CONTENTS

Introduction xi

SECTION | THE PROJECT PROCESS 1

CHAPTER 1 Evolution of the Construction Project 3

The Construction Phases 3

The Construction Project Team Members 13 The Construction Team Relationships 16

Summary 18

Chapter 1 Learning Outcomes 19

Chapter 1 Questions 19

CHAPTER 2 Construction Project Contract Documents 21

Agreements between the Primary Team Members 21

Project Definition Documents 22

Summary 29

Chapter 2 Learning Outcomes 29

Chapter 2 Questions 30

CHAPTER 3 Working Drawings 31

The Drawing Structure 31 The Drawing Elements 40

Drawing Scales and Dimensions 52

Summary 57

Chapter 3 Learning Outcomes 57

Chapter 3 Questions 58

CHAPTER 4 Specifications 59

Specification Users 59

The Specifications Structure 60
Information in the Specifications 73

Summary 75

Chapter 4 Learning Outcomes 76

Chapter 4 Questions 76

CHAPTER 5 Finding Construction Information in the Working Drawings and Specifications 77

Document Structure Review 77

First Look at the Working Drawings and

Specifications 80

Finding Construction Information in the Working

Drawings and Specifications 82

Summary 85

Chapter 5 Learning Outcomes 85

Chapter 5 Questions 85

SECTION II BUILDING THE PROJECT 87

CHAPTER 6 Architectural Category of the Drawings 89

Division 1, "General Requirements" 89

Division 4, "Masonry" 91

Division 5, "Metals" 93

Division 6, "Woods, Plastics, and Composites" 95

Division 7, "Thermal and Moisture Protection" 97

Division 8, "Opening" 104

Division 9, "Finishes" 112

Division 10, "Specialties" 125

Divisions 11 and 12, "Equipment" and "Furnishings" 125

Division 14, "Conveying Equipment" 125

Summary 129

CHAPTER 7 Structural Category of the Drawings 131

Division 3, "Concrete" 133

Division 4, "Masonry" 138

Division 5, "Metals" 141

Division 6, "Woods, Plastics, and Composites" 150

Summary 153

CHAPTER 8 Mechanical Category of the Drawings 157

HVAC Systems 158

Summary 170

Main Power Distribution 172

Secondary Level of Power Distribution 176 Lighting Electrical Distribution Systems 181

Summary 183

CHAPTER 10 Plumbing Category of the Drawings 185

Supply Piping Systems 185

Plumbing Collection Systems 195

Summary 199

CHAPTER 11 Civil/Sitework Category of the Drawings 201

Civil Drawings 201

Architects Site Plans 212

MEP Drawings 212

Summary 215

Glossary 217

Index 225