

# Field Guide

## Residential New Construction



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OWNER WITH  
FOR APPROVAL

- Energy Efficient Construction
- ENERGY STAR® Homes
- New York Energy Code

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# Field Guide

## Residential New Construction



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- **Energy Efficient Construction**
- **ENERGY STAR® Homes**
- **New York Energy Code**

# Acknowledgments

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# Introduction

What is “energy efficient” construction? Many people picture a space-age house, with a wall of south-facing glass. Others think about solar power or heat. Still others think of superinsulation and high-tech windows. Energy efficient construction can include these features, but it does not need to.

Any home design can be energy efficient, and with careful planning additional construction costs can be minimal. Builders who use the “house as a system” concept to plan and build their homes will have happier customers, more referrals and fewer callbacks, which in the long run will more than pay for any added costs. This guide serves as a starting point to help designers and builders understand the system approach, with an emphasis on meeting the requirements of the energy code and the ENERGY STAR Labeled New Homes program.

## About this guide

The purpose of this guide is to provide an overview of energy efficient residential new construction in New York state. The focus of the text and drawings in the guide are on three main subjects:

- **Compliance with the New York residential energy code**—New York has adopted an energy code that is based on the 2000 International Energy Conservation Code (IECC), including the 2001 amendments. Although there are some state-specific differences, most of the code references in the guide can be used generally for any nearby state with an IECC- or MEC-based energy code.
- **ENERGY STAR Labeled New Homes**—The Environmental Protection Agency’s ENERGY STAR Labeled New Homes program has set a benchmark for energy efficient new construction nationwide. Through the ENERGY STAR program, any new home can be recognized as having the EPA’s “Seal of Approval” for energy performance. This guide serves as a summary of the key components of a successful ENERGY STAR project.
- **A systems approach to building**—Understanding the way different components and materials interact in a building can reduce moisture problems, indoor air quality complaints, combustion safety problems, ice dams, and other expensive callbacks. This guide provides an overview of the key components of “house as a system” building, with a focus on energy performance.

### Format

This guide is divided into sections that follow a typical construction sequence. Each section has convenient tabs marked on the edge of the page, for Designer, Builder/General Contractor, Foundation, Framing, etc. There are also special sections on the energy code, on ENERGY STAR, and on the “house as a system” approach to building.

The purpose of this guide is to provide an overview of the important issues, and also to serve as a handy field reference that designers, builders and trades people can use at every step of the construction process. Each chapter has the following features in common:

- **Energy code**—The opening section of the chapter outlines what parts of the energy code you must pay attention to during that stage in the construction process. References are made to the code document itself so you can find the actual code language that relates to your situation.

Energy code requirements are highlighted in blue

Other (non-energy) code requirements that may be related to an energy concern are outlined by a blue box. Most of these requirements are drawn from the 2000 International Residential Code (IRC) for One- and Two-Family Dwellings (see Appendix B for ordering information).

- **ENERGY STAR**—Further suggestions are made about what steps you may take to help ensure ENERGY STAR compliance at every step. Included are some suggestions about how costs in one area may be traded off against reduced costs in another area.
- **Going further**—This guide is intended to be a concise reference; there are numerous situations which are beyond its scope. There are many references listed in Appendix B for further reading. One of these resources stands out as exemplary, thorough, and easy to understand—the Energy Efficient Building Association (EEBA) *Cold Climate Builder's Guide*. The *EEBA Builder's Guide*, referenced as such throughout this book, is an ideal resource for further reading and more detail drawings. See Appendix B for ordering information.
- **Detail drawings**—Most of the drawings in this guide are found at the end of each chapter. The drawings have shaded notes that refer to code requirements. **In all drawings, the dotted line (in color) indicates the location of the primary air barrier.**