TC 132442-



William T. Goodban Jack J. Hayslett, A.I.A.





720,28

GREGG DIVISION MCGRAW-HILL BOOK COMPANY

New York St. Louis Dallas San Francisco Auckland Bogotá Montreal New Delhi Düsseldorf Johannesburg London Madrid Mexico Panama Paris São Paulo Singapore Sydney Tokyo Toronto

CONTENTS

	Preface				v
	Note to the User				vii
1	Basic Skills and Terminology			•	1
2	Lettering				15
3	Residential Planning				20
4	Planning Light-Commercial Buildings				28
5	Mechanical Steps in Planning				32
				×	
6	Materials and Data Sources				50
7	Building Restrictions and Standards				53
8	Using Alternate-Energy Sources				57
9	Orientation				80
10	Landscaping				87
11	Regional Differences in Design and Co	nstruction			90
12	Presentation Drawings		•		98
13	Relationships among Drawings				103
14	Working Drawings		· •	~	106
15	Floor Plan		,		123
			· · ·		
16	Door, Window, and Room-Finish Sched	lules			131
17	Exterior Elevations				137
18	Interior Elevations				144
19	Plot and Landscaping Plans				150
20	Stair and Fireplace Details			-	162
21	Door and Window Details		н		174
22	Miscellaneous Details				183
23	Foundation Plan				192
24	Building Sections		· · · · · · · · · · · · · · · · · · ·		204
25	Roof and Floor Framing Plans				228
			i		
26	Plumbing Plans				235
27	Heating, Ventilating, and Air-Conditio	ning Plan	•		245
28	Electrical Plan				254
29	Specifications				262
	Appendix				271
	Bibliography				324
	Index			· · ·	326 -

iii

INDEX

Accuracy, standards in drafting, 223 Active systems, 67 Agreement between drawings, 103 Air conditioning: definition, 245 design, 245 equipment and schedules, 250 types of, 245 Air-conditioning plan: drafting, 249 short forms, 245 Air-rock-forced air systems, 75 Air-system delivery, 67 Air-system storage, 63 Alternate sources of energy: definitions, 57 principle sources, 57 Angles, land measure, 150 Approximate perspective, 3 Attic space, 213

Basement: habitable space, 202 planning, 24 Basic areas, 21 definition, 21 in planning, 21 Bathroom, planning, 24 Bearing wall, 201, 212 Bedrooms: planning, 24 standard arrangements, 43 Bidding requirements, 262 Bird's-eye view, perspective, 5 Brick, fired-clay, 212 Building codes, 53 commercial restrictions, 30 Building restrictions, 53 Built-in lighting, 261

Cabinet details, drafting of, 183 Call-outs, form of, 19 Carport, planning, 24 Caves and berms, 73 Central visual ray, location, 5 Client, 20 Collector, 58, 61 Combined drawings, landscape, plot and room, 160 Concrete block, 208, 212 Concrete floors, 192, 208 Construction Specifications Institute: description, 52, 262 index system, 264-269 Contour lines, 150 Craticulation, 11 Crickets, roof, 233

Deed restrictions, 56 Delineation, 11 Delivery systems, 58, 65 Depth: air-conditioning, 245 effects of local conditions, 90 fireplace, 164 in perspective, 5 Dimensioning: floor plan, 128 frame construction, 128 modular construction, 128

Dining room, planning, 23 Door details: definition, 174 drafting, 174 Door schedule: definition, 131 drafting, 134 pictorial, 131 tabular, 131 Downspout: details, 188 location, 217 Drafting styles, 115 Drafter; duties, 117 office relationship, 119 responsibilities, 119 Drains, roof, 217 Drumwall, 73 Dry-transfer letters, 15 Dry well, 188

Earth sections, 157 Easement, 157 Eave line, establishing, 84 Electric outlets, 258 Electrical line voltage, 254 Electrical low voltage, 254 Electrical plan: definition, 254 drafting, 260 Electrical schedules, 260 Electrical service, 254 Electrical systems, design of, 261 Electrical wiring types, 254 Elevations: rendered, 14 rough sketch, 36 Entourage, definition, 14 Entry, planning, 21 Exterior elevations: definition, 137 developed, 137 drafting, 137 by direct projection, 137, 140 preliminary studies, 38 use of texture, 137

Family room, planning, 23 Fastenings, 217 Federal Housing Administration (F.H.A.), 56 Fireplace details: definition, 164 design, 164 drafting, 167 Flashing: details, 189 roof, 51, 217 Flat roof, 213 Floor framing plan: definition, 228 drafting, 233 Floor plan: basic arrangements, 34 copying, 34 definition, 123 dimensioning, 128 drafting, 123 manipulating, 35 multistory, 128

Floor plan (continued): simplified, 123 Floor systems: concrete, 192 plank-and-beam, 211 steel-ioist, 211 wood-joist, 192, 211 Floors, concrete and wood, 192, 202, 211 Footings, 204 Format: arrangement of drawings, 112 presentation drawings, 102 Fossil fuels, advantages of, 57 Foundation: multistory buildings, 113 type, 192 Foundation plan: definition, 192 dimensioning, 202 drafting, 202 Foundation walls, 204 on a slope, 200 Freehand sketching, 1

Gable roof, procedure for drawing, 228 Garage, planning, 24 Gas lines, drafting, 235 General notes, 15 Grade beam, 200 Greenhouse, 72 Grid, sketching, 3 Ground line, location: approximate perspective, 3 mechanical perspective, 5 Gutter: definition, 188 location, 217

Habitable space, basement, 202 Halls, planning, 24 Heater room, planning, 24 Hip roof, 228 Horizon, location: approximate perspective, 3 mechanical perspective, 5 House drain, 235 Human scale, 21 Hypothetical passive systems: air-rock-forced air system, 75 caves and berms, 73 drumwall, 73 greenhouse, 72 simplest, 72 solar cave, 75 solar water heaters, 75 swimming pool heaters, 76 Trombé wall, 73 variations, 73 waste heat retrieval, 75 water pillows, 73 wind machines, 75

Instructions to bidders, 262 Insulation, 51 Interior elevation, 144 Invitation to bid, 262

Keying symbols, 112 Kitchen, planning, 21

Landscape plan: combined drawings, 160 definition, 150 drafting, 160 plant material schedule, 160 trees and shrubs, 160 Landscaping: design of, 89 ground treatment, 87 relation to orientation, 87 values of, 87 Leaching fields, 239 Leader details, 188 Lettering aids, 15 Letters, dry-transfer, 15 Lighting: built-in, 261 Line-voltage system, 254 Linework standards, 110 Lintel, 212 Living room, planning, 21 Lot lines, 150 Low-voltage system, 254

Materials: classification, 50 construction, 50 insulation, 51 sheathing, 50 structural, 50 waterproofing, 51 drafting, 106 equipment and appliances, 51 sketching, 1 Mechanical perspective, 5 Metal stud wall, 212 Methods of sketching, 1 Miscellaneous details: definition, 183 types, 183 Mud room, planning, 24 Multilevel planning, 24

Notes, 19

Orientation: commercial buildings, 30 definition, 80 local conditions for, 80

Passive systems, 65 Performance bond, 264 Perspective procedure: approximate, 3 mechanical, 5 Picture plane, 5 Pier, 200 Plank and beam floors, 211 Planning: basement, 24 basic areas, 21 bathroom, 24 bedrooms, 24 carport, 24 dining room, 23 entry, 21 family room, 23 garage, 24 halls, 24 heater room, 24 kitchen, 21 living room, 21 mud room, 24

Planning (continued): stairs, 158 storage, 24 utility room, 23 Planning procedure: commercial, 30-31, 35-38 residential, 20-24, 32 split-level, 35 Plant material schedule, 160 Plate lines, varying, 233 Plot plan: contour lines, 150 definition, 150 drafting, 160 lot lines, 150 setbacks and easements, 157 Plumbing plan: definition, 235 design, 235 drafting, 240 Plumbing schedules, 235 Post-and-beam wall, 211 Preliminary drawings: purpose, 32 uses, 38 Presentation drawings: composition, 98 definition, 98 format, 102 media, 102 short-cuts, 102 Projection of exterior elevations, 137 Proposal form, bidding, 263

Reference between drawings, 112 Reference symbols, 112 Rendered elevations, 14 Reproduction: cleanliness, importance of, 111 common methods, 111 **Restrictions:** building, 53 zoning, 53 Reversed floor plan, 35 Reversed tracing, 115 Roof: cricket, 233 flat, 213 Roof drains, 217 Roof intersections, 228 Roof structure: attic space, 213 preliminary studies, 37 shapes, 213 simple span, 213 trussed system, 216 Roofing materials, 216 Room-finish schedule: definition, 131 drafting, 134 types, 134

Schedules: door, 131 electrical 260 equipment, air-conditioning, 250 plant material, 160 plumbing, 235 room-finish, 131 window, 131 Sections: assembly of, 217 earth, 157 rough sketch, 36 Septic tanks, 240 Service entrance, electrical, 254 Setbacks, 157 Sewer, 240 Shadow line, 80 Sheathing, 50 Shortcuts, 117 Site in relation to sun, weather, 80 Site conditions, commercial, 30 Sketching: and materials, 1 method of, 1, 32 Soil line: definition, 235 Solar cave, 75 Solar cooling; 69 Solar energy: disadvantages of, 58 history of 58 industrial uses of, 76 Solar heat panels, 61 Solar ponds, 77 Solar water heaters, 75 Specific notes, 19 Specifications: bidding requirements, 262 contract forms, 268 descriptive method, 264 general and special conditions, 263 performance method, 264 proprietary method, 264 technical information, 264 Speculative building, 20 Splash block, 188 Stair details: definition, 162 drafting, 162 sections, 162 Standards of accuracy in drafting, 223 Station point, perspective, location, Steel-joist floors, 211 Stone, natural, 212 Storage system, 58, 63 Storage space, planning, 24 Structural members, 50 Sun, effect on orientation, 80 Supplementary heat, 68 Sweet's Files, 51 Swimming pool heaters, 76 Switch leg, 260 Symbols, reference, 112 System components: definition, 58 description, 61-69

Technical tables, recording of information from, 51 Terra cotta, 212 Thermal gradient, 60 Thermosyphon, 60 Traffic: commercial, 32 residential, 21 Treillage, 80 Trombé walls, 73 Title strip, 111 . Tracing: linework standards for, 110 reversed, 115 Trap, plumbing, 240 Trussed roof, 216

Uniform Building Code, 53 Utility room, planning, 23 Vanishing lines, location: approximate perspective, 3 mechanical perspective, 5 Vanishing points, location: approximate perspective, 3 mechanical perspective, 5 Vent, plumbing, 235 Vertical measuring line, 4 Visibility of lines, 110 Visual rays, 5

Wall structures: bearing, 201 masonry, 212 metal-stud, 212 nonbearing, 212 opening, lintels, 212 post-and-beam, 211

Wall structures (continued): preliminary studies, 36 Waste heat retrieval, 75 Waste line, 235 Water pillows, 73 Waterproofing, 51, 210 Water-system storage, 64 Wind machines, 75 Window details: definition, 174 drafting, 174 preliminary studies, 37 Window schedule: definition, 131 drafting, 134 pictorial, 131 tabular, 131 Wood floors, 192

Wood-joist floors, 200, 211 Wood-stud wall, 211 Working drawings: agreement among, 103 changes in 103 cleanliness, 111 definition, 106 format, 111 freehand, 117 linework standards, 110 procedure in drawing, 112 references between, 112 standard details, 11-7

Zoning ordinances, 53 Zoning restrictions, 30

techniques, 107