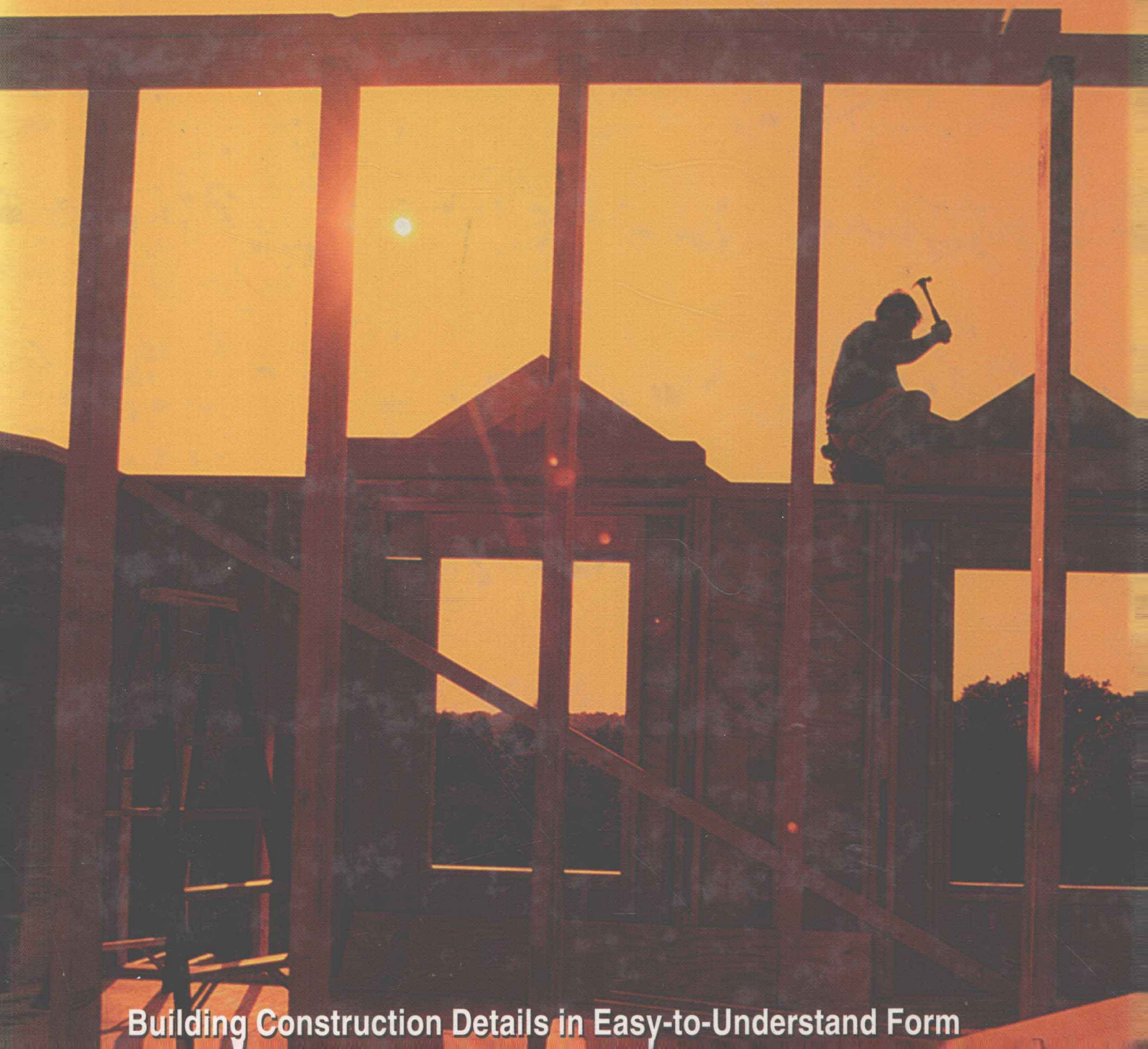
Modern Carpentry

Willis H. Wagner Howard Bud Smith



Building Construction Details in Easy-to-Understand Form

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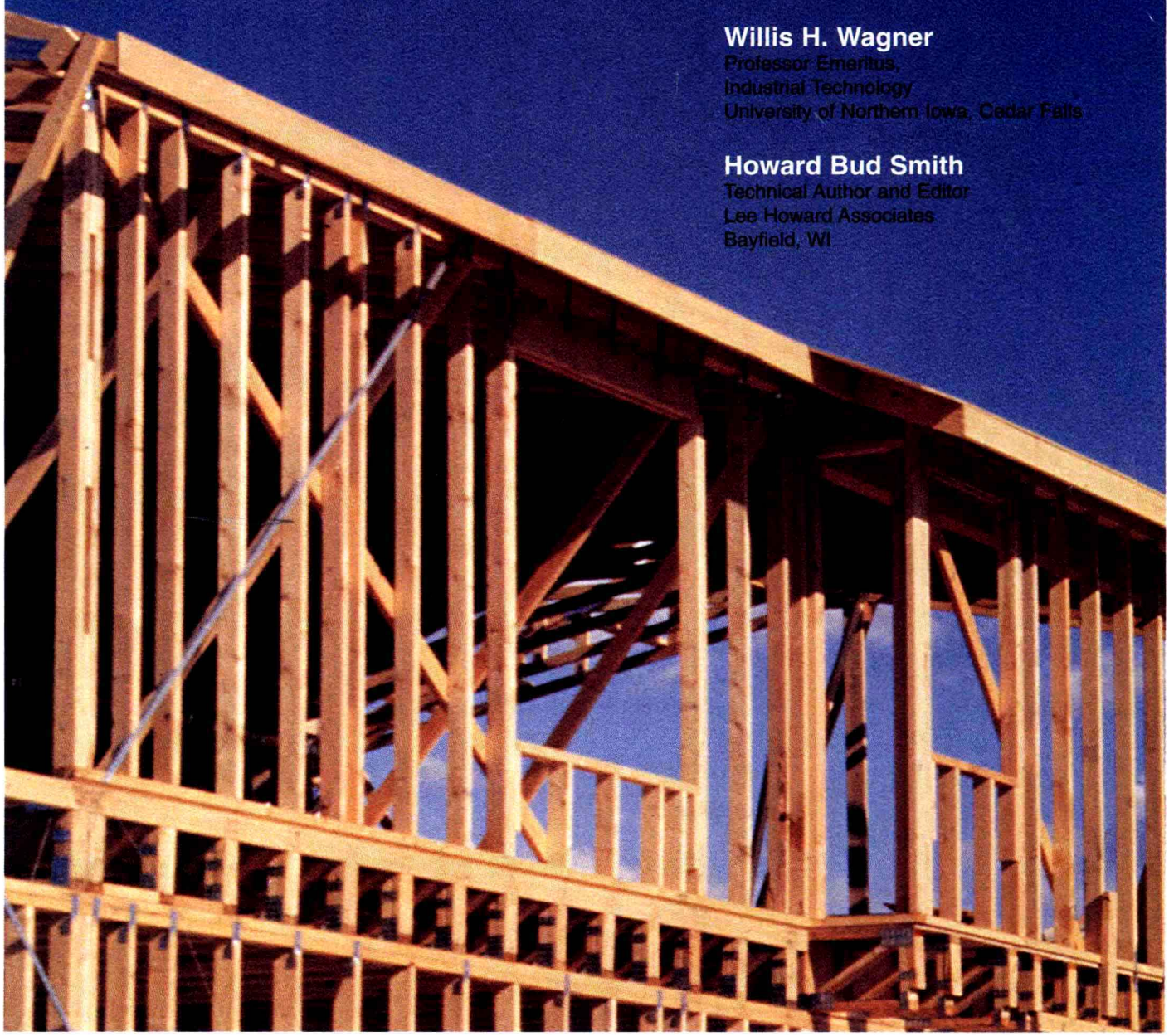

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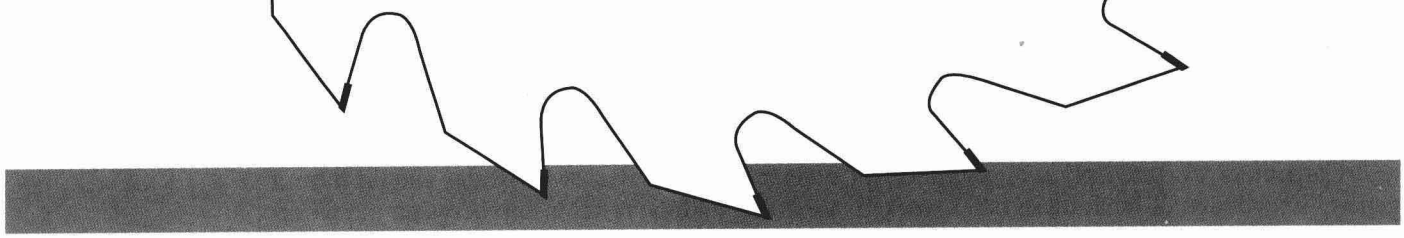


Introduction

Modern Carpentry is a colorful, easy-to-understand source of authoritative and up-to-date information on building materials and construction methods. It provides detailed coverage of all aspects of light frame construction. Included are site clearing, site layout, foundations, framing, insulating, sheathing, roofing, windows and doors, exterior finish, interior finish, and mechanical systems. Units are arranged in a logical sequence—similar to the order in which the various phases of construction are performed. Special emphasis is placed on safety and the use of modern tools, materials, and prefabricated components.

Information about building materials includes size and grade descriptions and also basic technical information that covers physical properties and other important characteristics. Scientific and technical discoveries have led to the development of many new materials. The proper use and application of these materials depend on a craftperson who has considerable knowledge of the material and how it will function in a completed structure.

Modern Carpentry includes basic information covering stair construction, chimney and fireplaces, systems-built structures, solar construction, remodeling, cabinetmaking, painting, and decorating.

Modern Carpentry also serves as an introduction to other building trades. Information about electrical wiring, plumbing systems, and heating, ventilation, and air conditioning (HVAC) has been included to provide more exposure to the entire construction process.

Modern Carpentry contains more than 1600 carefully selected photos and drawings. Illustrations are accurately coordinated with written instructions and descriptions that are easy to read.

Modern Carpentry is designed to provide basic instruction for students in high school, vocational-technical schools, college classes, and apprentice training programs. It can also serve as a valuable reference for students in architectural drafting classes and for journeymen carpenters and construction supervisors. **Modern Carpentry** will enable do-it-yourselfers to handle many construction jobs that they would otherwise be reluctant to undertake.

Willis H. Wagner
Howard Bud Smith

New Additions to this Edition

Carpenters work closely with members of other building trades. A carpenter should have a general knowledge of what these other workers are doing and the relationship between the workers' tasks. Four new units have been added that discuss other trades:

- Unit 20—Painting, Finishing, and Decorating
- Unit 26—Electrical Wiring
- Unit 27—Plumbing Systems
- Unit 28—Heating, Ventilation, and Air Conditioning

Safety on the worksite is of paramount importance. Carpentry trainees must be taught to recognize and correct unsafe conditions and practices. Unit 2, General Safety Rules, has been added in this edition to provide this training.

An understanding of basic mathematics is a tool a carpenter will find as useful as any saw, drill, or hammer. Math is used to ensure that roofs slope properly, stairs rise evenly, and studs fit correctly. Appendix A, Carpentry Math Review, has been added to provide a "refresher course" of basic mathematics.

Special Features

Throughout the text, the following special features are used.

Safety

Safety-related items have been printed with red text to make them more noticeable. Read these items carefully—they are the most important lessons you will learn from this book.

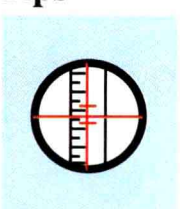
Step-By-Step Procedures

Tasks that require a series of steps to complete are set off from the text with a drawing of a sawhorse and the title of the task, such as:

Installing a Window

An ordered list of the procedures follows the title. When using the book for reference, these step-by-step procedures will be easy to find.

Tips



Brief suggestions and safety items appear in this form. A small boxed sketch, related to the topic, appears to the left of the text. Be sure to pay special attention to these tips.

Acknowledgments

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ABTco, Incorporated, Troy, MI
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American Building Components, Omaha, NE
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Columns, Incorporated, Pearland, TX
Conestoga Wood Specialties, Incorporated, East Earl, PA
Construction Training School, St. Louis, MO
Council of Forrest Industries, North Vancouver, B.C., Canada
Crown Aluminum Industries, Corporation, Pittsburgh, PA
Dal-Tile Corporation, Dallas, TX
Daniel Woodhead Company, Northbrook, IL
David White Instruments, Division of Realist, Inc., Menomonee Falls, WI
Deft, Incorporated, Irvine, CA
Del Webb's Sun City, Tucson, AZ
Delta International Machine, Corporation, Pittsburgh, PA
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Des Moines, Iowa Public Schools, Des Moines, IA
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National Gypsum Company, Dallas, TX
National Oak Flooring Manufacturers Association, Memphis, TN
National Solar Heating and Cooling Center, Rockville, MD
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Spectra-Physics Laserplane, Incorporated, Dayton, OH
Speed Cut, Incorporated, Corvallis, OR
St. Paul Technical College, St. Paul, MN
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Tibbias Flooring Company, Oneida, TN
Timber Engineering Company, Washington, DC
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Tony's Construction, Incorporated, Tucson, AZ
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Trudeau Construction Company, Bayfield, WI
Truss Plate Institute, Madison, WI
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TrusWal Systems, Incorporated, Troy, MI
U.S. Department of Agriculture, Washington, D.C.
Ungrodt Hardware Company, Washburn, WI
United Brotherhood of Carpenters & Joiners of America, Washington, DC
United States Gypsum Company, Chicago, IL
United States Steel Corporation, Pittsburgh, PA
United Technologies Carrier, Indianapolis, IN
Universal Form Clamp Company, Chicago, IL
USG Corporation, Chicago, IL
Vermiculite Institute, Minneapolis, MN
Vermont American Tool Company, Lincolnton, NC
VICA (Vocational Industrial Clubs of America), Leesburg, VA
Village of Flossmoor, Flossmoor, IL
Visador Company, Jacksonville, FL
Wageman Construction, Cedar Falls, IA
Wallace Murray Corporation, Nampa, ID
Waterloo-Cedar Falls Iowa Daily Courier, Waterloo, IA
Wausau Homes, Incorporated, Wausau, WI
Wellborn Cabinet, Incorporated, Ashland, AL
Weller, Division of Cooper Tools
Western Wood Products Association, Portland, OR
Weyerhaeuser Company, Tacoma, WA
Whirlpool Corporation, Benton Harbor, MI
William Powell Company
Wiss
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Wood Conversion Company, St. Paul, MN
Yankee Barn Homes, Incorporated, Granthan, NH
Zimmerman Builders, Waterloo, IA

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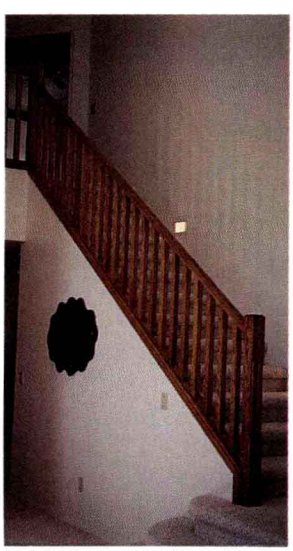

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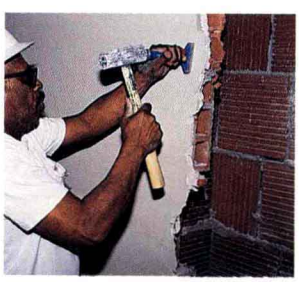

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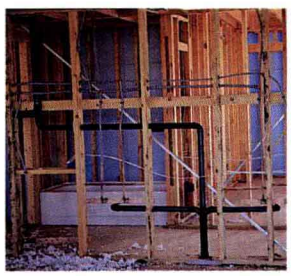

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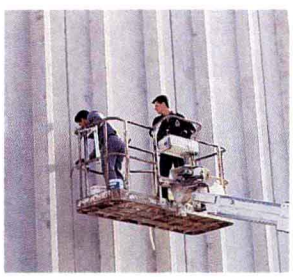
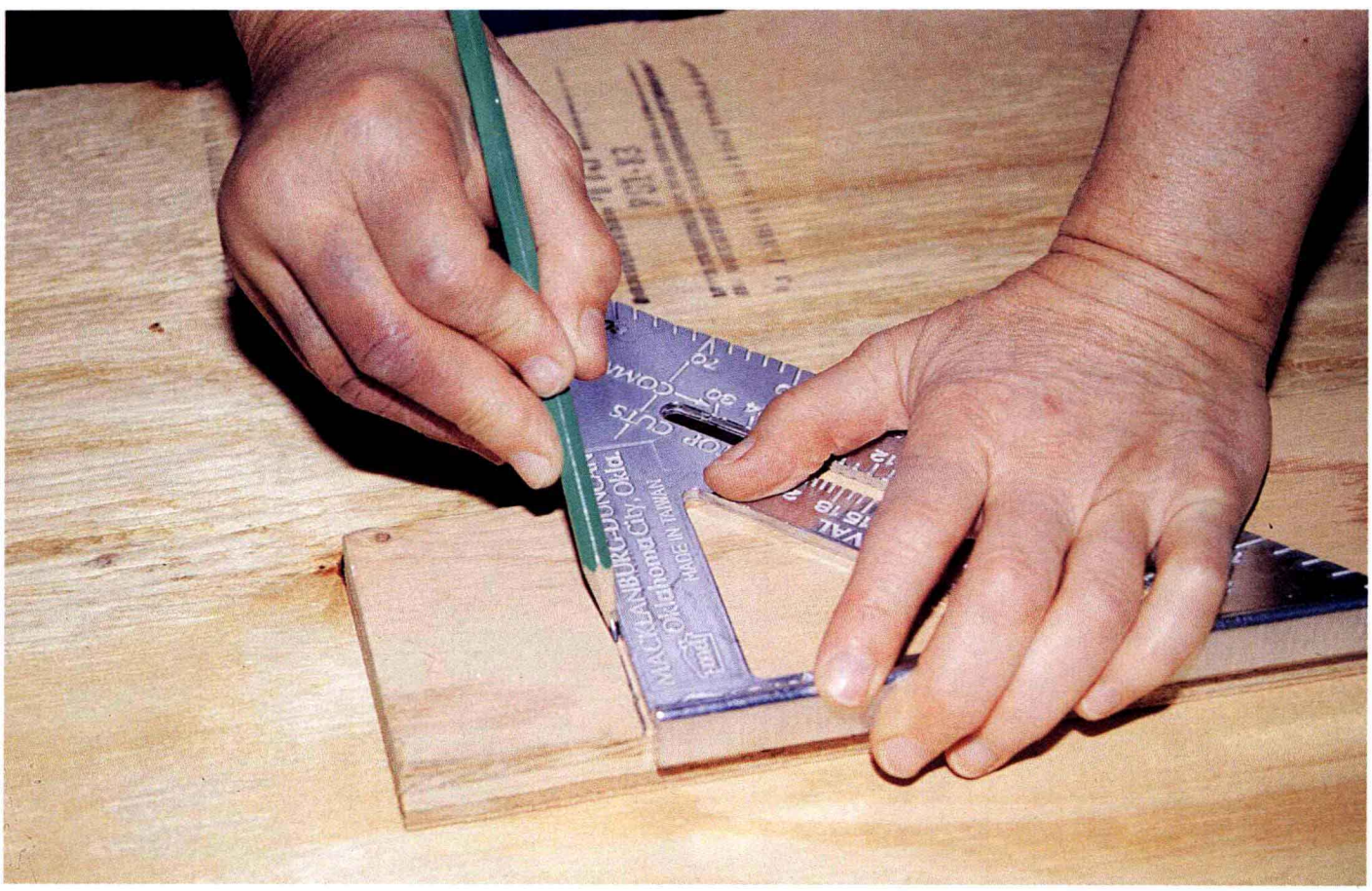


Preparing to Build

Construction drawings must be used as a guide throughout the construction process.



Before installing wood members, accurate measurements must be made to ensure proper fit.