INDEX

29 CFR 1926 OSHA Construction Industry Regulations, 188
4-Dimensional Management, 134
4-Dimensional Manager, 135
Accident, cost of, 157–158
Activity:
   definition in a network schedule, 238
   element of human behavior, 121
Activity on Arrow (AOA) network schedule,
   248, 249, 250, 252
Activity on Node (AON) network schedule,
   249, 252, 253, 257
Addendum (Addenda), 306–307
Affiliation needs, 124–125
Application for payment, 354–355
Architect, 9
Architectural construction, 4
As-built drawings, 50, 57, 373
Attributes:
   great leaders and managers, 22
   successful supervisors, 22
Autocratic leadership, 114
Backward Pass, 255, 259–261
Bar Chart, 241
   examples of, 242–246, 276, 277
Basic functions of management, 19
Behavior, types of, 134
Bid documents, 306, 307
Blanchard, Ken, 118, 120
Briggs, Katherine, 133
Buffer, 288
Calculations, network, 255, 259
Capital equipment, 211
Cash as a resource, 197
Cash flow:
   definition, 197
   role in construction company failure, 197
   supervisor’s influence on, 197, 200
Certificate of Occupancy, CO, 377
Certificate of Substantial Completion, 375, 378
Change:
   drivers in construction, 383–389
   impact on construction supervision, 389
   finalizing, 373
Changes in the work, 362
Clean-up, project, 370
Closeout of field operations, 369
Closeout of subcontractors and suppliers, 376
Closeout, project, 369
Closing out an estimate, 217
Coaching style, 119
Coded time cards, 223, 350–351
Commercial construction contractor, 305, 332
Commissioning, 370
Communication:
   barriers, 29, 32
   company office, 58–69
deadline outside the company, 70–71
   importance, 29
   improving oral, 31, 35
   improving written, 49
   job site, 50–58
   oral, 29, 31
   technology, 31
   why written, 48
   written, 47
Company overhead, 215
Competition, 7
Competitive bid contracting, 316, 332
Competitive sealed proposals, 324–325
Conceptual skills, 18, 111, 186
Conscientiousness, 134
Construction company:
   failure rate, 8
   functional organization, 17
   policies, 187
Construction contracts, types of, see Types
   of construction contracts
Construction industry segments, 4
Construction manager, 10, 309, 332
   construction manager agent (CMA), 11,
   309, 310, 332
   construction manager at risk (CMAR),
   11, 309, 311, 332
Construction site:
   layout, 196
   managing, 194
   planning, 193
Construction Specifications Index (CSI), 214, 223

Construction team:
- characteristics of successful, 79–81
- critical need, 76–77
- definition, 78–79

Consultant, 10

Consulting engineer, 10

Contract:
- a practical understanding, 170–171
- advantageous use of the contract, 176–181
- components of a construction contract, 173–174
- ConsensusDOCS 750, 169, 170, 174–177, 179–180
- couplets, 174–176
- definition, 171
- importance to the supervisor, 170
- misconceptions, 169
- oral vs. written, 171
- required elements for enforceability, 172
- understanding the contract, 176–177

Contract documents for a project, 306–307

Contractors, types of, see Types of contractors

Controlling:
- as a management function, 20
- definition, 20

Cost accounting, cost reporting, cost control system, 221–222

Cost codes, 223

Cost coding system, 223

Cost estimate, definition, 202

Cost of an accident, 157–158

Cost plus a fixed fee contract, 322, 325, 332

Cost plus a percentage of cost contract, 323, 325, 332

Cost plus contract, 321, 325, 332

Cost plus contract with a guaranteed maximum, 323, 325, 333

Cost plus contract with a guaranteed maximum and a savings clause, 324–325, 333

Cost reimbursable contract, 321, 325

Cost reports, 228–231, 349

Costs:
- controlling, 201
- determining, 202
- of an accident, 157–158

Craft labor:
- hiring, 186
- work assignments, 186

Craft skills, 17

Craft worker, characteristics of, 19

Crew balance chart, 283–284

Critical activity, 252, 255, 261

Critical path, 252, 255, 256, 259–261, 274

Critical Path Method (CPM), 252

Crosby, 365

Custom builder, 304, 332

Customer definition, 40

Customer relations, 29, 40

Cycle: estimating, project cost accounting, project cost control, historical database information, 204

Data sheets, 190

Delegating style, 120

Delegation, 192, 194

Deliveries, managing, 192

Deming, 365

Democratic leadership, 115

Design-bid-build, 305, 332

Design-build, 308, 332

Detailed estimate, 202

closing out, 217

components of, prime contractor, 205

components of, subcontractor, 205

finalizing, 217

materials estimation, 206

purpose of, 203

relationship to project time, 206

submitting, 217

Developing construction supervisors, 389–390

Directing:
- as a management function, 20
- definition, 21

Directing style, directive style, 118

DISC strategies, 134

Discrimination:
- avoiding claims, 105
- characterization, 103
- prevention, 107–108

Diversity:
- in relation to discrimination, 101–102
- in the construction workforce, 101–103
- is valuable, 103

Documentation, 187, 345

company office, 58–69

design, 70

developed outside the company, 70–71

final, 373

function of job site, 48

improving, 49

job site, 50–58

organizing, 71–72, 431–432

procurement, 70

production, 70

Documenting, 345–346

Dominance, 134
INDEX

DPC, Design-Procure-Construct, 4
Duration:
  activity, 238
  project, 238
Early Finish (EF), 252, 259, 260, 264, 265
Early Start (EF), 252, 259, 260, 262
Earned value, 359
Education for the supervisor, 394
Educational Testing Services, ETS, 133
Ego, status, esteem needs, 124
Electronic mail, 69–70
Emergency services, 196
Emotional intelligence, 135
Employee relations, 89–108
Engineer, 9
Engineered construction, 4, 305
Engineering News-Record, 13
ENR magazine, 13
Equal employment opportunity laws, 103–105
  Age Discrimination in Employment Act, 104
  Americans with Disabilities Act, 104
  Civil Rights Act of 1964, Title VII, 104
  Family and Medical Leave Act, 105
  protected categories, 104
  reasonable accommodation, 104–105
Equipment:
  capital, 211
  contractor-owned, 212
  investment in, 194
  managing, 194
  operating cost, 212–213
  ownership cost, 212–213
  preventing loss and theft, 94
  rented/leased, 212
Equipment warranties, 372
Estimate:
  definition, 202
  detailed, 202
  factor, 202
  finalizing, 217
  parameter, 202
  preparation of, 204
  submitting, 217
  supervisor’s role, 203
  types of, 202
Estimating:
  as a career option, 203
  equipment cost, 211
  indirect costs, 215
  labor cost, 208, 210
  markup, 216
  materials cost, 206
  philosophies of, 209
Evacuation plan, 197
Experience Modifier Rating (EMR), 158, 326
Factor estimate, 202
Fair Labor Standards Act (Minimum Wage Law), 15
Fast track, 312, 332
Field authorizations, 50, 57–59
Field procedures, 341
Filing system, 339–340
Final documentation, 373
Final request for payment, 377
Finalizing:
  change orders, 373
  the estimate, 217
First run study, 289–291
Float, 255, 261
Flow chart, 284
Foreman, xviii, 328–329, 331
Forms of:
  construction contract award, 316, 332
  cost plus contract, 322, 332
  negotiated contract, 321, 332
  Forward Pass, 255, 259, 261
  Free On Board (FOB), 208
  Freight on Board (FOB), 208
Freud, Sigmund, 121
Gang box inventory sheet, 194, 199
Gantt Chart, 241
General conditions, project overhead, 215
General contractor, 305
General overhead, 215
Goldratt, Eli, 207
Goleman, Daniel, 135
Handoff meetings, 196, 335
Harassment, 105–108
  counterproductive effects, 106
  definition, 105–106
  hostile environment, 106
  prevention, 107–108
  sexual, 107
Hard money contracting, 318
Hawthorne Studies, 121
Hazardous Materials Management (HAZMAT), 188
Heavy construction contractor, 305, 332
Hersey, Paul, 118
Herzberg, Frederick, 130
Hierarchy of contracts on a project, 8, 314–315
Hierarchy of needs, 122
Highway contractor, 305, 332
Historical cost data, 204, 209, 233
INDEX

Honesty in cost reporting, 351
Hopper boxes for filing, 341
Human factors, 122
Human relations skills, 18, 111, 186
Human side of enterprise, 128
Hygiene factors, 131

Incentive clause, 324–325
Incident report, 352
Indirect cost, 215
Indirect labor cost, 210
Industrial contractor, 305, 332
Influence, 134
Information:
  improving the flow of, 73
  obtaining, 71–72
  part of communication, 29
Inscape Publishing, 134
Institutional construction, 305
Internal rate, 213
International Group for Lean Construction, 297
Intracompany meetings, 361
Inventory sheet for gang box, 194

Job log, 50–53, 187, 346–348
Job order contracting, 327, 333
Job Site:
  files, 339–340
  layout, 196
  managing, 194
  materials handling, 193
  planning, 193
  storage, 194
  Johnson, Dewey, 118
  Jung, C. G., 133
  Juran, 365

Kiersey, David, 134

Labor burden, 210
Labor cost reports, 228
Labor productivity, 209
Lag time, 260–261
Last planner process, 297–299
Late Finish (LF), 258, 266, 268
Late Start (LS), 258, 266–267
Lay-down area, 196
Leadership:
  autocratic, 114
  definition, 112
  democratic, 115
  participative, 116–117
  situational, 117–118
  styles of, 114
  Leadership and Motivation, 128
  Leadership and the One Minute Manager, 118
  Lean construction, 292
  Lean Construction Institute, 297
  Letters, 60–63
  Letter of Intent, 217, 317
  Liquidated damages, 237
  Listening, 29
    active, 37
    enhancing active, 39
    factors affecting, 38
  Lump sum competitive bid contracting, 6, 318
  Lump sum negotiated contracts, 321, 332
  Maintenance factors, 131
  Management, functions of, 19
  Management of Organizational Behavior, 118
  Management skills, 18
  Management worker, characteristics of, 19
  Managing:
    construction site, 194
    time, 237, 277
  Manpower needs, determining, 186
  Margin, 216
  Markup, 216
  Maslow, Abraham, 122
  Materials:
    billable, 194
    deliveries, 192
    handling on the jobsite, 193
    management of, 189
    pricing, 207
    procurement of, 189
  Materials Safety Data Sheets (MSDS), 188
  Materials supplier, 11, 314–315
  Mayer, John, 135
  Mayo, Elton, 121, 127
  McGregor, Douglas, 128
  Meeting minutes, 48, 60, 62–68
  Meetings, 360
  Memorandum, 60–61
  Mentor, definition of, 392
  Minimum Wage Law (Fair Labor Standards Act), 15
  Minutes, meeting, 48, 60, 62–68
  Mobilization, 335
  Mockups, 190
  Motivation:
    and personality, 122
    elements of, 120
    factors, 131
  Motivation-Hygiene Theory, 130
  Motives, definition, 121
  Myers, Isabel Briggs, 133
INDEX 437

Myers-Briggs Foundation, 134
Myers-Briggs, Type Indicator, MBTI, 133

Near misses, 352
Needs:
  affiliation, 124–125
  as motivators, 123
dominant, 123, 127
ego, status, esteem, 124
perceived, 123
physiological, 123–124
security, 123–124
self-actualization, 124, 126
social, 124–125
subconscious, 121
survival, 123–124
Negotiated contracting, 321, 332
Negotiation, 41
  conditions for successful, 43
  definition, 42
  process, 42
Network calculations, 255, 259
Network schedule, 247
  Activity on Arrow (AOA), 248–250
  Activity on Node (AON), 249, 252, 253,
  257
development of, 256
  updates, 274
Networking:
  contribution to professional
development, 391–392
definition, 391
Node in a network schedule, 248–250, 252
Notice to proceed, 217, 317
Objectives, project, 342, 345
Occupational Safety and Health Act
  (OSHA), 188
Office overhead, 215
Ongoing operations, 345
Organizing:
  as a management function, 20
definition, 20
Overage allowance, 207
Overhead costs, 215
Owner, 8, 314–315
Owner-designer contract, basic services,
  9
Owner training, 372
Owner’s manuals, 372
Parametric estimates, 202
Participative leadership, 116
Parts lists, 372
PDCA Cycle, 365
Performance evaluation:
  a supervisor responsibility, 90
  benefits, 91–92
  formal, 93–101
  informal, 97–101
  objectives, 90–91
  process, 92–101
Periodic payment request, 354–355
Personal Profile System, 134
Personal Protective Equipment (PPE),
  187
Photographs for documentation, 349
Physical progress, measuring, 353
Physiological needs, 123
Plan, Do, Check, Act Cycle, 365
Planning:
  as a management function, 19
definition, 19
  emergency services, 196
  materials deliveries, 192
  work to be done, 186
Please Understand Me: Temperament,
  Character, Intelligence, 134
Plot plan, 196
Positive cash flow, 197
Practical strategy for quality, 366
Preconstruction:
  conference, 336–337
  meetings, 360
Prime contractor, 11, 314–315
Prime contractor’s project organization,
  328–329
Private construction projects, 304, 332
Privity of contract, 8
Problem analysis, 146–148
  isolated or trend, 146–147
  severity and immediacy, 148
Problem definition, 145–146
Problem detection, 143–145
Problem side effects, 149–150
Problem solution:
  development, 148
  implementation, 150–151
Problem solution selection:
  the best solution, 149–150
Problem solving:
  key supervisory competency, 142
  systematic process, 142–151
Problem solving process, learning, 151
Problems and symptoms, 145–146
Process chart, 282–283
Production, 280
Production analysis tools:
  crew balance chart, 283–284
  flow chart, 284
  process chart, 282–283
<table>
<thead>
<tr>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production improvement:</td>
</tr>
<tr>
<td>a systematic approach, 292–299</td>
</tr>
<tr>
<td>on an ongoing activity, 282–288</td>
</tr>
<tr>
<td>prior to activity commencement, 289–291</td>
</tr>
<tr>
<td>two basic principles, 288</td>
</tr>
<tr>
<td>Production vs. productivity, 280</td>
</tr>
<tr>
<td>Productivity, 122</td>
</tr>
<tr>
<td>Productivity vs. production, 280</td>
</tr>
<tr>
<td>Profit, 5</td>
</tr>
<tr>
<td>Project budget:</td>
</tr>
<tr>
<td>definition, 225</td>
</tr>
<tr>
<td>example, 226, 227</td>
</tr>
<tr>
<td>Project cleanup, 370</td>
</tr>
<tr>
<td>Project closeout, 369</td>
</tr>
<tr>
<td>Project coordination meetings, 361</td>
</tr>
<tr>
<td>Project cost accounting system, 204, 221–222</td>
</tr>
<tr>
<td>Project cost accounting, cost reporting, cost control system, 350</td>
</tr>
<tr>
<td>Project delivery methods, 4, 5, 305, 316, 332</td>
</tr>
<tr>
<td>Project indirect cost, 215</td>
</tr>
<tr>
<td>Project labor budget, 225</td>
</tr>
<tr>
<td>Project manager, 328–329, 331</td>
</tr>
<tr>
<td>functions of, 23</td>
</tr>
<tr>
<td>Project objectives, 342–345</td>
</tr>
<tr>
<td>Project organization and relationships, 327</td>
</tr>
<tr>
<td>Project overhead, 215</td>
</tr>
<tr>
<td>Project review, 234, 379</td>
</tr>
<tr>
<td>Project team, 17</td>
</tr>
<tr>
<td>Projects, types of, see Types of projects</td>
</tr>
<tr>
<td>Public construction contracts, 303, 332</td>
</tr>
<tr>
<td>Punchlist, 375</td>
</tr>
<tr>
<td>Punchlist consciousness, 366, 381</td>
</tr>
<tr>
<td>Purchasing agent, 189</td>
</tr>
<tr>
<td>Quality:</td>
</tr>
<tr>
<td>definition, 364</td>
</tr>
<tr>
<td>practical strategy, 366</td>
</tr>
<tr>
<td>writings on, 365</td>
</tr>
<tr>
<td>Quality assurance program, 364</td>
</tr>
<tr>
<td>Quality management program, 363</td>
</tr>
<tr>
<td>Quality, quality assurance, quality control, 363</td>
</tr>
<tr>
<td>Quantity takeoff, (QTO), 206</td>
</tr>
<tr>
<td>Rate:</td>
</tr>
<tr>
<td>equipment rental/lease, 213</td>
</tr>
<tr>
<td>internal rate, 213</td>
</tr>
<tr>
<td>Record drawings, 50, 57, 373</td>
</tr>
<tr>
<td>Records, job site, 187</td>
</tr>
<tr>
<td>Recruiting construction supervisors, 389–390</td>
</tr>
<tr>
<td>Reliable, reliability, 133</td>
</tr>
<tr>
<td>Report, 60, 64, 69</td>
</tr>
<tr>
<td>Reporting, 345, 349</td>
</tr>
<tr>
<td>Residential contractor, 304, 332</td>
</tr>
<tr>
<td>Retainage, 360</td>
</tr>
<tr>
<td>Retention, 360</td>
</tr>
<tr>
<td>Review, project, 379</td>
</tr>
<tr>
<td>Risk:</td>
</tr>
<tr>
<td>business, 141</td>
</tr>
<tr>
<td>construction industry, 6</td>
</tr>
<tr>
<td>definition, 138</td>
</tr>
<tr>
<td>design, 140</td>
</tr>
<tr>
<td>financial, 139</td>
</tr>
<tr>
<td>incident, 140</td>
</tr>
<tr>
<td>in construction, 6, 138–141</td>
</tr>
<tr>
<td>in estimating labor, 209</td>
</tr>
<tr>
<td>in labor costs, 225</td>
</tr>
<tr>
<td>in markup determination, 217</td>
</tr>
<tr>
<td>in materials price quotations, 207</td>
</tr>
<tr>
<td>management, 141–142</td>
</tr>
<tr>
<td>quality, 140–141</td>
</tr>
<tr>
<td>relation to problems, 137–138</td>
</tr>
<tr>
<td>schedule, 139–140</td>
</tr>
<tr>
<td>Root cause analysis, 146, 379</td>
</tr>
<tr>
<td>Safety, 155–167</td>
</tr>
<tr>
<td>a mentality of safety, 163–166</td>
</tr>
<tr>
<td>accident, incident definition, 156</td>
</tr>
<tr>
<td>cost of an accident, 157–158</td>
</tr>
<tr>
<td>creating a safe work environment, 159–163</td>
</tr>
<tr>
<td>dealing with safety events, 166–167</td>
</tr>
<tr>
<td>experience modification ratio, 158, 326</td>
</tr>
<tr>
<td>importance of the safety program, 156–158</td>
</tr>
<tr>
<td>supervisor’s responsibilities and activities, 158–159</td>
</tr>
<tr>
<td>meetings, 361</td>
</tr>
<tr>
<td>planning, 187, 196–197</td>
</tr>
<tr>
<td>training, 187</td>
</tr>
<tr>
<td>Safety needs, 123–124</td>
</tr>
<tr>
<td>Safety planning:</td>
</tr>
<tr>
<td>emergency services, 196</td>
</tr>
<tr>
<td>evacuation plan, 197</td>
</tr>
<tr>
<td>Salovey, Peter, 135</td>
</tr>
<tr>
<td>Samples, 190</td>
</tr>
<tr>
<td>Satisfaction in the workplace, 131</td>
</tr>
<tr>
<td>Savings clause, 324–325, 333</td>
</tr>
<tr>
<td>Schedule:</td>
</tr>
<tr>
<td>Activity on Arrow (AOA), 248–250, 252</td>
</tr>
<tr>
<td>Activity on Node (AON), 249, 252, 253, 257</td>
</tr>
<tr>
<td>as a time management tool, 199, 239</td>
</tr>
<tr>
<td>Bar Chart, 241–246, 276, 277</td>
</tr>
<tr>
<td>definition, 199, 238–239</td>
</tr>
<tr>
<td>Gantt Chart, 241</td>
</tr>
</tbody>
</table>
importance of, 239
people’s reliance upon, 240
relationship to estimating, 240
relationship to planning, 239
short interval, 275–277
types of, 199, 241
Schedule of values, 353, 355
Schedule updates, 352
Scheduling:
  definition, 199, 238–239
  relationship to estimating, 240
  relationship to planning, 239
Security needs, 123–124
Self-actualization needs, 124, 126
Self-performed work, 205, 208
Separate contracts system, 315, 332
Setting up:
  the field office, 339
  the site, 338
Shop drawings, 190
Short interval schedule, 275–277
Single contract system, 314, 332
Site plan, 196, 338
Site planning checklist, 338
Situational leadership, 117–118
Skill:
  craft, xix, 17
  management, 18
  soft, xix
  technical, xix, 17
Social needs, 124–125
Spare parts, 372
Speculative builder, 304, 332
Staffing:
  as a management function, 21
  definition, 21
Subconscious needs, 121
Subcontractor, 11, 314–315
  proposal, 214
  scope statement, 214
Subcontractor’s project organization, 331
Submittal tracking log, 190–191
Submittals, 190
Submitting the estimate, 217
Sub-subcontractor, 11, 314–315
Superintendent, 328–329, 331
Supervision, xviii
Supervision training, xvii
Supervisor, 330–331
  career paths, 23
  definition, 15
  first-line, xviii, 329, 331
  member of management, 16
  role, xvii
Supporting style, 119
Supportiveness, 134
Survival needs, 123
Taft Hartley Act, 16
Team building, 75–86
  a skill, 75–76
  practical, 85–87
Team:
  formation, 82–83
  maintenance, 83–85
Technical skills, 17
Temperament theory, 134
Tests and certifications, 371
Theory X and Theory Y, 128
Theory X Assumptions, 128–129
Theory Y Assumptions, 128–129
Tightly linked activity, 284
Time:
  as a resource, 199
  managing, 199
  time and materials contracts, 327, 333
  time card, 50, 54–56, 187
    coded, 224, 350–351
  time is of the essence, 237
Tools:
  inventory sheet, 194
  investment in, 194, 200
  managing, 194
  preventing loss and theft, 194
Top 400 Contractors, 13
Total labor dollars in an estimate, 210
Training, 188
  benefits of, 188
  for safety, 194
  for supervisory professional development, 383
  for tool and equipment use, 194
  investment in, 188
  owner, 372
  supervisor’s responsibility, 188
Training meetings, 362
Transition to management, 18
Turnkey, 308
Two Factor Theory, 130
Types of behavior, 134
Types of construction contracts, 5, 314, 316, 332
Types of construction projects, 303
Types of contractors, 304, 332
Unit price competitive bid contracting, 318, 332
Unit price negotiated contracts, 321, 332
INDEX

Unit price proposal form, 320
Unit prices, 318
Updates to network schedules, 274

Valid, validity, 133
Value engineering, 313, 332
Vendor, 11, 314–315

Waste allowance, 207
Western Electric Company, 121
Work assignments, 186
Work Breakdown Structure (WBS), 208
Writings on quality, 365

Zigarmi, Drea, 118
Zigarmi, Patricia, 118