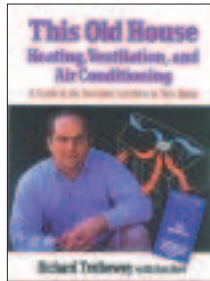




This Old HVAC

by John Siegenthaler



This Old House: Heating, Ventilation, and Air Conditioning by Richard Trethewey with Don Best (Little, Brown and Company, 1994; 800/759-0190). Softcover, 7 1/2x10, 255 pages. \$24.45.

The television show *This Old House* is undoubtedly one of the most popular educational TV shows of recent years. Viewers watch many different aspects of home construction and renovation, including the often overlooked heating, ventilation, and air conditioning (hvac) systems. The show is well known among its viewers for presenting the latest innovations in residential building technology, tempered with discussion of practicality and cost.

Richard Trethewey is the mechanical systems expert on the show. He is frequently consulted for practical advice on how to properly equip buildings for year-round comfort. His book, with co-author Don Best, is in my opinion one of the best books on the market today dealing with the residential hvac systems. Trethewey's years of working in the plumbing and heating trade have added immensely to this book.

The book is written in a light, non-technical style for average readers who need to make informed decisions about heating, cooling, and ventilating their homes. The qualitative style of the book makes it very readable and understandable compared with many textbooks on hvac that delve into design calculations but don't necessarily address practical concerns.

The book begins with a discussion of the prime objective of any hvac system: producing comfort. The authors explain how temperature, humidity, air movement, and radiant temperature together determine the perceived comfort in a home. They then proceed to explain how the house should function as a sin-

gle system rather than an assembly of individual — and sometimes conflicting — components. The book emphasizes just how important selection of hvac equipment is, especially when so many other amenities compete for precious construction dollars. It strongly recommends directing efforts toward achieving comfort and conserving energy — two concepts that, as the authors point out, can be synergistic rather than mutually exclusive. Emphasis is also placed on selecting and installing *quality* systems that, although more expensive, easily return their higher costs in fuel savings and reduced maintenance. The authors are not hesitant to point out that “you get what you pay for” in hvac systems.

Separate chapters of the book deal with the various hvac systems available for residential buildings. These include the use of passive solar heating, as well as the more typical forced-air, hydronic, and direct heating systems. Still other chapters deal with domestic water heating, ventilation, and cooling. The reader is taken on a “guided tour” of each of these systems. Descriptions of how they are supposed to operate are combined with honest warnings of potential hazards and common installation or maintenance errors. Both state-of-the-art and older equipment that is still in service are discussed.

The book includes tables for recommended R-values of insulation, weather-stripping, caulking, and other energy issues. Since residential hvac systems so often suffer from neglect, tables are also included for both mandatory and optional maintenance procedures for several types of systems. The authors also discuss what type of work should be reasonably attempted by a do-it-yourselfer and what should be left to professionals.

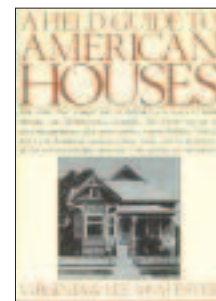
The book uses a colored “highlighting” effect to emphasize key points. This is helpful for a reader who may be skimming the chapters, or rereading for the main points.

Trethewey's book is illustrated with

high-quality color photos and hand-rendered diagrams of simplified hvac systems. Although the drawings correctly show how a device or system operates, more detailed drawings would have added to reader understanding. The book also shows a comparison of fuel costs and their “unit costs” in dollars per million Btus. However, I must assume these costs are for a given location and date, since they differ considerably from current local costs in my area. Perhaps a simple formula for calculating the unit cost of various fuels, including the effect of heating system efficiency, would have been more useful.

Any builder or remodeler who has only a passing knowledge of hvac systems would be well served by reading this book. On several occasions I found the authors describing situations almost exactly the same as I have encountered in dealing with residential hvac systems and their owners. This leads me to think that I should give this book to my clients as “assigned reading” before we sit down to begin design development.

John Siegenthaler, P.E., operates Appropriate Designs, a building systems engineering firm in Holland Patent, N.Y., and is the author of Modern Hydronic Heating for Residential and Light Commercial Buildings (Delmar Publishers).



A Field Guide to American Houses by Virginia & Lee McAlester (Alfred A. Knopf, 1984; 800/726-0600). Softcover, 6 5/8x9 1/4, 544 pages. \$21.95.

House Style Primer

by Carl Hagstrom

As builders and designers, we've all seen examples of both good design and poor design. Unfortunately, poor design tends to be more noticeable. Have you ever seen a boxy addition with a shed roof slapped on the side of a vintage Victorian? They always make me think of those postcards picturing a “jackalope” (a crossbred jackrabbit with antlers).

To avoid these architectural jack-

alopes, it's important to understand what breed of house you're dealing with. *A Field Guide to American Houses* is one of the best guides I've found to help identify the different styles of American houses. It covers the entire range of housing, from the early settlements to present-day modern homes. There is even a brief mention of Native American shelters.

The "field guide" format makes this book easy to use. The chapters are arranged chronologically, and include houses from the Folk, Colonial Romantic Victorian, and Eclectic periods, as well as houses built after 1940.

The opening page of each chapter features a large drawing showing the three or four most important identifying features of a particular style. Included on this page are smaller drawings of the principal subtypes of this style house. These subtype drawings are cross-referenced with photographic examples later in the chapter. The simple pen-and-ink line drawings avoid details and focus on the overall form of a particular style.

Every chapter also includes drawings that show typical smaller details (windows, doors, roof-wall junctions) that are difficult to see in the photographs.

The four to five pages of text that describe each particular style are concise, and touch on the origin and history of the style.

As a designer, I find the photographs and subtype drawings particularly helpful during the conceptual design phase of a project. When designing an addition or porch for a period house, the subtype drawings provide examples of historical variants that can help reduce the trial and error often encountered when establishing an acceptable form and scale. The photographs offer a wide range of examples that fit a particular style, and often provide insight to solve a tricky design problem. The photographs also include some fine examples of period architecture, along with mundane houses from the same style.

There is a pictorial key that matches different types of common architectural features, (such as windows, doors, and porch posts) with the appropriate architectural style. This key can be helpful when identifying houses whose details have been partially obscured by previous "remuddlings."

There is also a chapter on structure

that covers a wide range of methods and materials used throughout the different periods. Most of this will be old hat for experienced builders, but it does contain information that will help develop your architectural vocabulary. You may be aware of many different dormer styles, for example, but the guide identifies 13 types and gives you the verbal tools needed to communicate these various types to your client. But as this book expands your vocabulary, it will take a toll on your eyesight. I wish the book had been printed in a larger format that would have allowed larger typeface and illustrations.

The strength of this book lies in its brevity. Its purpose is to identify a style, and the authors refrain from critiques and embellishment. All in all, it's a great book for someone interested in identifying the style of an American home. ■

Carl Hagstrom designs and builds in Montrose, Pa., and is a contributing editor to the Journal of Light Construction.