247–248
  - Break-even analysis, 684
  - Briefing. *See* Programming
  - Brunelleschi, Filippo, 505
  - Bubble diagram, and programming, 514, 515*f*
  - Budget
    - and agreement selection, 831
    - confirmation letter on, 771
    - contingency, 738, 744
    - control of, 721–725
    - and cost management, 745–746
    - and document management, 551–552
    - in fast-track projects, 738–739
    - management of, 771–772
    - for marketing, 183
    - matrix, sample, 184
    - for negotiation, 488
    - owner's, designing to, 834
    - programming and, 517, 518*f*
    - project manager and, 716–717
    - realistic, drafting, 747–748
    - redraw clause, 772
    - targets for, project manager and, 714
    - in work plan, 704
  - Budgeting
    - cash, 334
    - and financial planning, 312–321
    - recommendations for, 305
  - Building codes and regulations, 782–823.
    - See also* Code(s)
    - AIA policy on, 804–805
    - community planning controls, 782–803
    - details of, 803–823
  - Building commissioning, 611
  - Building components, economic life of, 679–680
  - Building department review, and cost control, 573
  - Building for Environmental Economic Sustainability, 615
  - Building height
    - codes on, 808–810
    - and construction cost, 754
    - IBC on, 820
  - Building information modeling (BIM), 417, 419–420, 420*f*, 536–537
    - and construction documentation, 535
    - consultants and, 858–859
    - definition of, 419
    - and document management, 552–553
    - and interoperability, 426–427
    - joint venture agreements and, 864
    - and production method specifications, 550
    - and project services, 468
    - software for, 423–424
  - Building materials. *See* Materials, building
  - Building Officials and Code Administrators International, 804
  - Building Owners and Managers Association, 817
  - Building permits, and zoning, 802
  - Building product performance, calculation of, 623, 624*f*
  - Building types, specialized knowledge of, lifelong learning and, 60–61
  - Burr, Aaron, 396
  - Burstein, David, 719
  - Business development, 185–188
  - Business insurance, 378–379
  - Business intelligence, 628–631
    - application of, 631
    - definition of, 629
  - Business interruption insurance, 379
  - Business models
    - archetypes, 124–125
    - elements of, 124
    - for innovator archetype, 123
    - types of, 116–119
  - Business overhead expense, disability benefits for, 383
  - Business planning, 312–314
  - Business plans, 86–87
    - and loan proposal, 89
    - and marketing strategy, 178
  - Business values, 107–108
  - Bussard, H. Kennard, 145–146, 167
- 
- CA. *See* Construction contract administration
  - CAD. *See* Computer-aided design
  - CAD Layer Guidelines, 541, 559
  - Cameras, 645, 648–651
  - Campaign support, architects and, 29
  - Campbell, Robert, 231
  - Canadian Standards Association (CSA), 621, 889
  - Capital
    - acquisition of, 87–89, 341–347
    - expenditures of, 325
    - lack of, strategies to combat, 90
    - need for, evaluation of, 341
    - sources of, 341
    - working, 335–336
  - Carey, Stephen C., 19
  - Cash budgeting, 334
  - Cash cycle, 333*f*
  - Cash flow controls, 334
  - Cash flow projections, 334
    - process of, 335
  - Cash management, 334–335
  - Casso, Ann, 368–385
  - Catalytic decisions, 104–112
  - Caudill, William W., 194
  - Cause-and-effect diagram, definition of, 766
  - CBA. *See* Choosing by Advantage
  - CDs, storage of, 454–456
  - Censure (ethics penalty), 6
  - Centralization, and programming, 514, 516
  - Certificates of substantial completion, 590
  - Certifications
    - owner-generated agreements on, 846–847
    - for payment, 588–589
  - Change, professional societies and, 15
  - Change agent, definition of, 766
  - Change orders, 758
    - in construction contract, 868
  - Changes, in design and construction and disputes, 386–387
    - and documentation, 554–555
    - managing, 582–583
    - minor, in construction contract, 869
    - to owner-architect agreement, 729, 834
    - procedures for handling, 391–392
    - in scope, monitoring, 462
    - in project services, 467–468
  - Charitable institutions, definition of, 15
  - Chart of accounts, 324
  - Charvat, William C., 562–573
  - Cherry, Edith, 507–519
  - Choice, and strategic planning, 103
  - Choosing by Advantage (CBA), 663–664
  - Citizen architect, 22–25
  - Citizen review boards, 796, 800
  - City planning
    - commissions, 796, 800
    - zoning, 782–803
  - Civic involvement, 25
  - Civil Rights Act, Title VII, 252
  - Claims, insurance
    - and cost control, 758

- experience with, 389–390
- follow-up to, 395
- management of, 394
- resolution of, 395
- response to, 393–395
- Class, definition of, 430
- Classification
  - applications of systems, 432
  - of architectural information, 430–432
  - definition of, 430
  - standard systems, uses of, 431
  - terminology in, 430
- Cleaning, final, 599–600
- Client(s). *See also* Owner(s)
  - administrative and accounting practices of, 478
  - and architect selection, 211–222
  - assessment of, 361–362, 728–729
  - capabilities of, and delivery methods, 494–495
  - and changes, 391–392
  - communication with, 222–232
  - contact with, frequency of, 236–237
  - courting, 190–191
  - versus customers, 233
  - and design, 522
  - full-service partners, 117–118, 124–125
  - in global market, 153–158, 161
  - good, characteristics of, 351
  - hidden agenda of, 121
  - informing, 241–242
  - language of, 223–224
  - and marketing, 176–177
  - needs of, and architectural survey, 643
  - objectives of, monitoring, project manager and, 714–715
  - obligations to, AIA Code of Ethics on, 11–12
  - permission for publicity, 203
  - and programming, 509
  - and project managers, 695, 697–698
  - questions for, 213
  - requirements of, in work plan, 701
  - research on, 352, 628–642
  - selection of, 351–352
  - for start-ups, 92
  - thinking like, 234
  - types of, 126
  - undesirable, characteristics of, 352
  - and value analysis, 664–666
- Client partners, 117–118
  - business model for, 124–125
- Client relationship(s), 211–243
  - architect selection, 211–222
  - building, activities for, 232–243
  - communication and, 222–232
  - development of, initiating, 238
  - factors affecting, 234–235
  - levels of, 234
  - nature of, 233–234
  - project manager and, 706
  - recommendations for, 238–242
  - rewards of, 242–243
- Client relationship management (CRM)
  - models of, 235–237
  - software programs for, 191
- Climate
  - data on, and programming, 514
  - and design, 521
  - and scope of construction phase services, 576
  - and sustainable design, 606–607
- Closed-end questions, for survey, 634
  - presentation of results of, 636
- Closeout, 590–602
  - and cost control, 758
  - documentation of, 598
  - implementation and enforcement in, 596
  - importance of, 592–593
  - integrating into project delivery process, 594–598
  - poor, results of, 593–594
  - project manager and, 717–718
  - responsibilities in, 595–596
- Clothing, cultural issues with, 228
- Cluster zoning, 788, 790, 791*f*
- CM. *See* Construction management
- CM-adviser model, 501–502
- CM-agent model, 501–502
- CM-constructor model, 501
- Coach introduction (access strategy), 238
- Coaching, for performance improvement, 291
- COBRA. *See* Consolidated Omnibus Budget Reconciliation Act
- Code(s), 782–823
  - AIA policy on, 804–805
  - appeals, 816–817
  - checklists for, 814
  - comparison of, 819*t*
  - and design, 521
  - and design process, 523
  - development of, participation in, 817
  - enforcement of, 815–817
  - local adoption of, 814–815
  - and standards, 810–812
- Code compliance summary, 550
- Code documents, history of, 804–806
- Coding system, accounting, 324
- Cold calls, 187, 190
- Cold climates, sustainable design strategies for, 607
- Collaboration, 297
  - building information model and, 419, 499
  - between design and administrative staff, 412
  - design-build and, 505
  - in fast-track projects, 742–743
  - in integrated practice or project delivery, 420, 492, 498
  - in negotiated select team approach, 496
  - team building and, 130
  - technology to support, 417, 420, 421, 425, 427, 437
- Colleagues, obligations to, AIA Code of Ethics on, 13
- Collections, 478–479
  - project control and, 724–725
- Collins, David S., 803–823
- Collins, Jim, 108, 296
- Commencement, date of, construction
  - contract on, 871
- Commercial general liability insurance, 377–378
- Commissioning, 611
- Committee for the Preservation of Architectural Records, 449
- Common causes, definition of, 766
- Communication
  - in alliances, 149, 151
  - basics of, 222–224
  - branding and, 180
  - with clients, 222–232
  - cold calls, 187, 190
  - computer technology and, 421–427
  - in construction phase, 579
  - and construction contract administration, 575
  - and dispute management, 392
  - in fast-track projects, 742
  - and fee dispute prevention, 729
  - goals of, 223
  - and leadership, 299, 304–305
  - and marketing strategy, 179
  - nonverbal, 228
  - of performance problems, 291
  - and programming, 509–510
  - project managers and, 697
  - and project services definition, 461
  - and retention, 286–287
  - rules for, 231–232
  - and strategic planning, 113
  - verbal, 227–229
  - written, 229–231
- Community contributors (firm identity), 118
  - business model for, 125
- Community identity, sustainable design and, 604–605
- Community involvement, 22–24
  - and design, 520–521
  - and lifelong learning, 62
  - and public relations, 208
- Community planning controls, 782–803
- Compact discs, storage of, 454–456
- Compensation. *See also* Fee(s)
  - of architects, 280*t*–281*t*
  - of consultants, 857–858
  - in integrated practice, 499
  - in international practice, 162–163
  - job descriptions and, 272, 276
  - options for, 473–475
  - organization development and, 248
  - in project proposal, 199
  - of staff, 279–285, 469–479
  - trends in calculation of, 469–470
  - worksheet for, sample, 476
- Competition
  - lifelong learning and, 58
  - and marketing strategy, 181
  - and professional liability insurance premiums, 374
- Competitive bidding, review of, 53
- Complaints (professional ethics)
  - filing, 5
  - initial chair review of, 5
  - pre-hearing conference for, 5

- Computer modeling, 418–419, 420*f*. *See also*
  - Building information modeling
- Computer systems management, administrative staff and, 409
- Computer technology, 417–428. *See also*
  - Software
    - future of, 427
    - integrated practice with, 420
    - interoperability of, 425–427
    - and multiple-office firms, 437
    - tablet computer, 644–645
    - and work sharing, 442
- Computer-aided design (CAD), 418, 420*f*, 539–540
  - and document management, 552
  - keeping records of, 455–456
  - National CAD Standard (NCS), 428, 431, 454, 537, 542, 559–560
  - and production method specifications, 550
  - software for, 423–424
  - standards for, 540
  - on tablet computers, 645
- Computerized financial management systems, 330–332, 422
- Conditional permits, 789
- ConDoc, 541, 550
- Condominiums, as difficult projects, 353–354
- Conferences
  - pre-bid, 567
  - preconstruction, 569, 580–581
  - pre-hearing, 5
- Confidence, in negotiation, 489
- Confidentiality
  - of envisioning, 640
  - owner-generated agreements on, 847
  - of surveys, 634
- Conflicts. *See* Dispute(s)
- Consent to assignment, owner-generated agreements on, 845–846
- Consequential damages
  - construction contract on, 873
  - owner-generated agreements on, 839
- Conservation
  - design for, 790
  - of water, 608–609, 799–801
- Consolidated Omnibus Budget Reconciliation Act (COBRA), 253, 309
- Constant dollars, 676
  - versus current dollars, 686
- Construction change directives, in construction contract, 868–869
- Construction contracts, 865–874
  - administration of, 574–592
  - AIA Documents program on, 878–880
  - definition of, 865
  - parts of, 867–869
- Construction cost
  - controlling, 571–573
  - and delivery methods, 493
  - factors affecting, 754–755
  - management of, 744–759
  - percentage of, 474
- Construction documentation, 531–558
  - checklists for document checking, 715
  - coordination of, 554–558
  - in fast-track projects, 739
  - insufficient, bids based on, 570
  - management of, 550–558
  - organization and content of, 531–535
  - production sequence, 553*f*
  - review and checking, 555–558, 579, 715
  - sustainable design and, 613
  - tools for, 421
- Construction Management Association of America, 467
- Construction management (CM), 491–492, 496–497, 501–504
  - agreements for, 866
  - AIA Documents program on, 878–879, 879*f*
  - and design-build, 506
  - elements of, 501–502
  - marketing, 504
  - and procurement, 563
  - risks and rewards of, 503
- Construction management-at-risk, 491, 497, 870
  - and value analysis, 661
- Construction manager(s)
  - architect as, 503
  - as constructor (CMc), AIA Documents program on, 878–879, 880*f*
  - preconstruction services from, and cost control, 572
  - qualifications for, 503–504
  - roles of, 502
- Construction methods, lifelong learning and, 59–60
- Construction partnering, 132–133
- Construction phase activities
  - architect and, 577*t*
  - and construction management, 502
  - contract administration and, 580–592
  - cost control during, 757–758
  - cost management during, 756–757
  - environmental impact of, 617
  - in fast-track projects, complications of, 740–741
  - sustainable design and, 613
- Construction phase services, scope of, factors affecting, 576
- Construction procurement, 562–573. *See also*
  - Bidding or negotiation phase
  - preparatory steps in, 563–564
- Construction progress payments, 758
- Construction schedule, and construction management, 501–502
- Construction Specifications Institute (CSI), 430
  - feedback form, 602
  - punch list form, 597, 602
  - Uniform Drawing System (UDS), 537, 541, 559
- Construction team, 573
- Consultant(s)
  - agreements with, 857–860
  - assessment of, 365–366
  - on benefits packages, 284
  - and bidding process, 571
  - clients and, 358
  - financial, selection of, 329
  - legal issues with, 41–42
  - owner-retained, 859–860
  - and preconstruction phase, 580
  - and professional liability coverage, 376
  - project manager and, 714–715
  - in public relations, 209
  - relationships with, 853–856
  - selection of, 209, 357–359
  - types of, 856
- Content management, software for, 425
- Contingencies, and cost estimates, 753–755
- Contingency search, 256
- Contingency theory, 294–295
- Continuing education, 34
  - AIA and, 20, 63
  - on building codes, 804
  - credits in, sources of, 63
  - definition of, 54
  - documentation of, 64–65
  - lifelong learning, 57–65
  - mandatory, 54–56
  - MASTERSPEC and, 561
  - professional societies and, 16–17
  - rationale for, 64
- Continuous quality improvement, and construction documentation management, 551
- Contract(s). *See also* Agreements
  - award of, 569
  - changes in, control of, 727
  - and design process, 524–525
  - and dispute management, 387–388, 390
  - employment, 253
  - and fee dispute prevention, 728–729
  - governing law of, 872
  - for international practice, 160
  - job offer as, 262
  - multiple design, and scope of construction phase services, 576
  - negotiation of, 479–490
  - oral versus written, 355
  - parties' names in, 871
  - for start-ups, 84
  - in subcontracting, 873–874
- Construction contract administration (CA), 574–592
  - benefits of, 591–592
  - and cost management, 745
  - preparatory activities, 579–580
  - proactive approach to, 574–575
  - reactive, 575
  - record keeping for, 591
  - team, roles of, 575–579, 579*f*
- Contract documents. *See also* Agreements, AIA Contract Documents, Contracts
  - in project manual, 532–534
  - selection of, 353–355, 364–365
- Contract personnel, 264–265
- Contract sum, construction contract on, 871
- Contractors
  - assessment of, 366
  - and changes, 582

construction contract administration and, 578  
 and delivery methods, 491, 493  
 and design-build, 506  
 disputes with, 388–391  
 independent, versus employees, 264  
 preconstruction services from, and cost control, 572  
 selection of, 357–358  
**Control.** *See also* Project controls  
 corporations and, 96–97  
 and dispute management, 390  
 limited liability companies and, 102  
 Convergent photogrammetry, 646, 647f  
 Conversations, documentation of, 711  
 Cook, Richard B., 48–50  
 Coordination sessions, 708  
 Copyright law, 43–47  
   categories of, 44–45  
   infringement of, 45–46  
   license and transfer issues, 46  
   license termination, 46–47  
**Corporations,** 96–101  
   general business versus professional, 96  
   and international practice, 155–156  
   legal attributes of, 98  
   tax attributes of, 99–100  
**Correction of work, period for, construction contract on,** 872  
**Correspondence**  
   administrative staffing and, 407  
   basic rules for, 710–712  
**Cost(s).** *See also* Life cycle costing;  
   Price(s)/pricing  
   categories of, 681–683  
   and design, 521–522  
   as design objective, 750  
   and design process, 523  
   factors affecting, 754–755  
   indexes of, 755  
   of peer review, 141  
   resources on, 755–756  
   targets for, 747–750  
   unit cost methods, 474  
**Cost analysis, detailed, tools for,** 420  
**Cost control, during construction,** 757–758  
**Cost estimates.** *See* Estimates  
**Cost management, 744–759**  
   during construction, 756–757  
   organization for, 759  
   principles of, 747–751  
**Cost plus fee, 474**  
   construction contract on, 869–870  
**Cost-based selection, 212–214**  
   responses to, 213–214  
   and risk management, 357  
**Cost/quality experts, 118–119**  
   business model for, 125  
**County planning**  
   commissions, 796, 800  
   zoning, 782–803  
**Course corrections, control of,** 725–731  
 Courtney, Karen O., 232–243  
 Cover letters, 198  
 Covey, Stephen, 225  
 Cox, John B., 16  
 Coxe, Weld, 165  
 CPM. *See* Critical path method  
 Creative conflict, 698  
 Creativity phase, in value analysis, 670  
 Credentials, in job descriptions, 275–276  
**Credit**  
   client, uncertain, 478–479  
   for design, attribution of, 7–8  
**Credit cards, personal,** 341  
**Credit lines, 344–345**  
   obtaining, 346  
   proposals for, 344–345  
**Crime policies, 379**  
**Criminal law, 37**  
**Criterion, in Choosing by Advantage,** 664  
**Critical path method (CPM), 501, 733–34**  
   evaluation of, 733  
   sample, 734f  
**CRM.** *See* Client relationship management  
 Crocco, Kenneth C., 531–558  
 Croessmann, Philip R., 93–103  
 Crosby, Phil, 761  
 Crowell, Richard D., 348–367  
**CSA.** *See* Canadian Standards Association  
**CSI.** *See* Construction Specifications Institute  
**Cultural values, 107**  
**Culture**  
   and client relationships, 234–235  
   and communication, 228–229  
   and multiple-office firms, 441  
**Current dollars, 676**  
   versus constant dollars, 686  
**Current operating expenses, 325**  
**Current ratio, 344**  
 Curtis, Craig, 521  
**Customers, use of term, 233**

## D

**Databases**  
   free, 630  
   geographic information system, 643  
   project, setting up, 580  
**Date of commencement, construction contract on,** 871  
 Davis, Clark S., 469–479  
 Dawson, Ross, 235, 472  
 Death, sole proprietorships and, 94  
**Debriefing, 195**  
   project manager and, 717  
**Debt-to-equity ratio, 344**  
**Decentralization, and programming, 514, 516**  
**Decision making**  
   in design phases, 529–530  
   project manager and, 706  
   team building and, 137–138  
   value analysis and, 656–672  
**Dedication, 106**  
**Deductibles, on professional liability insurance, 375**  
 Defendant, 397  
**Deflation, 676, 676f**  
**Delays**  
   and disputes, 386–387  
   owner-generated agreements and, 841–842  
**Delivery.** *See* Project delivery; Project delivery methods  
 Dell’Isola, Michael D., 656–691  
**Demand**  
   for arbitration, 400  
   for mediation, 402  
 Deming, W. Edwards, 287, 761  
**Demonstration, at closeout, 599**  
**Dental insurance, 382**  
**Departments, team building for, 128**  
**Depositions, 397**  
**Descriptive specifying, 543**  
**Design**  
   bioclimatic, 606–607  
   compromise in, 778–781  
   computer tools for, 417–420, 420f  
   costs of, estimating, 751–756  
   decisions in, 529–530  
   for ecological context, 605–606  
   factors affecting, 520–522  
   maintenance of quality in, 770–781  
   in multiple-office firms, quality of, 442–443  
   ownership of, in integrated practice, 499  
   phases in, 520–531  
   precedents and, 523  
   process of, 522–528  
   in proposals, 197  
   schematic, 525–526  
   sequence of, changes in, 497  
**Design competitions**  
   and architect selection, 216  
   international, 156  
   and lifelong learning, 62  
   review of, 53  
**Design concept, 524**  
**Design contracts**  
   AIA Documents program on, 880–882  
   multiple, and scope of construction phase services, 576  
**Design criteria, programming and, 508f, 519**  
**Design development, 526**  
   sustainable design and, 613  
**Design Excellence Program, 215**  
**Design fees, delivery method and, 563–564**  
**Design media, and public relations, 204**  
**Design methodologies**  
   driving force and, 121–122  
   lifelong learning and, 59–61  
**Design opportunities, and sustainable design, 604**  
**Design review**  
   meetings on, recommendations for, 305  
   and zoning, 788  
**Design staff, and administration, 412**  
**Design studio reviews, participating in, 31**  
**Design team**  
   agreements with, 852–862  
   and bidding process, 571  
   selection of, 355–357

- Design-bid-build, 491, 495–496, 504 and value analysis, 661
  - Design-bid/negotiate-build, AIA Documents program on, 881*f*
  - Design-build, 497, 504–506
    - AIA Documents program on, 879–880, 880*f*
    - appeal of, 505
    - breaking into market, 506
    - and cost control, 573
    - risk factors in, 505
    - start-up considerations in, 505–506
    - and value analysis, 661
  - Design-build-leaseback, and value analysis, 661
  - Design-through-construction phase services, 463–464
  - Dexter, William F., 48–50
  - Digital architectural survey technologies, 642–656
    - future of, 655
    - new tools in, 643–654
    - specialized service providers for, 654–655
  - Digital photogrammetry, 645–646, 647*f*
  - Digital practice protocols
    - AIA contract document for, 900
    - for consultants, 858–859
    - in joint venture agreements, 864
  - Digital record keeping. *See* Electronic files
  - Dimensions, of drawings, 538
  - Direct costs, reimbursable versus nonreimbursable, 475
  - Direct expenses
    - definition of, 323
    - types of, 325
  - Direct hire, 221–222
  - Direct personnel expense (DPE), 323–324 and fees, 474
  - Direct salary expense (DSE), 317, 323, 339
    - and fees, 474
    - multipliers, calculating, 321
  - Disability benefits, 383
  - Disaster planning, for records, 448
  - Disclaimers, absence in owner-generated agreements, 849
  - Discount rate, term, 675
  - Discovery stage, 397
  - Discrimination, in employment, legal issues with, 252
  - Disposal, in life cycle assessment, 622
  - Dispute(s)
    - action on, 388
    - anticipation of, 386
    - causes of, 386–387
    - and cost control, 758
    - importance of managing, 387
    - management of, 385–395
    - mitigation techniques for, 390
    - and payments, owner-generated agreements, 844–845
    - prevention of, 386
    - review board, 393, 404
    - warning signs of, 387–388
  - Dispute resolution, 396–404, 872–873
    - alternative, construction contract and, 872–873
    - project-site techniques, 392–393
  - Distance learning, 62
  - Diversity, human resources management and, 248
  - Documentary classification, definition of, 430
  - Documentation. *See also* Construction documentation
    - in alliances, 149–150
    - bidding, 564–566
    - of changes, 727
    - of claims, 394
    - for closeout, 598
    - completion of, and project cost estimating, 773*f*
    - consultants and, 860
    - in design phases, 527–528
    - and dispute management, 392
    - of employment, 253
    - and fee dispute prevention, 729
    - of firm's legacy, 447–448
    - in litigation, 397
    - ownership of, owner-generated agreements and, 840–841
    - of performance appraisals, 290
    - for project management, 696, 710–712
    - and quality management, 768
    - in schematic design phase, 525–526
    - in strategic planning, 114–115
    - of sustainable design, 600–601
    - tools for, 421
  - Domestic Production Activities Deduction, 101
  - Donovan, Roxanne, 203
  - Downsizing, 166–169
    - planned, 168
  - DPE. *See* Direct personnel expense
  - Drafting. *See also* Computer-aided design manual, 539 services, 266
  - Drawing boards, smart, 427
  - Drawings, 535–540
    - chronology of standards development for, 541–542
    - in construction contract, 868
    - in design phases, 527–528
    - hybrid, 649*f*–650*f*
    - production methods, 539–540
    - scale, dimensions, and targets of, 538–539
    - in schematic design phase, 525
    - sequence and sheet formats for, 537–538
    - shop, 583
    - and specifications, 539
    - standards for, 540
  - Dreyer-Hadley, Laurie, 285–293
  - Driving force
    - and client's hidden agenda, 121
    - identification of, 120
    - and methods, 121–122
  - Drucker, Peter F., 119, 760, 1018
  - Drug-Free Workplace Act, 251
  - Dry climates, sustainable design strategies for, 607
  - DSE. *See* Direct salary expense
  - Duany, Andres, 117
  - Dunn, James, 826–835
  - Duty to defend, in indemnification clauses, 837–838
- ## E
- Earned value tracking chart, 724*f*
  - Earnings, retained, 342
  - Easterling, Charles, 143
  - Eastman, Charles, 417
  - Ecological context, design for, 605–606
  - Economic analysis
    - basic formulas in, 677–678
    - period of, 678, 678*f*
    - principles of, 674–683
  - Economic equivalence, 678–680
  - Economic factors, and scope of construction phase services, 576
  - Eco-zones, 792–793
  - Education. *See* Architecture education; Continuing education; Teaching
  - Educator Practitioner Network, 34
  - Egress, means of
    - codes on, 810, 810*f*
    - IBC on, 821–822
  - EIN. *See* Employer identification number
  - Elcovision software, 646, 648–650
  - Elected office, architects and, 30
  - Electronic data management, 540
  - Electronic files, 433, 455–456
    - archiving, 452–454
    - operation and maintenance manuals, at closeout, 598–599
    - storage issues, 454–456
    - submittals, management of, 585
  - Elegant options, in negotiation, 484
  - Elemental methods for cost estimating, 753
  - E-mail
    - and bidding documents, 567
    - documentation by, 711
    - style guidelines for, 230
  - Emerging Professional's Companion*, 69
  - Empathy
    - in listening, 225–226
    - in perspective, 231–232
  - Employee(s). *See also* Staff benefits packages for, 91 borrowed, 265–266 foreign, 261–262 versus independent contractors, 264 new, 263 new, orientation for, 245, 266–269 part-time, 266 relations, 246 relationships, legal issues in, 41 temporary, 266 time records of, project manager and, 716
  - Employee handbook, 262
  - Employee Polygraph Protection Act, 251
  - Employee Retirement Income Securities Act, 251
  - Employee stock ownership plan (ESOP), 345

Employee stock ownership trust (ESOT), 345  
Employer identification number (EIN), 91  
Employment  
contracts, 253  
initial period, 263  
legal requirements of, 251–253  
termination of, 253  
terms and conditions of, 252–253  
Employment agencies, 256  
Employment interviews, 257–262  
legal requirements for, 251  
questions for, 259–260  
Employment practices liability insurance, 378  
Employment record retention, 253  
job descriptions and, 273  
End User License Agreement (EULA), 884  
Endorsements, on professional liability insurance, 372–373  
Energy efficiency, evaluation of, 613–614  
Energy Star program, 615  
Energy use, and programming, 514  
Engagement, the architecture of, 25  
Engineers Joint Contract Documents Committee (EJCDC), 467  
C-700, 595  
Enumerative classification, definition of, 430  
Environmental impacts, translation of, 623  
Environmental life cycle assessment, 621–623  
Environmental plans, and zoning, 786  
Environmental Protection Agency (EPA), 615, 892  
on environmentally preferable products, 617  
Environmentally preferable products (EPP), 610  
definition of, 617–621  
green attributes, 618, 627  
green attributes, as proxies for  
environmental preferability, 618–621  
performance of, calculation of, 623, 624f  
principles for, 626–627  
selection of, 616–628  
standards for, 624–626  
Envisioning, 639–640  
EPA. *See* Environmental Protection Agency  
EPP. *See* Environmentally preferable products  
Equal Pay Act, 252  
Equivalence, economic, 679–680  
example of, 681  
Ericson, Arthur, 520  
Erosion (behavior of building users), 636  
Errors  
and changes, 582  
in fast-track projects, 738  
Erstthal, Henry L., 15  
Escalation (economic), 677  
definition of, 676  
ESOP. *See* Employee stock ownership plan  
ESOT. *See* Employee stock ownership trust  
e-SPECS, 549, 561  
Estimates, 751–756  
challenges in, 758–759  
and cost control, 572

owner-generated agreements on, 842–843  
presentation of, 756  
Ethics, 2–9. *See also* AIA Code of Ethics and Professional Conduct; AIA National Ethics Council  
common violations of, 6–9  
definition of, 3  
and design-build, 504  
future of, 9  
versus professional aspirations, 4  
standards for architects, 3–5, 52  
and start-ups, 85–86  
teamwork and, 129–130  
violations, 4  
Euclidean zoning, 787, 787f  
EULA. *See* End User License Agreement  
Evaluation of employee performance, factors in, 288–89  
Evaluation phase, in value analysis, 670–671  
Excess liability policies, 378  
Exclusions  
on professional liability insurance, 372–373  
in services proposal, 462  
Executive sessions (project meeting), 708  
Exhibitions  
and architect selection, 217–218  
of professional work, 31  
and public relations, 207  
Exit(s)  
codes on, 810, 810f  
IBC on, 822  
Exit discharge, IBC on, 822  
Exit report, from peer review, 142–143  
Expanded project delivery, and professional liability insurance, 377  
Expansion, of firm, decisions on, 435  
Expansion model (relationships), 235–236  
Expectations  
client, avoid absolute, 698  
client, managing, 387  
client, and value analysis, 665–666  
on closeout, 594–595  
and disputes, 386  
of foreign clients, 161  
project participant, and legal issues, 38  
project managers and, 697–698  
Expenses  
definition of, 324  
types of, 325  
Experiential learning programs, sponsoring, 32–33  
Expert role, in client relationships, 237–238  
Expert witnesses  
architects as, 48–50  
definition of, 48  
and litigation, 397  
services provided by, 48–49  
External customer/client, definition of, 766  
Externalities, and sustainable design, 605  
Extra investment, rate of return on, 684  
Extraction, in life cycle assessment, 622

## F

Faceted classification, definition of, 430  
Facilitating, project manager and, 693, 705–710  
Facility management, administrative staffing and, 408  
Facility performance evaluation (FPE), 640–641  
Facility tour, in orientation, 268  
Fact checking, 203  
Factor, in Choosing by Advantage, 664  
Fair Credit Reporting Act, 251  
Fair Labor Standards Act, 271  
Fallon, Kristine K., 531–558  
Family and Medical Leave Act, 251, 283  
Farm Bill, 619  
Fast-track projects, 735–744  
appeal of, 737  
arbitration and, 401  
complex, 742  
concept of, 736–737  
risks of, 737–743  
versus sequential phasing, 736f  
Federal government  
agencies of, 892–893  
architect selection process, 215  
architects and, 28–29  
and contracts, 872  
and qualifications-based selection, 214  
and recruiting, 261  
Federal tax ID numbers (FEINs), 91  
Fee(s). *See also* Payment  
cost plus, 474, 869–870  
design, delivery method and, 563–564  
fixed, 473–474, 869–870  
negotiation of, 462  
in project proposal, 199  
review of, 53  
stipulated sum, 473, 869  
types of, 473–475  
withholding, 390, 479  
Fee disputes, 390  
prevention of, 728–729  
Fee multipliers, 473–474  
Fee proposals, 827–834  
Fee retainage, 390, 479  
Feedback  
at closeout, 601  
payment patterns as, 479  
and retention, 286  
and sustainable design, 611–612  
Feedback loop, in strategic planning, 105  
FEINs. *See* Federal tax ID numbers  
FF&E. *See* Furniture, furnishings and equipment design  
Fidelity bonds, 379  
Filing system, 432–433, 712  
sample, 713  
Final change order, 597  
omission of, 593–594  
Final cleaning, 599–600  
Final completion, 590–591, 597–598  
construction contract on, 872

- Final payment, construction contract on, 872
- Finance, administrative staffing and, 408
- Finance manager, job description for, 416–417
- Financial arrangements, in joint venture agreements, 863–864
- Financial consultants, selection of, 329
- Financial health, maintenance of, 332–340
- Financial management, 312–347
  - capital acquisition, 87–89, 341–347
  - financial health maintenance, 332–340
  - financial management systems, 322–330
  - financial planning, 312–321, 332–333
  - task of, 312
  - terminology in, 323–324
- Financial management systems, 322–330
  - computerized, 330–332, 422
  - for start-ups, 92
- Financial planning, 312–321
  - factors affecting, 332–333
  - for international practice, 157, 159–160
  - sample process for, 319–321
- Financial reports, 326–329
  - frequency of, 329
  - using, 330
- Financial strength, 335–337
- Fiori, Debra, 244–250, 253–263, 279–293, 307–311
- Fire areas, IBC on, 818–819
- Fire protection, 807–808
- Fire suppression, IBC threshold limits for, 819†
- Firm(s)
  - associated, 861–862
  - buying and selling, 170–172
  - decision to start, 83–85
  - design of, 86–87, 122–123
  - failure of, causes of, 93
  - focus of, 119–122
  - legacy of, record keeping and, 447–449
  - legal structure of, 93–103
  - multiple-office, 434–444
  - name of, 180
  - and peer review, 139–144
  - purpose of, 106, 108
  - starting, 82–93
  - start-ups, 82–93
  - strategic planning for, 103–115, 122
  - structure of, 84
  - valuation of, 174–175
- Firm assessment, 350
  - matrix for, 361
- Firm culture
  - and alliances, 146–148
  - and compensation, 279
  - and multiple-office firms, 438
  - organization development and, 248
- Firm development, 82–175
  - alliances, 144–152, 498–500
  - firm identity and expertise, 86, 92, 115–126
  - in global market, 153–163, 436–468
  - legal structure of firms, 93–103
  - ownership transition, 163–175
  - peer review, 139–144, 572
  - starting a firm, 82–93
  - strategic planning, 103–115, 122, 176–189
  - team building, 128–139, 657–658
- Firm identity, 86, 92, 115–126
  - and alliances, 147
  - and marketing strategy, 178
  - and multiple-office firms, 441
  - niche practice and, 127
- Firm operations, 405–457
  - computer technology, 417–428, 437, 442, 644–645
  - information management, 428–434, 712
  - multiple-office firms, 434–444
  - office administration, 405–417
  - records retention and archiving, 445–457
- Firm ownership
  - changes in, 97, 103
  - corporations and, 96–97
  - financing changes in, 345–347
  - limited liability companies and, 102
  - paths to, 85
  - public, 347
  - transition of, 163–175
- Firmwide profit, 337
- Fiscal stewardship, and political process, 27
- Five Whys process, 767
- Fixed fees, 473
  - cost plus, 474, 869–870
- Flexibility, and programming, 516
- Flexible zoning, 788–789
- Flip charts, 136
- Floating zones, 790
- Flow, and programming, 514, 515<sup>f</sup>
- Flows, as environmental impacts, 623
- Foreign architects, working with, 158
- Foreign clients, 153–158
- Foreign Corrupt Practices Act, 161
- Foreign employees, 261–262
- Forest Stewardship Council, 620
- Form-based zoning, 791–792
  - variations of, 792–794
- 4-D models, 420
- 401(k) plans, 384
- FPE. *See* Facility performance evaluation
- Fradin, Scott R., 835–852
- Frames of reference (listening), 225–226
- Franklin, James R., 166–167, 193–194
- Freehof, James, 541
- Frontage, IBC on, 821
- Full-service client partners, 117–118
  - business model for, 124–125
- Function analysis, in value analysis, 659, 663, 668
- Function logic diagram, 668<sup>f</sup>
- Function Pareto cost model, 669<sup>f</sup>
- Functional area method, and cost estimates, 753
- Functional programming, 507–508
- Functional relationship, and programming, 514
- Fund raising, professional societies and, 17
- Furniture, for start-ups, 91
- Furniture, furnishings and equipment design (FF&E)
  - law governing, 873
  - programming and, 513
- Gantt, Harvey, 118
- GDA. *See* Global Design Alliance
- Gehring, Andrea Cohen, 693
- Gehry, Frank, 470
- Gender, and communication, 226
- General accounting, 325–326
- General conditions, in construction contract, 532, 867–868
- General contractors. *See* Contractors
- General expenses, 323
  - types of, 325
- General ledger, in computerized financial systems, 330
- General Services Administration (GSA), Design Excellence Program, 215
- Generalization, and marketing strategy, 178
- Generation X, 250
- Generation Y, 250
- Generational issues
  - and benefits, 282
  - in client relationships, 237
  - in firms, 170<sup>f</sup>
  - human resources management and, 250
- Geographic information system (GIS)
  - database, 643
- Geographic location, and professional liability insurance premiums, 374
- Gerou, Phillip H., 2–9
- Getting work, 105, 189–196, 238–239
- Getz, Lowell V., 312–332, 346, 718–731
- GIS. *See* Geographic information system database
- Giurgola, Romaldo, 521
- Global Design Alliance (GDA), 145, 152
- Global market
  - firms in, 436–438
  - practicing in, 153–163
- Global positioning system (GPS), 655
- GMP. *See* Guaranteed maximum price
- Goal-based work plans, 301–303, 304<sup>f</sup>
- Goals
  - of communication, 223
  - for design process, 524
  - generation of, 109
  - and leadership, 297
  - and marketing strategy, 178–179
  - for media relations, 202
  - for programming, 511–512
  - strategic planning and, 108–110
  - team building and, 135
- Goldberg, Howard, 396–404
- Government
  - advocacy. *See* Advocacy (public)
  - arenas of, 27–29
  - and international practice, 155
  - and specifications, 549
- GPS. *See* Global positioning system
- Grant, David M., 208
- Gray water, 609
- Green attributes of building products. *See* Environmentally preferable products
- Green building. *See* Sustainable design

Green building rating systems, 613–615  
 Green card sponsorship, 261–262  
 Green Label Plus, 620  
 Green products. *See* Environmentally preferable products  
 Green Seal, 627  
 Greenguard Environmental Institute, 620  
 Greusel, David, 222–232  
 Gross square footage (GSF), 516  
 Group dynamics, and value analysis, 658  
 Groups, observing, 637  
 Groupthink, 129  
 Growth  
   financing, 342  
   and multiple offices, 435  
   and ownership transition, 163–166, 167*f*  
 Growth model, strategic planning and, 104, 112–113, 113*f*  
 GSA Design Excellence Program, 215  
 GSF. *See* Gross square footage  
 Guaranteed maximum price (GMP), 497  
   construction contract on, 870  
   for fast-track projects, 740  
 Guided walk-throughs, 638–639  
   sample form for, 639  
 Guru model (relationships), 235  
 Guzey, Onkal “Duke,” 541

## H

H-1 B visa, 262  
 Hall, Cara Shimkus, 263–266  
 Hall, Dennis J., 428–434  
 Hamilton, Alexander, 396  
 Hancks, Gregory, 865–874  
 Hancock, David, 130  
 Harness, Suzanne H., 875–885  
 Hartman, Douglas C., 592–602  
 Harvard Project on Negotiation (PON), 480, 485, 490  
 Harvesting, of raw materials, in life cycle assessment, 622  
 Haviland, David, 529–530, 800  
 Headhunters, 256  
 Health, safety, and welfare (HSW) issues  
   and lifelong learning, 59  
   in mandatory continuing education, 54  
   subject areas of, 55  
 Health care flexible spending accounts, 382–383  
 Health insurance, 282–283, 381–383  
 Health Insurance Portability and Privacy Act, 251, 382  
 Health maintenance organizations (HMOs), 282, 381  
 Health reimbursement accounts (HRAs), 381  
 Health savings accounts (HSAs), 381–382  
 Hearing, ethics, 6  
   conference before, 5  
 Hearing officer, for ethics case  
   assignment of, 5  
   report and recommendations by, 6  
 Height. *See* Building height  
 Heliodon, 614

Hierarchy, definition of, 430  
 High school, life cycle costing of, 682–683, 682*f*, 683*t*, 688, 690*t*  
 High standard of care, owner-generated agreements on, 839–840  
 Hiring, 245, 253–263  
   and initial work period, 263  
   legal requirements for, 251  
   reactionary, 254  
   selection of candidate, 262  
 HMOs. *See* Health maintenance organizations  
 Hochberg, Hugh, 163–175  
 Hoffman, David L., 139–144  
 Hold-harmless clauses, 375–376, 833  
   and disputes, 388  
   in owner-generated agreements, 836–838  
   triggering, 836–837  
 Holistic approach, in value analysis, 657–658  
 Hot climates, sustainable design strategies for, 607  
 Hot list, for strategic planning  
   creating, 104, 105  
   sample, 106, 114  
 Hourly billing rates, 473–474  
   minimum, 321–322  
 How decision, in strategic planning, 104, 110–111  
 HR. *See* Human resources  
 HRAs. *See* Health reimbursement accounts  
 HSAs. *See* Health savings accounts  
 HSW. *See* Health, safety, and welfare issues  
 Human resources (HR), 244–311  
   administration, 244–246  
   administrative staff, 408  
   computer systems for, 422  
   core functions of, 245–246  
   job descriptions, 270–278  
   leadership development, 293–306  
   for multiple-office firms, 443  
   recruiting and hiring, 245, 253–263  
   reduction, resignation, and termination, 307–311  
   staff compensation and benefits, 279–285  
   staff development and retention, 285–293  
   value-added functions of, 246  
 Human resources management, 244–250  
   importance of, 250  
   orientation to, 268  
 Humid climates, sustainable design strategies for, 607  
 HVAC systems  
   IBC on, 822  
   life cycle costing of, 690, 691*t*  
   maintenance training for, 594, 599  
 Hybrid drawings, 649*f*–650*f*  
 Hybrid scanning techniques, 654  
   future of, 655

*I.A.E., Inc. v. Shaver*, 841  
 IAI. *See* International Alliance for Interoperability

IBC. *See* International Building Code  
 ICC. *See* International Code Council  
 IDP. *See* Intern Development Program  
 IFC. *See* International Fire Code  
 IFCs. *See* Industry foundation classes  
 Imhotep, 504  
 Immigration Reform and Control Act, 251  
 Immunities (liability), 40  
 Incentive zoning, 788–791  
 Incidental use areas, IBC on, 818  
 Inclusionary zoning, 788  
 Income protection and replacement benefits, 383  
 Income statements, 327, 339  
   sample, 328  
   of start-up, sample, 343  
 Indemnification clauses, 375–376, 833  
   and disputes, 388  
   in owner-generated agreements, 836–838  
   triggering, 836–837  
 Indemnity plans, 381  
 Indirect expense factor, 337  
 Indirect expenses, definition of, 323–324  
 Indirect salary expenses, 337–339  
 Individual retirement account (IRA), 384  
 Indoor air quality, sustainable design and, 607–608  
 Indoor environments, sustainable design and, 607–608  
 Industry foundation classes (IFCs), 426  
 Industry organizations, involvement with, and client relationships, 240–241  
 Inflation, 676  
 Information. *See also* Architectural information; Building information modeling  
   in architectural survey, 643  
   for clients, 241–242  
   “clog,” avoiding, 509  
   communication for, 223  
   in construction documentation, 532–535  
   distribution of, 712  
   free, sources of, 630–631  
   owner-provided, absence in owner-generated agreements, 851  
   and programming, 512–514  
   in value analysis, 659, 668  
 Information management, 428–434, 712  
   for architects, 428–430  
   importance of, 433  
 Information management systems, 421–427  
   development of, 430  
 Information models, 536–537  
 Information needs  
   clarification of, team building and, 137  
   responding to, 585  
 Information return, 95  
 Information surveys, review of, 53  
 Information technology, and ally selection, 148  
 In-house communications, and public relations, 208  
 Initial decision maker, AIA Documents program on, 883  
 Initial period, of employment, 263

- Innovators (firm), 117  
 business design model for, 123–124
- Insurance, 368–385. *See also* Liability  
 insurance; Professional liability insurance  
 administrative staff and, 409  
 business, 378–379  
 employer-related, 378, 380–385  
 health, 282–283, 381–383  
 insurability issues, 375–376  
 in integrated practice, 500  
 in joint venture agreements, 864  
 owner-generated agreements on,  
 848–849  
 professional societies and, 17  
 project, 373, 376  
 for records, 379, 456  
 and risk management, 357  
 unemployment, 252
- Insurance agents, 369  
 and bidding process, 571
- Insurance brokers, 369  
 selection of, 370–371
- Insurance companies, 369  
 admitted, 371  
 and claims, 394  
 licensed, 371  
 selection of, 370–371
- Integrated Budget and Schedule Method,  
 719
- Integrated design, 428, 612–613
- Integrated practice, 421, 499  
 AIA contract documents for, 885  
 and construction documentation  
 management, 550  
 and intellectual property rights, 499  
 technology to support, 420, 420*f*, 427
- Integrated project delivery, 492, 498, 499–500  
 in construction phase services, 576  
 firm technology plan for, 418
- Intellectual property rights, 833  
 and AIA Contract Documents, 884–885  
 copyright law, 43–47  
 ethics violations and, 7–8  
 in integrated practice, 499
- Intent, letter of, 569, 828  
 versus contract, 867
- Interest rate, term, 675
- Interests, in negotiation  
 identification of, 483–484  
 shared, identification of, 482  
 talking about, 481
- Intern(s)  
 legal requirements for, 251  
 preparing for mentoring, 70  
 training, 33–34
- Intern Development Program (IDP), 33–34,  
 57, 67, 292  
 human resources management and, 246
- Internal customer/client, definition of, 766
- Internal Revenue Code, 251–252
- Internal Revenue Service, 91
- International Alliance for Interoperability  
 (IAI), 426, 428
- International Association of Plumbing and  
 Mechanical Officials, 805
- International Building Code (IBC), 161, 804,  
 817–823  
 fundamentals of, 806–810
- International Code Council (ICC), 804–805,  
 817, 890  
 local adoption and, 814–815  
 performance code, 812–814, 812*f*–813*f*
- International Conference of Building  
 Officials, 804
- International design competitions, 156
- International Fire Code (IFC), 804  
 fundamentals of, 806–810
- International firms, 436–438
- International Foundation of Employee  
 Benefit Plans, 284
- International practice, 153–163  
 benefits of, 163  
 estimates in, 759  
 plan for, 157  
 variations in, 155*f*
- International Property Maintenance Code,  
 815
- International Reading Association. *See*  
 Individual retirement account
- International Residential Code (IRC), 161
- Internet  
 and advertising for staff, 255  
 and architect selection, 217  
 and business intelligence, 629  
 free resources on, 630–631
- Interoperability, 425–427  
 definition of, 431
- Interrogatories, 397
- Interviews  
 of building users, 631–636  
 of building users, guidelines for, 631–632  
 employment, 251, 257–262  
 mock, participating in, 32  
 project, 199–201  
 for public relations, 206  
 in qualifications-based selection,  
 219–220  
 sample guide for workplace, 633
- Intranets, 422
- Investments  
 return on financial, 674, 675*f*  
 in strategic planning, 111–112
- Invoices  
 formats for, 726  
 project manager and, 716  
 tips for, 717
- Invoicing, 478  
 requirements for, 724
- IRC. *See* International Residential Code
- Iujan, John-Paul, 835–852
- J**
- Janssen, Craig, 145
- Jargon, 229–231  
 and programming, 509–510
- Jefferson, Thomas, 22, 505
- Job(s)  
 classification of, 271  
 status of, 271–273  
 title of, 273–274
- Job applications, reviewing, 257
- Job descriptions, 270–278  
 for administrative staff, samples, 413–417  
 for architecture staff, samples, 277–278  
 content of, 273–276  
 development of, 276–278  
 purposes of, 270–271  
 tailored to firm, 277–278  
 template for, 273
- Job offers, 262
- Job-to-date expenses, 724*f*
- Johnson, Mark, 57–65
- Joint ventures, 42, 860–862  
 agreements in, 861–864  
 American/foreign, 154–155  
 and design-build, 506  
 formation process for, 861  
 and professional liability coverage, 376  
 rationale for, 860–861
- Jones, Joseph H., Jr., 36–47, 50–53
- Journals, personal  
 in construction contract administration,  
 591  
 as documentation, 711*f*, 712
- Jump-Start, 35
- Jung, Carl, 116
- Juran, Joseph M., 761
- Juran trilogy, definition of, 766
- Jurisdictional factors, and agreement  
 selection, 830–831
- Jury Service and Selection Act, 252–253
- Jussaume, Mark, 293–306
- Just-in-time delivery methods, lifelong  
 learning and, 61
- Just-in-time learning, 59
- K**
- Kendig, Lane, 797
- Keynote system, drawing organization, 541,  
 549
- Keys, drawing, 538–539
- Kinzer, David F. III, 93–103
- Kirk, Stephen J., 656–691
- Knowledge management, 429  
 in multiple-office firms, 443
- Koren, David, 176–189
- Kosch, Dan, 238
- Kremer, Eugene, 30–35
- L**
- Labor and material bond, 566
- Land use classifications, and zoning review,  
 797
- Landscaping, and water conservation, 800
- Language  
 and absolute expectations, 698, 698*t*  
 of clients, 223–224  
 foreign, and communication, 228  
 in interviews, 632

- and programming, 509–510
- for work statement, 274
- Large case track (arbitration procedure), 402
- Large firms
  - insurance coverage for, 382
  - multiple-office, 434–444
  - office administration in, 411–412
- Large group insurance coverage, 382
- Lasers
  - and hybrid survey technologies, 654
  - scanners, 651–654, 653f
  - tapes and levels, 643–645, 644f
- LATCH, for organizing information, 430
- Law. *See* Legal issues
- Lawless, Peggy, 628–642
- Lawsuits
  - factors affecting, 359
  - parties in, 351f
  - risk management and, 348–404
- Lawyers
  - and bidding process, 571
  - and litigation, 396–399
  - and nonstandard agreement forms, 834
  - and owner-generated agreements, 467
  - seeking, 42
  - selection of, 329
  - start-up advice from, 90
- Layers, in architecture drawings, 418
- Layoffs, use of term, 310
- LCA. *See* Life cycle assessment
- LCC. *See* Life cycle costing
- Leaders, future, nurturing, 170
- Leadership
  - basics of, 296–297
  - concepts in, 294–296, 295f
  - development of, 293–306
  - importance of, 293–294
  - ineffective, and teamwork, 130
  - level 5, 296
  - in multiple-office firms, 439–440
  - organization development and, 247
  - project managers and, 695–696
  - teams, 128
  - transitions in, 169
- Leadership in Energy and Environmental Design (LEED) certification, 600, 625–626
- Green Building Rating System, 614
- Leadership training, 297
  - aspects of, 299f
  - participating in, 298
  - tools for, 300–304
- Leads (sales)
  - development of, 186–188
  - finding, 189–190
- Learning
  - versus lifelong learning, 58
  - for professional development, 291–293
  - strategic versus just-in-time, 59
  - styles of, 298
  - taxonomy of, 61
  - types of, 297–299
- Learning needs survey, 60
- Lecturing
  - and international practice, 158
  - and recruiting, 256
- LEED. *See* Leadership in Energy and Environmental Design certification
- Legacy, architectural, record keeping and, 447–449
- Legal issues, 36–56
  - architects and, 36–43
  - and collections, 725
  - with construction documentation, 532–534
  - copyright, 43–47
  - of employment, 251–253
  - human resources management and, 246
  - legal structure and, 98
  - with records retention, 446
  - in recruiting, 261
  - structure of firm, 93–103
- Legal process, phases in, 49–50
- Legislative support, architects and, 29
- Leighton, Maxinne, 202
- Lender requirements, owner-generated
  - agreements on, 845
- Lessons learned, recommendations for, 305
- Letters
  - access, 239–240
  - confirmation, on budget, 771
  - cover, 198
  - of intent, 569, 828, 867
  - invitation, to survey, 636
  - notice to proceed, 580–581
  - termination, 309
- Level 5 leadership, 296
- Leverage, 344
  - definition of, 327
  - in negotiation, 486–487
- Liability(ies)
  - in claims process, 394–395
  - corporations and, 97
  - definition of, 324
  - and delivery methods, 492
  - legal issues, 39–40
  - limitation of, 356, 833
  - limited liability companies and, 102–103
  - partnerships and, 95
  - pro bono work and, 24
  - sole proprietorships and, 94
  - vicarious, 41, 357
- Liability insurance. *See also* Professional liability insurance
  - additional liability limits for projects, 373
  - commercial general, 377–378
  - coordination of, 378
  - professional, 369–377
- Licenses
  - architect, firm support for, 293
  - business, for start-ups, 91
  - copyright, 46–47
- Liebing, Ralph W., 532
- Life cycle assessment (LCA), 615, 621–623
  - problems and limitations of, 622–623
- Life cycle costing (LCC), 673–691
  - accuracy requirements for, 686
  - applications of, 688–690
  - data sources for, 688
  - definition of, 673
  - example, typical high school, 682–683, 682f, 683t
- in facility procurement, 688
- general purpose worksheet for, 685
- versus life cycle assessment, 621–622
- procedures in, 683–688
- typical areas of study in, 686–687
- in value analysis, 663, 670
- Life insurance, 383
- Lifelong learning, 57–65
  - approaches to, 61–62
  - documentation of, 64–65
  - need for, 58
  - rewards of, 65
  - sources for, 62–64
- Limitation of liability (LOL), 356, 833
- Limitations, statutes of, 40
- Limited liability companies, 102–103
  - legal attributes of, 98
  - tax attributes of, 99–100
- Liquidated damages, construction contract
  - on, 873
- Liquidity, 333
  - definition of, 327
- Listening, 224–226
  - and negotiation, 486
  - and programming, 510
- Litigation, 396–399
  - evaluation of, 399
  - pretrial process, 396–397
- Littell, Marsha C., 66–79
- Loans, 344–345
  - proposals for, 89, 344–346
- Lobbying, 23–24
  - AIA and, 21
  - professional societies and, 17
- Local government, architects and, 27
- Local media, and public relations, 205
- Location. *See also* Site
  - and construction cost, 754
  - and scope of construction phase services, 576
- LOL. *See* Limitation of liability
- Long-range planning, and zoning, 783–786, 795
- Loss, financial
  - definition of, 324
  - types of, 325
- Low chemical emissions, 619–620
- Low embodied energy, as green attribute, 621
- Lowther, Thom, 54–56, 62
- Loyalty, in client relationships, 237, 242–243


## M

- Machiavelli, Niccolò, 105
- Mackay, Harvey, 236
- Maintenance manuals, 598–599
- Maintenance training
  - at closeout, 599
  - omission of, 594
- Maister, David, 254
- Malin, Nadav, 616–628
- Malone, Nancy, 602–616

- Management. *See also* Project management versus administration, 405  
consultants, selection of, 329  
intensive, on fast-track projects, 743–744  
for international practice, 157, 159–160  
in joint venture agreements, 863  
reports, 327–329  
transitions in, 169
- Mandatory bonding, in design-build, 505
- Mandatory continuing education (MCE), 54–56, 58
- Manual(s). *See also* Project manual  
at closeout, 598–599  
operation, 598–599
- Manual drafting, 539
- Manufacturing, in life cycle assessment, 622
- Market(s)  
and construction cost, 754  
defining, 178  
global, 153–163  
team building for, 128
- Market analysis, for international practice, 157
- Marketing, 176–210  
administrative staffing and, 408  
cold calls, 187, 190  
for construction management, 504  
job descriptions and, 272–273  
listening and, 224–225  
for multiple-office firms, 440–441  
project manager and, 693  
public relations and, 209  
software for, 422
- Marketing coordinator, job description for, 415–416
- Marketing plan, 182–184  
development of, 182–183  
sample, 183
- Marketing strategies, 176–189  
for international practice, 158–159  
for start-ups, 92
- Master project log, 450
- Master specifications, 548–549
- MasterFormat, 430–431  
and cost management, 748  
divisions of, 542–543
- MasterSpec, 421, 542, 549, 560–561  
on closeout, 601  
divisions and sections of, 544–546  
editing assistance, 560–561  
section naming convention, 560  
on submittals, 583  
on substitutions, 774–775  
supporting documents, 560–561
- Material safety data sheets (MSDS), 600
- Materials, building  
environmentally preferable, 610  
fire standards for, 811–812  
hazardous, responsibility for in owner-generated agreements, 850  
IBC on, 823  
LEED and, 625–626  
lifelong learning and, 59–60  
recycling and reuse, in life cycle assessment, 622  
storage of, 588
- Mattox, Robert F., 335–336
- Maurel, Kathleen C., 270–278, 285–293
- Mazria, Ed, 602
- McDonough, William, 603
- MCE. *See* Mandatory continuing education
- McLaughlin, Herbert, 523
- McLaughlin, Michael, 197
- McMahon, Edward T., 782
- Means of egress  
codes on, 810, 810*f*  
IBC on, 821–822
- Measurement, of performance, in quality improvement, 764
- Measuring tapes, laser, 643–645, 644*f*
- Media, news  
appropriate, targeting, 202–203  
building relationships with, 207  
working with, 204–205
- Mediation, 399, 402–404  
evaluation of, 403–404  
process of, 402–403
- Medical insurance, 381–382  
limited medical plan, 382
- medical plans, 282–283
- Meetings  
administrative staffing and, 408–409  
agendas for, 709  
facilitation of, 136–137  
management of, 706–710, 707*t*  
project, 586–588  
team building and, 135–136
- Memoranda, 710  
in construction contract administration, 591  
of understanding, versus contract, 867
- Mendelsohn, Paul T., 54–56
- Mentees, expectations of, 77
- Mentor  
expectations of, 77  
roles of, 76  
selection of, 76
- Mentoring, 32, 66–79  
beginning, 68–70  
definition of, 66–67  
preparing for, 70  
rationale for, 68  
and training, 292
- Mentoring programs, 67  
agreement for, 73  
designing, 71–75  
evaluation forms for, 74–75  
implementation of, 75–78  
plan for, 79
- Mergers (firm), 172, 346–347  
and design-build, 506  
model of, 171*f*
- Message  
for acquiring projects, 193–194  
branding and, 180  
erosion of, 222–223  
focus on, 226  
and public relations, 208
- Message systems, 422
- Meyer, C. Richard, 153–163
- Milestone chart, 731  
evaluation of, 731  
sample, 733*f*
- Milestone checks, 720–721
- Minimally processed materials, as green attribute, 620–621
- Minimum hourly billing rates, 321–322
- Minor change in work, in construction contract, 869
- Minutes, project manager and, 709–710
- Mission  
and marketing strategy, 179  
term, use of, 106
- Mistakes, learning from, 717, 718
- Mixed occupancy, IBC on, 818
- Model codes, 803
- Model hosting, in integrated practice, 499–500
- Money, insuring against loss, 379
- Monitoring  
client objectives, 714  
and cost management, 751  
project managers and, 693, 696–697, 713–717  
technique for, 719
- Monophotogrammetry, 646, 647*f*
- Morality. *See* Ethics
- Moreno, Elena Marcheso, 82–93
- Moser, Cliff S., 760–770
- Motivation  
project managers and, 696  
team building and, 129
- MSDS. *See* Material safety data sheets
- Multiple-office firms, 434–444  
future of, 444  
management of, 438–444  
types of, 435–437  
virtual, 437
- Mumford, Lewis, 25
- Musica, Frank, 385–395, 728–729
- Mutchler, Robert C., 501–504

## N

- NAAB. *See* National Architectural Accrediting Board
- NAHB. *See* National Association of Home Builders
- Narrative report, 709–710
- NASF. *See* Net assignable square footage
- National Architectural Accrediting Board (NAAB), 34–35, 887
- National Archives and Records Administration, 455
- National Association of Builders, 876
- National Association of Home Builders (NAHB), 817, 890
- National Building Information Modeling Standard (NBIMS), 426, 542
- National CAD Standard (NCS), 428, 431, 537, 542, 559–560  
and archives, 454  
benefits of, 559

- National Council of Architectural Registration Boards (NCARB), 34–35, 53, 803, 887  
 rules of conduct, 3
- National Electrical Code, 805
- National Ethics Council. *See* AIA National Ethics Council
- National Fire Protection Association (NFPA), 804–805, 807–808, 811, 891
- National Institute of Building Sciences, 536, 891  
 Facility Information Council, 542, 559
- National Institute of Standards and Technology (NIST), 814, 893
- National Labor Relations Act, 252
- National Society of Professional Engineers, 3, 891
- Natural materials, as green attribute, 620–621
- NBIMS. *See* National Building Information Modeling Standard
- NCARB. *See* National Council of Architectural Registration Boards
- NCS. *See* National CAD Standard
- Needs assessment  
 for lifelong learning, 58–60  
 for recruiting and hiring, 254–255
- Negligence, liability for, 39  
 indemnification clauses and, 838
- Negotiation, 479–490  
 acceptable ranges for outcome, 487  
 versus bidding, 563  
 of bids, 568–569  
 or bidding phase, 562–574  
 budget for, 488  
 and client evaluation, 355  
 concepts in, 480–483  
 in construction management, 502  
 and construction procurement, 562  
 preparing for, 485–486, 563–564  
 principled, 480  
 project manager and, 704  
 strategies for, 485–490  
 techniques for, 483–485
- Neighborhood development, traditional, 794
- Neighborhood preservation, 791–792, 794
- Nelb, Tawny Ryan, 455–456
- Net assignable square footage (NASF), 516
- Net multipliers  
 calculating, 321  
 and project expense management, 339–340
- Net worth, definition of, 324
- Networking, 185–186
- New Urbanism, 791–792
- News media, and public relations, 205
- NFPA. *See* National Fire Protection Association
- Niche practice  
 definition of, 126  
 establishment of, 126–128
- NIST. *See* National Institute for Standards and Technology
- Nonconforming work  
 avoiding, steps for, 778  
 and changes, 582  
 owner-accepted, list of, 597
- Nonrecourse provisions, in owner-generated agreements, 848
- Nonreimbursable direct costs, 475
- Nonrenewable energy sources, minimizing use of, 609–610
- Nonstandard agreement forms, 834
- Nonverbal communication, 228
- Notes  
 in drawings, 539  
 and listening, 225
- Notice to proceed, 580  
 construction contract on, 871  
 sample, 581
- Notices, and bidding documents, 564, 567
- 
- Objective criteria, in negotiation, 482, 488–489
- Objectives  
 cost, 747  
 for programming, 511–512  
 in value analysis, 662–663
- O'Brien, James J., 251–253
- Observation, of behavior, 636–638
- Occupancy  
 codes on, 807  
 IBC on, 817–818
- Occupancy phase, sustainable design and, 613
- Occupational Safety and Health Act, 252
- OD. *See* Organization development
- Offers, proposals as, 828
- Off-gassing, 619–620  
 test chamber, 619f
- Office administration, 405–417  
 in architecture firms, 405–409  
 elements of, 407–409  
 in large firms, 411–412  
 in medium firms, 411  
 in small firms, 409–411  
 and documentation, 534–535  
 orientation to, 268  
 positions in architecture firms, 413–417  
 regional resources for, 412–413
- Office assistant, job description for, 415
- Office equipment and supplies, 408  
 insurance coverage for, 379  
 and firm growth, 342  
 for start-ups, 91
- Office manager, job description for, 413–414
- Office space  
 financing, 342  
 for start-ups, 90–91
- Office tours, 32
- Oglesby, Robert E., 143
- O'Hagan, Audrey, 137
- Omissions  
 and changes, 582  
 in fast-track projects, 738
- OmniClass Construction Classification System, 431–432  
 tables, 432
- Open-ended questions, for survey, 634  
 sample coding of responses to, 637
- Operation manuals, 598–599
- Operations, for international practice, 157
- Opportunities, and marketing strategy, 178–179
- Oral agreements, 355, 828  
 in bidding, 566–567
- Ordinances, zoning, 783
- Organization  
 for cost management, 759  
 of information, 429–430  
 project manager and, 693, 700, 702f, 704
- Organization development (OD), 247–248
- Organizational Peer Review Program, 139–144  
 benefits of, 143–144  
 participants on, 143
- Orientation (new employee), 245, 266–269  
 first day of, content of, 267  
 follow-up to, 268–269  
 participants in, 267  
 preparation for, 267–268  
 responsibility matrix for, 269f  
 topics for, 267
- Orr, David, 603–604
- Outcome-based value pricing, 475
- Outline specifications, in schematic design phase, 525
- Outreach, opportunities for, 207–208
- Overhead  
 definition of, 323  
 management of, 337–340  
 and multiple offices, 435
- Overhead expenses  
 budget, 313, 316  
 disability benefits for, business, 383  
 sample, 317
- Overlay zoning, 788–790
- Overruns  
 control of, 722  
 in fast-track projects, 740
- Overtime, 722
- Owings, Nathaniel, 509
- Owner(s). *See also* Client(s)  
 characteristics of, and agreement selection, 829–830  
 in construction phase, 578  
 consultants retained by, 859–860  
 and design-build, 505  
 and documentation, 533–534  
 and project delivery methods, 492  
 and project teams, 852  
 relationships with, legal issues in, 41  
 and substitutions, 777
- Owner-architect agreements, 826–835  
 construction contract administration services in, 575  
 negotiation of, 485  
 project manager and, 713  
 selection of, 828–834
- Owner-contractor agreements. *See also* Construction contract architect's adviser role, 42  
 forms, 566

Owner-generated agreements, 467, 835–852  
concerns in, 836–838  
missing provisions in, 849–852  
owner's boiler-plate provisions in, 845–849  
Owner occupancy date, omission of, 593  
Owners 401(k) plan, 384  
Ownership. *See* Firm ownership

## P

PACs. *See* Political action committees  
Paid-time-off benefits, 283  
Panel participation, and public relations, 207  
Pareto chart, definition of, 766  
Pareto cost model, function, 669*f*  
Parking, and zoning, 798–799  
Partnering, construction, 132–133  
Partnerships, 94–96  
agreements, 84, 94–95  
legal attributes of, 98  
partners and, 166  
tax attributes of, 99–100  
Part-time personnel, 266  
Passive design, 606–607  
Pattern books, 793*f*  
Patton, Jack D., 144–152  
Payback period, 684  
Payment. *See also* Fee(s)  
applications and certifications, 588–589  
basis, construction contract on, 869–870  
construction contract on, 869–872  
construction progress, 758  
final, 590, 872  
owner-generated agreements and, 844–845  
progress, construction contract on, 871  
related information, 589  
terms, appropriate, 478  
Payroll, 245–246  
burden, 323  
in computerized financial systems, 330  
PCPs. *See* Primary care physicians  
PDAs. *See* Personal digital assistants  
Peer review, firm, 139–144  
benefits of, 143–144  
and cost control, 572  
costs of, by firm size, 141  
exit report, 142–143  
follow-up, 143  
initiation of, 140  
preparation for, 141  
process, 142  
resources for, 142  
structure of, 139–140  
PEGs. *See* Professional emphasis groups  
Pelli Clarke Pelli Architects, 606  
Peña, William, 509, 511  
Pension plans, 384  
Performance  
level, and project budget, 748  
measurement of, in quality improvement, 764  
Performance appraisals, 287–290  
checklist for, 289

definition of, 288  
documentation of, 290  
face-to-face review in, 289  
problems, addressing, 290–291  
purposes of, 288  
rationale for, 288  
recommendations for, 305  
timing of, 288  
Performance bond, 566  
Performance codes, 812–814, 812*f*–813*f*  
Performance criteria, and substitutions, 774–775  
Performance management  
job descriptions and, 272  
organization development and, 247  
Performance specifying, 543  
Performance surveys, 360-degree, 300–301, 302*f*–303*f*  
Performance zoning, 789–790  
Period for correction of work, construction contract on, 872  
Perkins, Bradford, 157, 520–531  
Personal digital assistants (PDAs), 644  
Personal financial advisers, selection of, 329  
Personal space, cultural issues with, 228–229  
Personal vision statements, 303–304  
Personality, of project manager, 695  
Personality profiles  
and leadership training, 301  
and team building, 134–135  
Personnel. *See* Employee(s); Staff  
Perspective correcting (PC) shift lenses, 648  
PERT. *See* Project evaluation review technique  
Peters, Tom, 226  
Pettit, Mark S., 143  
Photogrammetry  
digital, 645–646, 647*f*  
software for, 646–648  
PhotoModeler software, 646, 648*f*  
Pink, Daniel, 471  
Piven, Peter, 329, 332–347  
Plan(s). *See also* Insurance; Work plans  
business, 86–87, 89, 178  
environmental, and zoning, 786  
tablet computers and, 645  
Planned unit developments (PUD), 788, 790  
Planning  
business, 312–314  
city, and zoning, 782–803  
and code enforcement, 816  
disaster, for records, 448  
with fast-track projects, 742  
financial, 312–321, 332–333  
long-range, and zoning, 783–786, 795  
process of, 785*f*  
production, 551–554  
project, 319, 856  
project manager and, 693, 700–704  
for risk, 349  
strategic, 103–115, 122, 176–189  
PlanTrax, 719  
Plater-Zyberk, Elizabeth, 117

Plumbing  
codes on, 816  
IBC on, 823  
POE. *See* Postoccupancy evaluation  
Pogo, 359  
Point rating systems, for zoning, 790  
Point-cloud post-processing software, 651–, 651*f*  
Political action committees (PACs), 24, 29  
professional societies and, 17  
Political participation  
architects and, 25–30  
types of, 29–30  
Pomerantz, Paul, 19  
PON. *See* Harvard Project on Negotiation  
Porras, Stan, 108  
Portfolio workshops, participating in, 32  
Positioning a firm in the market, 180–182  
Post-construction services, 464  
Postoccupancy evaluation (POE), 640–641  
and cost control, 758  
project manager and, 717  
and sustainable design, 612  
Postoccupancy services, 601  
sustainable design and, 613  
Pound, Wendy, 628–642  
PPOs. *See* Preferred provider organizations  
Practice Academy pilot program, 35  
Pre-bid conference, 567  
Precautionary principle, in sustainable design, 608  
Precedence diagram, in critical path method, 733, 734*f*  
Preconceptions, and programming, 509  
Preconstruction conference, 569, 580  
agenda for, sample, 581  
Preconstruction services  
in construction management, 502  
and cost control, 572  
Predesign services, 463  
sustainable design and, 613  
Preferred provider organizations (PPOs), 282–283, 381  
Preliminary estimate of construction cost, in schematic design phase, 525–526  
Prepaid expenses, 325  
Presentations, 194  
orientation, 268  
planning, 200–201  
tips on, 200, 227  
Present-worth method, life cycle costing, 683–684  
analysis format, 686  
Press releases, 205–206  
Pretrial process, 396–397  
Prevention versus detection, definition of, 766  
Price(s)/pricing, 469–479. *See also* Cost(s)  
architect's services and, 470–472  
and closing sale, 194–195  
escalation of, 753–755  
fixing, 52  
risk assessment and, 472–473  
strategy for, 475–478  
unit, 757

- Primary care physicians (PCPs), 282, 381
- Principal
  - career of, and ownership transition, 167*f*
  - definition of, 40
- Prior acts, and professional liability insurance, 372
- Private finance initiative, 162
  - and project delivery, 498
- Privity, and third-party lawsuits, 40
- Pro bono professional services, 24
  - firm support for, 293
  - and lifelong learning, 62
- Problem, focus on, in negotiation, 484
- Problem solving
  - in construction phase, 585–586
  - and political process, 26
  - project managers and, 696
- Production, building information modeling and, 536–537
- Production methods
  - selection of, 552–553
  - specifications on, 549–550
- Production planning
  - and document management, 551–554
  - elements of, 552
- Productivity, definition of, 339
- Profession, obligations to, AIA Code of Ethics on, 12
- Professional aspirations, versus ethical conduct, 4
- Professional conduct, 2–9
  - and legal issues, 38
  - rules of, 51
- Professional corporations, 96
- Professional development, 57–79, 291–293
  - human resources management and, 246
  - job descriptions and, 272
  - and performance appraisal, 287
- Professional emphasis groups (PEGs), in SDA, 407
- Professional liability insurance, 369–377
  - AIA-commended program, 371
  - coverage under, 372–377
  - obtaining, 369–372
  - policy limits in, 373–375
  - policy provisions in, 371–372
  - premiums for, 374–375
- Professional life, 1–35
  - architecture education participation, 30–35
  - community involvement, 22–24, 62, 208
  - political participation, 25–30
  - professional conduct, 2–9, 38, 51
  - professional societies, 14–19, 293, 413, 887–893
- Professional media, and public relations, 204
- Professional services agreement, 462, 466–467
- Professional societies, 887–893
  - definition of, 15
  - dues of, support for, 293
  - emergence of, 14–15
  - future of, 18–19
  - involvement in, 18
  - and office administration, 413
  - participating in, 14–19
  - roles of, 15–17
- Profit
  - definition of, 324
  - firmwide, 337
- Profit centers, pros and cons of, 438–439
- Profit plan, 313, 318
  - establishment of, 319–320
  - paths to, 313*f*
  - and pricing, 477
  - restatement of, 320
  - sample, 318
  - in work plan, 704
- Profitability, 332–333
  - client expectations of, 665
  - recommendations for, 305
- Profit-sharing plans, 384
  - legal structure and, 102
- Program
  - and design, 520
  - project manager and, 714
- Program managers, 492
  - and cost control, 572
- Programming, 507–519
  - approaches to, 510
  - and cost control, 572
  - platform for, 508–510
  - as separate service, 508
  - steps for, 510–519
  - strategies for, 514–516
- Progress payments, construction contract on, 871
- Project(s). *See also under* Project
  - acquiring, 105, 189–196, 238–239
  - characteristics of, and agreement selection, 830–831
  - construction contract for, 870–871
  - conclusion, 717
  - difficult, 353
  - master log for, 450
  - materials for, organizing, 429
  - monitoring, 713
  - organizing, 105
  - record retention for, 450
  - requirements of, 461
  - risk management for, 359
  - screening, 190
  - seeking, 189–196
  - selection of, 352–353, 362–364
  - size, programming and, 516
  - status, project manager and, 716–717
  - types at high risk of claims, 352*t*
  - updates on, and public relations, 206
  - Web sites for, 421–422
- Project accounting, 324
- Project alliances, 498–500
- Project charges, control of, 721–722
- Project closeout. *See* Closeout
- Project completion
  - final, 590–591, 597–598, 872
  - substantial, 389–390, 589–590, 596–597, 872
- Project control, 718–731
  - in computerized financial systems, 330–331
  - definition of, 718
  - schedule and budget control, 721–725
  - scope and services control, 719–721
  - variances and course corrections, 725–731
- Project database, setting up, 580
- Project definition, 460–506
  - compensation, 469–479
  - delivery methods, 491–501
  - negotiation, 479–490
  - of services, 460–468
- Project delivery. *See also* Integrated project delivery
  - bidding or negotiation phase, 562–573
  - and client relationships, 242
  - closeout, 592–602
  - construction contract administration, 574–592
  - construction documentation, 531–558
  - construction procurement, 562–573
  - design phases, 520–531
  - digital architectural survey technologies, 642–656
  - environmentally preferable product selection, 616–628
  - with fast-track projects, 741–744
  - in international practice, 161–162
  - life cycle costing and, 673–691
  - orientation to, 268
  - players in, 492–493, 493*f*
  - programming, 507–519
  - research methods for, 628–642
  - sustainable design, 602–616
  - value analysis, 656–672
- Project delivery methods, 491–501
  - characteristics of, 495*t*
  - and construction contract, 866
  - and design fees, 563–564
  - emerging, 497–500
  - factors affecting, 493–495
  - and scope of construction phase services, 576
  - selection of, 831–832
  - sequences and key decisions of, 498*t*
  - types, 495–497
  - and value analysis, 661
- Project description, in work plan, 701
- Project design meetings, 708
- Project design team agreements, 852–862
- Project directory
  - updating, 580
  - in work plan, 703–704
- Project documents. *See* Documentation
- Project evaluation review technique (PERT), 501
- Project expenses, management of, 339–340
- Project insurance, 373, 376
- Project interview, 199–201
- Project management, 692–759
  - activities in, 692–693
  - of architectural projects, 699–718
  - control, 718–731
  - of fast-track projects, 735–744
  - importance of, 718
  - objective versus subjective side of, 694
  - software for, 425, 735

- Project management experts, 118
  - business model for, 125
- Project managers
  - activities of, 695–698
  - characteristics of, 695–698
  - and control, 718–731
    - effective, 692–699
    - importance of, 699
    - multiple, 694
    - origins of, 694–695
    - selection of, 355
- Project manual, 533
  - contents of, 532
- Project meetings, 586–588
  - management of, 706–710, 707*t*
- Project notebook, 730
- Project planning
  - consultants and, 856
  - streamlined, 319
- Project reporting, project manager and, 716–717
- Project schedule. *See* Schedule/scheduling
- Project services
  - basic versus additional, 464–465
  - building information modeling and, 468
  - changes in, 467–468
  - control of, 719–721
    - and cost management, 745
    - defining, 460–468, 470–471
    - negotiation of, 462
    - scope of, factors affecting, 461
    - steps for defining, 461–462
    - tracking, project manager and, 713–714
    - types and categories of, 463–464
- Project support, administrative staff and, 409
- Project teams, 128
  - assessment of, 367
  - management of, 706
- Project-at-a-glance work plans, 701
- Project-type specialists (firms), 117
  - business model for, 124
  - and qualifications-based selection, 215–216
- Property insurance, 378–379
- Proposals
  - development of, 192–193, 196–199
  - effective, 197
  - fee, 827–834
  - job descriptions and, 272–273
  - as offers, 828
  - parts of, 198
  - and pricing, 477–478
  - for project services, 461–462
  - types of, 197–198
- Proprietary specifying, 548
- Prospects, client
  - courting, 190–191
  - go/no-go decision on, 191
  - identifying, 240
- Public, obligations to, AIA Code of Ethics on, 11
- Public relations, 201–210
  - plan for, 201
  - tools of, 205–207
- Public service, 22–24
- Public transportation, 799

- Publicity
  - and ally selection, 148
  - for start-ups, 92
- PUD. *See* Planned unit developments
- Punch list, 589–590
  - form for, 597, 602
- Purnell, Marshall E., xvii

## Q

- QBS. *See* Qualifications-based selection
- QM. *See* Quality management
- Qualifications, professional
  - accurate representation of, 8
  - client identification of desired, 215–216
  - in job descriptions, 275–276
  - matrix of, 217–218, 218*f*
  - Standard Form 330, Architect-Engineer, 198, 215
- Qualifications-based selection (QBS), 214–220
  - interviews in, 219–220
  - mandated, 214
  - responses to, 217–220
  - voluntary, 215
- Quality
  - and project budget, 748
  - building, and delivery methods, 494
  - and construction cost, 754
  - continuous improvement of, 764
  - definition of, 760
  - of design, 442–443, 770–781
  - design, maintaining, 770–781
  - experts in, 118–119, 125
  - improvement, steps to, 762–764
  - and life cycle costs, 673–674, 674*f*
  - in multiple-office firms, 442–443
  - project control and, 731
  - and quantity, in programming, 512*f*
  - requirements for, 762
  - value analysis on, 670
- Quality management (QM), 760–781
  - audits, 765
  - definition of, 766
  - design quality maintenance, 770–781
  - implementation of, 768–769
  - origins and development of, 760–761
  - policy, 767–768
  - in practice, 760–770
  - program, establishment of, 761–762
  - project manager and, 715
  - project notebook and, 730
  - terminology in, 766
  - tools and techniques in, 764–767
- Quantitative requirements, programming and, 516–518
- Quantity
  - and quality, in programming, 512*f*
  - survey method, and cost estimates, 753
- Quatman, G. William, 504–506
- Question(s)
  - from bidders, responding to, 571
  - and communication, 227–228
  - for envisioning, 640

- for facility performance evaluation, 641
- for guided walk-through, 638
- in interview, 632
- for job interview, 259–260
- for survey, 634–636
- types of, 634
- Questionnaires
  - in peer review, 141
  - pretesting, 636
  - for research, guidelines for, 634–636
- Quotes, and public relations, 207

## R

- Rate of return, 684
  - on extra investment, 684
- Raw materials, in life cycle assessment, 622
- Reception tasks, office administration, 407
- Receptionist, job description for, 414–415
- Recognition, human resources management and, 246
- Recording technologies, new, 643–654
- Records
  - archiving, 445–457
  - and closeout, 591
  - electronic. *See* Electronic files
  - format of, 452–454
  - insurance coverage for, 379, 456
  - management of, 428–434
  - paper, organization of, 432–433
  - preservation conditions for, 448, 454
  - selection for retention, 446
  - storage and retrieval of, 432–433
- Records management, administrative staffing and, 408
- Records retention, 445–457
  - benefits of, 457
  - legal reasons for, 446
  - schedule for, sample, 453
  - selection for, 446
  - tips on, 457
- Records retention policy
  - development of, 445–452
  - evaluation of, 445–446
  - implementation of, 452–457
  - on security and confidentiality, 456
- Recruiting, staff, 245, 253–263
  - external services for, 256
  - follow-up for, 261
  - job descriptions and, 271–272
  - legal issues in, 261
  - ongoing, 256–257
- Recycled content, as green attribute, 618
- Recycling and reuse, in life cycle assessment, 622
- Redline work sessions, 708
- Reductions in fire resistance requirements, IBC on, 820
- Reed Design Registry, 148, 152
- Reference standards, specifying with, 548
- References
  - giving, 260
  - in job interview, 258
  - in proposal, 199

- Referrals, 239–240
  - of employees, 255
- Refusal, in negotiation, alternatives to, 487
- Regional authorities, architects and, 27–28
- Regional firms, 436
- Regional identity, sustainable design and, 604–605
- Registration, architect
  - partnerships and, 95
  - state boards, 894–896
  - statutes on, 51
- Regulation(s)
  - building, 782–823
  - and construction cost, 754
  - and design, 521
  - importance of, 794
  - and international practice, 161
  - of professional practice, 50–53
- Regulatory agency review, and cost control, 573
- Regulatory requirements, in work plan, 704
- Rehearsals, for project interviews, 200–201
- Reigle, Jack, 103–128
- Reimbursable direct costs, 475
- Reimbursable expenses
  - definition of, 323
  - project manager and, 716
- Relationship management models, 235–237
- Relationships. *See* Client relationship(s)
- Renewable energy sources, maximizing use of, 609–610
- Renovation projects
  - estimates for, 758–759
  - and scope of construction phase services, 576
- Report(s)
  - action item format, 586–588
  - and cost management, 751
  - financial, 326–330
  - in peer review, 142–143
  - and project control, 722–723
  - on project meetings, 709–710
  - time analysis, 338–339
  - in value analysis, 660
- Reporting, project manager and, 716–717
- Reporting relationships, in job descriptions, 275
- Representation of the work, 588–589
- Requests for information (RFIs), 585, 880
  - in fast-track projects, 739
- Requests for proposals (RFPs), 185
  - and cost-based selection, 212
  - and proposal development, 196–198
  - responding to, 827–834
- Requests for qualifications (RFQs), 197
- Research
  - behavior observation, 636–638
  - benefits of, 641
  - business intelligence, 628–631
  - on client preferences, 241–242
  - on clients, 352
  - envisioning, 639–640
  - facility performance evaluation, 640–641
  - guided walk-throughs, 638–639
  - interviews, 631–636
  - and lifelong learning, 62
  - methods, 628–642, 629*t*
  - and niche practice, 127
  - and programming, 509, 511
  - survey design, 634–636
- Reserves, and cost estimates, 753–755
- Resignation of staff
  - versus termination, 310
  - voluntary, 307
- Resource conservation, and programming, 516
- Resources, flow of, as environmental impacts, 623
- Response scales, questionnaire, 635
- Responsibility(ies)
  - allocation of, format for, 854–855
  - in claims process, 394–395
  - clarification of, team building and, 137
  - for closeout, 595–596
  - in construction cost management, 745–747
  - consultants and, 853–856
  - for documentation, 533–534
  - in international practice, 160–161
  - in job description, 274
- Responsibility matrix
  - sample, 703
  - in work plan, 701
- Restatements, in interviews, 632
- Restrictive specifying, 548
- Resumes
  - reviewing, 257
  - workshops on, participating in, 32
- Retainage, construction contract on, 872
- Retained earnings, 342
- Retained search, 256
- Retention (of staff), 285–293
  - pay equity and, 262
  - staffing from within and, 254
- Retirement, 311
  - benefit types, 283, 383–385
  - sole proprietorships and, 94
- Retirement plans, 91, 384–385
  - legal structure and, 102
- Retreats, and team building, 138
- Retrocommissioning, 611
- Revenue
  - definition of, 323–324
  - per employee, 336–337
- Revenue projection, 313–314
  - sample, 315
- Review. *See also* Peer review
  - building department, and cost control, 573
  - of competitive bidding, 53
  - design, 305, 788
  - of design competitions, 53
  - design studio, participating in, 31
  - documentation, 555–558, 579, 715
  - of fees, 53
  - of information surveys, 53
  - of job applications, 257
  - in quality improvement, 763
  - regulatory agency, and cost control, 573
  - of resumes, 257
  - structural, and zoning, 802
  - of submittals, 583–584, 772–774, 843–844
  - year-end, project manager and, 717
  - zoning, 797–802
- Reviewers
  - preparation of, 141
  - qualifications of, 140
- Rewards
  - human resources management and, 246
  - organization development and, 248
- Rezoning, 795–797
- RFIs. *See* Requests for information
- RFPs. *See* Requests for proposals
- RFQs. *See* Requests for qualifications
- Richard J. Zitz, Inc. v. Dos Santos Pereira*, 45
- Richards, Brenda L., 405–417
- Ries, Al, 181
- Rinella, Tony, 417–428
- Risk(s)
  - and agreement selection, 832–833
  - allocation of, AIA Documents program and, 877
  - in construction management, 503
  - and delivery methods, 494
  - in design-build, 505
  - of fast-track projects, 737–743
  - identification and evaluation of, 349
  - in international practice, 157, 159–160
  - and owner-generated agreements, 838–840
  - planning for, 349
  - term, 348–349
  - value analysis on, 670, 671*t*
- Risk assessment
  - matrixes, 360–367
  - and pricing, 472–473, 477
- Risk management, 348–404
  - administrative staff and, 409
  - dispute management and avoidance, 385–395
  - dispute resolution, 396–404, 872–873
  - insurance, 17, 357, 368–385, 409, 456, 500, 864
  - in integrated practice, 499
  - methods of, 349–350
  - in project management, 698–699
  - rationale for, 349
  - starting, 349
  - strategies for, 348–359
- RISMI steps, 762–764
  - diagram of, 763*f*
- Robinson, Bill, 145
- Roles, team building and, 137
- Ronco, William C., 128–139, 293–306
- Root cause analysis, 765–766
- Roschen, William E., 22–24
- Rosenzweig, Pat, 211–222
- Rules of conduct, 52
- Rutledge, Andrea S., 14–19

## S

- S corporations, 97–98, 101
  - legal attributes of, 98
  - tax attributes of, 99–100

- Safe Harbor 401(k) plan, 384
- Salary expense, indirect, 337–339
- Sales, 185–188
  - closing, 194–195
  - external, 173–174
  - of firm, 170–172
  - internal, 174
- Samples of work, attainment and provision of, 8–9
- Sarbanes-Oxley Act, 252
- SAVE International, 657, 666
- Scale, of drawings, 538
- Scanners, laser, 651–654, 653f
- Schedule/scheduling
  - and agreement selection, 831
  - and budget, 748
  - charts, sample, 731f, 732f, 734f
  - in construction management, 501–502
  - control of, 721–725
  - and delivery methods, 494
  - and design, 522
  - and design process, 523
  - and document management, 551–552
  - in drawings, 539
  - for meetings, 707
  - methods for, 731–735
  - owner-generated agreements on, 841–842
  - preliminary, in work plan, 702
  - programming and, 518
  - project manager and, 704
  - sample, 705t
  - and scope of construction phase services, 576
  - tips on, 704
- Schedule of values, 757–758
  - construction contract on, 871
- Schematic design, 525–526
  - sustainable design and, 613
- Schon, Donald, 305
- Schools of architecture, 897–902
- Schultz, Fredric W., 368–385
- Schwarz, Aaron, 434–444
- Scientific classification, definition of, 430
- Scope creep, 750
- Scope of project/services/work. *See also* Programming
  - and budget, 748
  - control of, 719–721, 750–751
  - defining, 149, 470–471
  - and delivery methods, 494
  - factors affecting, 461
  - in international practice, 161–162
  - matrix of, 149, 150f
- Score, in strategic planning, 110–111
- Screening, 257–262
  - telephone, 257
- Search firms, 256
- SectionFormat, 547–548
- Securities, insuring against loss, 379
- Security, and programming, 516
- Selection, of architects, 211–222
  - cost-based, 212–214
  - qualifications-based (QBS), 214–220
  - value-based, 220–221
- Self-awareness, and leadership, 297
- Self-control, in negotiation, 489–490
- Self-directed learning, 63
- Seminars, and training, 292
- SEP. *See* Simplified employee pension plan
- Sequential phasing, versus fast-track, 736f
- Service marks, 44
- Service providers, for digital architectural survey technologies, 654–655
- Severance pay, 311
- Sexual harassment, 252
- Shareholder agreements, 84
- Shea, Gordon F., 67
- Sherman Antitrust Act, 3
- Shonka, Mark, 238
- Shop drawings, 583
- Shoup, Donald, 798
- Shu, Evan H., 445–457
- Sibilia, Kirsten, 201–210
- Sick leave, 283
- Siegel, Henry, 602–616
- Silent Generation, 250
- Simonsen, Søren D., 25–30
- Simple class, definition of, 430
- Simple 401(k) plan, 384
- Simplified employee pension plan (SEP), 384
- Simpson, Grant A., 692–718, 735–744
- Simpson, Scott, 293
- Site
  - and budget, 748
  - and construction cost, 754
  - and design, 521
  - issues, dispute resolution techniques for, 392–393
  - safety, construction management and, 503
  - visits, in construction phase, 586
- Site analysis
  - and design process, 523
  - and programming, 514
- Site preparations, in peer review, 141
- Skills, for starting firm, 83
- Small Business Administration, 93
- Small firms
  - AIA Trust programs for, 380
  - client relationship programs for, 191
  - CM services, providing, 504
  - employee handbook for, 246
  - financial management software for, 332
  - leadership in, 296
  - liability insurance and, 374, 375, 389
  - marketing messages of, 193
  - medical insurance and, 382
  - office administration in, 409–411
  - and payment terms for international projects, 162
  - profit plan for, 319
  - project managers in, 694–695
- Small group coverage, 382
- Smart Code zoning, 792–793
- Smart growth, 788
- Smith, Debra L., 782–803
- Smith, Robert P., 266–269
- SMPS. *See* Society for Marketing Professional Services
- Social events, and retention, 287
- Social Security Act, 252
- Society for Design Administration, 407
- Society for Marketing Professional Services (SMPS), 188–189, 891
- Software, 417–428. *See also under* Computer
  - accounting, 324
  - from Athena Institute, 615
  - for building performance evaluation, 814
  - client relationship management programs, 191
  - for cost estimates, 756
  - financial systems, 330–332
  - photogrammetric, 646–648
  - programs for architecture practice, 423–425
  - for project management, 425, 735
  - for surveys, 635
- Solaire, 606
- Sole proprietorships, 94
  - and administrative staff, 410
  - legal attributes of, 98
  - tax attributes of, 99–100
- Solvency, 333
  - definition of, 327
- Southern Building Code Congress International, 804
- Space
  - criteria, programming and, 513
  - requirements, programming and, 516, 517f
  - utilization and efficiency of, and construction cost, 754
- Special causes, definition of, 766
- Special conditions, in construction contract, 868
- Specialists. *See also* Consultant(s)
  - and cost management, 746–747
  - for digital architectural survey technologies, 654–655
  - project-type, 117, 124, 215–216
- Specialization (firm), 117
  - business model for, 124
  - and marketing strategy, 178
- Special-use permits, 789
- Specifications, 542–550
  - in construction contract, 868
  - in design phases, 528
  - and drawings, 539
  - master, 548–549
  - methods of, 543–548
  - organization of, 542–543
  - on production methods, 549–550
- SpecText, 549
- SPECWARE, 561
- Speeches, and public relations, 207
- Split limits, for projects, 373
- Sponsorships, for experiential learning programs, 32–33
- Sprinklers, IBC on, 821
- Staff. *See also* Employee(s)
  - administrative, 406–409
  - and alliances, 151
  - borrowed, 265–266
  - compensation and benefits, 279–285

- departures of, 307–311
- development of, 285–293
- financing, 342
- introduction of, in orientation, 268
- and ownership transition, 164
- and public relations, 208–209
- recruiting and hiring, 253–263
- reduction in, 310–311
- retention of, 285–293
- sample schedule for, 705*t*
- selection of, and risk management, 355
- for start-ups, 87
- Staffing, 253–263
  - alternatives, 263–266
  - project manager and, 693, 700, 704–705
  - work plan on, 702–703
- Staffing plan, 313–315
  - sample, 316
- Stakeholders
  - and envisioning, 639–640
  - and guided walk-through, 638–639
  - research on, 628–642
- Standard City Planning Enabling Act, 795
- Standard Form 330, Architect-Engineer Qualifications, 198, 215
- Standard of care, 37–38
  - and construction cost management, 746
  - measurement of, 38–39
  - owner-generated agreements on, 839–840
  - project manager and, 714
- Standard State Zoning Enabling Act, 795–796
- Standardization, in quality improvement, 763–764
- Standards. *See also* Code(s)
  - building, 803–817
  - and codes, 810–812
- Standard-track procedures, of arbitration, 401
- Standing neutral, and dispute resolution, 393
- Start-up, firm, 82–93
  - administrative staffing, 409–411
  - capital for, acquisition of, 87–89, 341–347
  - deciding on, 83–85
  - income statement and balance sheet for, sample, 343
  - personnel in, 85
  - tasks for, 87–92
  - timing of, 85
- Stasiowski, Frank A., 718–735
- State government, architects and, 28
- State registration boards, 894–896
- Statement of deliverables, in work plan, 701
- Statute of limitations, 40, 446
  - construction contract on, 873
- Statute of repose, 40, 446
  - construction contract on, 873
- Stein, Steven G. M., 835–852
- Steinberg, Harris M., 25
- Stereophotogrammetry, 646, 647*f*
- Stipulated sum fees, 473
  - construction contract on, 869
- Stock shares, issuing to public, 347
- Storm windows, life cycle costing of, 688, 689*t*
- Story height, and construction cost, 754
- Strain, Larry, 602–616
- Strategic alliances, 145
- Strategic learning, 59
- Strategic planning, 103–115, 122
  - catalytic decisions in, 104–112
  - follow-through in, 113–115
  - and marketing, 176–189
- Strategic systems, 105
- Strategies, prime, 110
  - sample, 110
- Strengths, firm, and marketing strategy, 178
- Strings (drawings), 538
- Strong, Norman, 421, 499
- Structural design, IBC on, 822
- Structural review, and zoning, 802
- Structured interview, 258
- Strunk, William, Jr., 229
- Students
  - employing, 33
  - hiring, 254
  - mentoring, 32
  - sponsoring, 32–33
- Studios, team building for, 128
- Sturdza v. United Arab Emirates*, 46
- Subclass, definition of, 430
- Subcontracting, 265
  - contracts in, 873–874
- Subdivision regulations, 782
- Submittals
  - management of, 583–585
  - manipulation of, 779–780
  - owner-generated agreements on, 843–844
  - review process, management of, 772–774
  - tracking, 584
- Substantial completion, 589–590, 596–597
  - and claims, 389–390
  - construction contract on, 872
- Substantial similarity, 46–47
- Substitutions
  - and bidding problems, 570–571
  - and changes, 583
  - controlling, for design quality, 774–777
  - documentation of, 775–777
  - request form for, 775, 776*f*–777*f*
- Subsystems, and cost estimates, 753
- Suburbs, and sustainable design, 604–605
- Summary
  - in guided walk-through, 639
  - in interviews, 632
  - in strategic planning, 114–115
- Supervision, and retention, 286–287
- Supplementary conditions, in construction contract, 868
- Surveying
  - digital architectural survey technologies, 642–656
  - quantity survey method, and cost estimates, 753
- Surveys
  - architectural, goals of, 642
  - design of, 634–636
  - information, review of, 53
  - learning needs, 60
  - performance, 360-degree, 300–301, 302*f*–303*f*
- Suspension of membership (ethics penalty), 6
- Suspension of services, 730
- absence in owner-generated agreements, 850–851
- Sustainability
  - for built environment, definition of, 603
  - definition of, 798
  - and design, 521
  - and zoning, 788
- Sustainable design, 602–616
  - documentation of, at closeout, 600–601
  - evaluation tools for, 613–615
  - importance of, 615
  - and long term, 611
  - measures for achieving, 603–612
  - and zoning review, 798
- Symbols, in drawings, 539
- Synergy
  - and alliances, 148–149
  - team building and, 129
- Synthesis, in design process, 523–524
- Systems, IBC on, 822–823

## T

- Tablet computers, 644, 645
- Tange, Kenzo, 522
- Tapes, laser, 643–645, 644*f*
- Target(s)
  - cost, 747–750
  - of drawings, 538–539
- Targeting (marketing), 186
- Task order agreement, 214
- Tax issues
  - with alternative staffing, 264–265
  - corporations and, 97–98
  - with employment, 251–252
  - and international practice, 160
  - legal structure and, 99–102
  - limited liability companies and, 103
  - partnerships and, 95–96
  - professional societies and, 17
  - rates, 101
  - for start-ups, 91
  - year, 101
- Teaching. *See also* Architecture education and international practice, 158 and lifelong learning, 61–62 and recruiting, 256
- Team(s)
  - assignments of, 580
  - communication, computer tools for, 427
  - for peer review, 140–141
  - performance assessment for, 134
  - project design team agreements, 852–862
  - project management, 694
  - types of, 128–129
  - and value analysis, 656–672
  - work plan, 701
- Team building, 128–139
  - activities for, 133–138
  - myths and facts about, 131
  - organization development and, 247
  - principles of, 138
  - process of, 130–133
  - and value analysis, 657–658

Teamwork  
 challenges of, 129–130  
 myths and facts about, 131  
 power of, 129

Technical references, in documentation, 554

Technology. *See also under* Computer and design, 521  
 digital architectural survey technologies, 642–656  
 lifelong learning and, 59  
 plan for, 418

Telecommuting, 249–250

Telephone screening, 257

Telephones, computer systems for, 422

Temperate climates, sustainable design strategies for, 607

Temporary personnel, 266

Termination  
 absence in owner-generated agreements, 850–851  
 checklist for, 308  
 letter template for, 309  
 of membership, 6  
 of staff, 307–310

Thinking, styles of, and programming, 508–509

Third-party actions (legal issues), 39–40

Threats, and marketing strategy, 179

3-D computer modeling, 418–419

360-degree performance survey, 300–301, 302f–303f

Thresholds, fire suppression, IBC on, 818–819

Time  
 and construction cost, 755  
 4-D models and, 420  
 owner-generated agreements on, 841–842  
 and programming, 512

Time analysis report, 339  
 sample, 338

Title VII, 252

Tool for the Reduction and Assessment of Chemical Impacts, 623

Top Ten Measures of Sustainable Design, 603–612

Trade associations, definition of, 15

Trade press, 893  
 and public relations, 205

Trade shows, and public relations, 207

Trademarks, 44

Traditional neighborhood development, 794

Training  
 at closeout, 599  
 human resources management and, 246  
 in leadership, 297–304  
 opportunities for, 292–293  
 for professional development, 291–293  
 types of, 292

Transactional/transformational leadership, 295–296

Transect-based zoning, 792–793, 793f

Transferable development rights, 788

Transitions  
 easing, 172–173  
 key, 165  
 of ownership, 163–175

Transit-oriented development, 794

Transmittal forms, 591

Transportation  
 in life cycle assessment, 622  
 and zoning, 799

Travel arrangements, administrative staff and, 409

Trials  
 procedures in, 397–398  
 process before, 396–397

Tri-Service Plotting Guidelines, 559

Trout, Jack, 181

Trust  
 in client relationships, 233–234, 237–238  
 in negotiation, 488

Tuition reimbursement, 292

Twomey, Timothy R., 852–864

2030 Challenge, 602–603

## U

UDC. *See* Uniform Development Code

UDS. *See* Uniform Drawing System

Umbrella policies, 378

Underwriters Laboratories (UL), 548, 892

Unemployment insurance, 252

Uniform Development Code (UDC), 790–791

Uniform Drawing System (UDS), 537, 541, 559

UniFormat, 431, 748–750  
 and cost management, 748–750

Uniformed Service Employment and Reemployment Rights Act, 252

Union of International Architects, 156, 163

Unit cost methods, 474

Unit prices, 757  
 construction contract on, 870

Universities, recruiting from, 255–256

Unstructured interview, 258

UR. *See* Utilization ratio

Urban issues, and sustainable design, 604–605

Usage phase, in life cycle assessment, 622, 626

U.S. Energy Information Administration, 602

U.S. Export/Import Bank, 159, 162

USGBC. *See* United States Green Building Council

U.S. Green Building Council (USGBC), 600, 892

Utilization, 339  
 definition of, 337

Utilization ratio (UR), 339

## V

VA. *See* Value analysis

Vacation time, 283

Valence, Jean, 71

Value  
 definition of, 658  
 strategic proposition, 664f

Value added, definition of, 766

Value analysis (VA), 564, 656–672, 770  
 and changes, 582–583

concepts in, 658  
 cost of, 662  
 definition of, 657–658  
 development and recommendation phase, 671–672, 672f  
 implementation considerations in, 660–662  
 methodology of, 658–660  
 strategies for, 662–663  
 study, example of, 667–672  
 tools in, 663–664  
 training and certification in, 665

Value engineering (VE), 774  
 definition of, 658

Value management, definition of, 658

Value proposition, 107

Value stream mapping, 767  
 definition of, 766

Value-based selection, 220–221  
 responses to, 220–221

Value-enhanced design, definition of, 658

Values  
 architects and, 25  
 of client, and architect selection, 217  
 competing, 9  
 and professional ethics, 2–3  
 professional societies and, 16  
 schedule of, 757–758, 871  
 and Who decision, 106–108

Variances  
 control of, 725–731  
 and zoning, 795

VE. *See* Value engineering

Ventilation. *See also* HVAC systems  
 IBC on, 822

Venturi, Robert, 522

Verbal communication, 227–229

Veterans, employment rights of, 252

Vicarious liability, 41, 357

Vietnam Veteran Readjustment Act, 252

*Village of Euclid (Ohio) v. the Ambler Realty Co.*, 787

Virtual building information modeling. *See* Building information modeling

Visas, working, 261–262

Vision  
 and leadership, 297, 303–304  
 and marketing strategy, 179  
 and political process, 26

Visualization  
 computer tools for, 417  
 software for, 424

Visuals, for project interviews, 200

Volatile organic compounds (VOCs), 619–620

Volume methods, and cost estimates, 751–753

Voluntary resignation, 307

Volunteering, 23  
 and political involvement, 30

## W

Wages, 251

Walk-throughs, guided, 638–639

Warranties

at closeout, 599  
construction contract on, 872  
construction contract administration and, 578  
owner-generated agreements on, 840  
Waste, flow of, as environmental impacts, 623  
Water use  
codes on, 816  
conservation of, 608–609, 799–801  
Watershed, of project, 606  
Weaknesses, firm, and marketing strategy, 178  
Weather. *See also* Climate  
and scope of construction phase services, 576  
Web sites  
and selection of alliance partner, 148  
on business intelligence, 630–631  
project, 421–422  
Welcome package, employee, 267–268  
Welfare benefits, 282–283  
Western Association of Architects, 875–876  
Western Fire Chiefs Association, 805  
“What” decision, 111–112  
in strategic planning, 105  
“Where” decision, 108–110  
in strategic planning, 104  
White, E. B., 229  
“Who” decision, in strategic planning, 104, 106–108  
“Why” decision, in strategic planning, 104–105  
Wight, Suzanna, 35

Williams, Roger B., 153–163  
Wilson, E. O., 606  
Windows, and sustainable design, 607  
Wines, James, 604  
Withholding, taxes, 251–252  
Wolff, Howard J., 189–201  
Woodward, Cynthia A., 260  
Work. *See also* Scope of project/services/  
work  
construction contract on, 870–871  
doing, 105  
getting, 105, 189–196, 238–239  
organizing, 105  
Work environment, human resources  
management and, 248–250  
Work flow management, software for, 425  
Work plans, 700–704  
goal-based, 301–303, 304f  
project at a glance, 701  
Work sessions, redline, 708  
Work sharing, in multiple-office firms, 441–442  
Workers’ Adjustment and Retraining  
Notification Act, 253  
Workers’ compensation  
insurance, 380  
legal requirements of, 252–253  
Working capital, 335–336  
Working visas, 261–262  
World-life balance, 248–249  
World Watch Institute, 602  
Wren Building, 649f–650f  
Writing

business plans, 86–87  
for communications, 229–231  
and public relations, 207  
records retention policy, 450–451  
Wurman, Richard, 430

## Y

*Yankee Candle Company, Inc. v. New England  
Candle Company, Inc.*, 45  
Year-end review, project manager and, 717

## Z

Zero-based design, 665  
Zerras, James, 143  
Zoning, 782–803  
appeals, 796  
and code enforcement, 816  
commissions/boards, 783–784, 796–797, 800  
comprehensive plan, elements of, 786f  
concepts, 786–794  
and design process, 523  
innovations in, 788  
long-range planning and, 783–786  
as regulatory tool, 784  
tools for, 795–796  
Zoning review  
factors affecting, 797–801  
process of, 801–802  
purpose of, 801