



NAWIC Education Foundation

Construction Industry

Technician



PARTICIPANT'S MANUAL

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FOREWORD

Construction is the largest industry in the United States, employing more people than any other single industry. Over the past three decades, the construction industry has experienced many technological advances. The introduction of new technologies has created a need for construction education to keep up with these advances.

As part of its continuing efforts to provide the most up-to-date educational opportunities, the NAWIC Education Foundation (NEF) has developed the Construction Industry Technician (CIT) program. This program provides you with an overview of the construction industry. Lessons to be covered include: types of construction, forms of business ownership, contractual arrangements, contract documents, and the construction process.

Upon successful completion of the Construction Industry Technician course, you will receive a Construction Industry Technician certificate.

Throughout the program of study, it is recommended that you use the **NEF Construction Dictionary** to assist with your understanding of the different terms used.

DISCLAIMER

The materials provided in this course are intended to represent an amalgamation of general legal principals and standards for the topics addressed. The materials are provided for general educational and informational purposes only and are not intended as legal advice. The materials are not all-inclusive or comprehensive. It is also important to understand that the laws of each state differ and the general principals stated here may not accurately reflect the law in any particular jurisdiction. The providers and authors disclaim any responsibility or liability for the reader's reliance on these materials as the exclusive body of authority on the issues covered.

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LESSON ONE

TYPES OF CONSTRUCTION

OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Identify and describe the different types of construction;
2. List examples of projects for each type of construction.

INTRODUCTION

The construction industry is composed of various segments. The major ones are:

- Residential
- Commercial
- Institutional
- Industrial
- Heavy Civil
- Environmental

Contractors are not limited to building only one type of project. Contractors may specialize in a certain type of construction or may build a variety of types.

RESIDENTIAL

Residential construction is usually defined as the construction of one- or two-family homes. It may also include the construction of multi-family buildings, such as apartments or condominiums. A residential construction company may be as small as a one-person business or as big as a large corporation.

A one-person firm is considered a small residential contractor. This individual is responsible for managing the construction project along with managing the firm. This type of contractor has a low amount of overhead and the business volume is usually under two million dollars a year. In contrast, large residential construction companies have many employees and a large overhead, and they perform millions of dollars' worth of construction annually.

Due to the large number of contractors working in this sector the competition tends to be stiff, the profit margins are often low, bankruptcies are fairly common.

LESSON TWO

CONSTRUCTION TRADE ASSOCIATIONS, PROFESSIONAL SOCIETIES, AND INSTITUTES

OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Describe the differences between a construction trade association, a professional society, and an institute;
2. Identify the different construction trade associations, professional societies, and institutes that influence construction companies;
3. Explain how to locate and become involved in construction trade associations, professional societies, and institutes that are related to a variety of construction companies.

INTRODUCTION

The rapid growth of the construction industry has resulted in the formation of numerous trade associations, professional societies, and institutes. These construction-related organizations provide individuals the opportunity to keep abreast of changes in the industry. They also perform research and educate members about new innovations and trends. These organizations have local or regional chapters whose members meet on a regular basis. National meetings are held annually or semi-annually to conduct national business, educate members, and display cutting-edge technologies and products. Refer to Appendix A for reference books that list current construction organizations, their addresses, and the publications they produce.

CONSTRUCTION TRADE ASSOCIATIONS

Construction trade associations represent particular segments of the construction industry. Some represent general contractors, while others represent specialty contractors like roofers and painters. An industry trade association participates in public relations activities such as advertising, education, political donations, lobbying, and publishing. Construction trade associations' main focus is promoting collaboration between companies and developing a level of standardization within the trades. Associations may offer other services, such as producing conferences,

LESSON THREE

FORMS OF BUSINESS OWNERSHIP

OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Identify the different forms of business ownership;
2. Explain the advantages and disadvantages of each type of business ownership;
3. Justify choosing one form of business ownership over another.

INTRODUCTION

The form of business ownership may be one of several legal structures. Each legal structure is influenced by factors such as business taxation, degree of owner liability, scope of operations, and financial structure. These and other considerations affect the choice of business ownership structure. Generally, there are four forms of ownership:

- Sole proprietorship
- Partnership
- Corporation
- Limited liability company

SOLE PROPRIETORSHIPS

Sole proprietorships represent the simplest form of business ownership. A sole proprietorship is owned and operated by one person who is the sole decision maker for the business. In a sole proprietorship, the owner has total control over all business operations. Accordingly, events that affect the owner personally or professionally can have a serious impact on the business.

Unlike other types of business entities, the owner of a sole proprietorship does not have a liability shield from the debts incurred by the business. The owner retains all profits generated by business and is liable for all of its debts. As a result, a sole proprietor's personal assets, even those unrelated to the business, may be reached by creditors to satisfy business debts.

LESSON FOUR

PROJECT DELIVERY METHODS, RELATED CONTRACTUAL ARRANGEMENTS AND PRICING MECHANISMS

OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Identify the different types of project delivery methods.
2. Identify the key individuals involved in a construction contract.
3. Explain the differences between competitive and negotiated bids.
4. Produce a flow diagram illustrating the contractual arrangement associated with each project delivery method.
5. List advantages and disadvantages of each project delivery method and associated contractual arrangement.
6. Identify the different types of contract pricing mechanisms.

INTRODUCTION

In the construction industry, the word *contract* is used to mean many different things. A construction contract is a formal agreement between the parties involved in the development, design, and construction of a project. It usually consists of several legally binding forms and documents. One of these forms is typically deemed the construction contract, which is the legal document binding the signatories to perform to the stated criteria.

Construction contracts state the services each party of the contract will perform and explain how each party performing a service will be compensated. Contracts are typically written documents; however, verbal contracts are sometimes used. Verbal contracts are highly discouraged because disputes regarding the precise terms of the contract often arise. When such disputes occur, they must be resolved by a court or arbitrator. Often this leads to results that neither party anticipated or wants.

LESSON FIVE

CONSTRUCTION CONTRACT DOCUMENTS

OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Identify and explain the components of construction contract documents;
2. Differentiate between the different types of working drawings;
3. Explain contract modifications.

INTRODUCTION

The contract documents, when taken as a whole, form the legally binding agreement for constructing a project.

Construction contract documents may include:

- The agreement between the owner and contractor or construction manager;
- The general and supplementary conditions applicable to the contract;
- The working drawings for the project;
- The technical specifications for the project;
- Any addenda issued prior to the execution of the contract;
- Any modifications issued after the contract has been executed.

BID DOCUMENTS

In almost all government projects, the public entity must select its contractor for the project by utilizing competitive bidding procedures in which sealed pricing is submitted to the public entity by interested contractors. These procedures may be used in private projects as well.

Generally, the process begins with the issuance of an *invitation to bid*, which requests that interested contractors submit their bids on the project. The invitation to bid is extended by the owner or public entity to any contractor who wishes to respond, or in the alternative, to a list of previously qualified bidders.

LESSON SIX

THE CONSTRUCTION PROCESS

OBJECTIVES

Upon completion of this lesson, you should be able to:

1. Identify the stages in the construction process;
2. Describe the activities involved in each stage of the construction process;
3. Explain zoning laws and building codes;
4. Understand the meaning of constructability reviews and value engineering;
5. List the documents required during the construction and close-out stages.

PART 1

INTRODUCTION

In the construction process, projects may have similar drawings and specifications yet each project is unique and different. Still, the general manner for obtaining the final product follows a very structured process. From the initial conception through completion, typical construction projects progress through six stages. They are:

- Development
- Design
- Bidding/negotiating
- Pre-construction
- Construction
- Close-out

A construction project brings together many different individuals. Architects, engineers, financial officers, lawyers, insurance agents, realtors, government officials, and constructors are all involved at some point. This lesson describes the stages of the construction process.

LESSON SEVEN

CONSTRUCTION INSURANCE AND BONDING

OBJECTIVES

Upon completion of this lesson, you should be able to:

1. Identify the types of risks involved in construction;
2. Explain the concept of risk management;
3. Understand the principal types of insurance coverage;
4. Identify the types of business insurance constructors obtain;
5. Understand the concept of suretyship;
6. List and describe the types of bonds used in construction.

INTRODUCTION

Risks are part of life. For example, driving a car is taking the personal risk that an accident might occur. Investing in the stock market is a financial risk. Risks involve taking a chance that could result in a gain or loss of time, money, life, or other resources. Risks also vary in the degree of severity. They may be great or small. In the construction industry, risks may be classified as either personal injury risks or property damage risks.

Personal Injury Risks

The nature of construction work carries with it high potential for injury or death. Construction accidents are not limited to job site workers, but may involve the public as well. Claims of libel and slander are also included in personal injury risk. Contractors can implement safety programs and written policies and procedures to help reduce or limit the severity of risks, but risks cannot be eliminated altogether. Contractors can work with their legal counsel and their insurance carrier to develop programs and policies to minimize this risk.