

The *Water Management Guide* provides builders with practical advice for keeping buildings dry by keeping out rain water and ground water.

The DOE-sponsored *Water Management Guide* has brought critical attention to one of the most critical durability issues associated with high-performance homes. The *Water Management Guide* has sold 15,000 copies since its first printing.



BUILDING AMERICA TOP INNOVATIONS

Recognizing Top Innovations in Building Science – The U.S. Department of Energy's Building America program was started in 1995 to provide research and development to the residential new construction and remodeling industry. As a national center for world-class research, Building America funds integrated research in market-ready technology solutions through collaborative partnerships between building and remodeling industry leaders, nationally recognized building scientists, and the national laboratories. Building America Top Innovation Awards recognize those projects that have had a profound or transforming impact on the new and retrofit housing industries on the road to high-performance homes.

BUILDING AMERICA TOP INNOVATIONS HALL OF FAME PROFILE

INNOVATIONS CATEGORY:

- 3. Effective Guidance and Tools Solutions
- 3.1 High-Performance Home Solutions

EEBA Water Management Guide

As energy codes and voluntary programs such as ENERGY STAR for Homes and the DOE Challenge Home continue transforming the housing industry to high performance, better insulated and air-sealed assemblies now have substantially reduced tolerance for drying. As a result, managing bulk water flow has become critical to durable construction. The DOE-sponsored Water Management Guide has proven to be a highly effective tool for disseminating much needed best practices.

The U.S. Department of Energy's Building America program sponsored development of the *Water Management Guide*, written by Joe Lstiburek, a building scientist and principal with Building America research partner, Building Science Corporation. The guide gives builders practical guidance for minimizing moisture problems in homes by controlling the entry of rain water and ground water. The guide was published by EEBA (the Energy & Environmental Building Alliance) in 2006 and is available through EEBA's online store, www.eeba.org/bookstore/prod-Water_Management_Guide-9.aspx.

Controlling rain and ground water are among the most important factors in the design and construction of durable homes. They also contribute to healthy homes since mold problems cannot exist without moisture. If you can eliminate water problems, you can reduce the likelihood of mold problems.

The *Water Management Guide* presents a variety of recommendations for minimizing water intrusion into homes. The guide includes dozens of drawings illustrating techniques for constructing roof, wall, window, and foundation assemblies to minimize the entry of liquid water. The guide recognizes that almost no cladding system is 100% foolproof 100% of the time. So, assemblies must also be designed to allow water out of the structure if it does get in and to provide drying potential for building components in the event that they do get wet.

The *Water Management Guide* includes guidance on

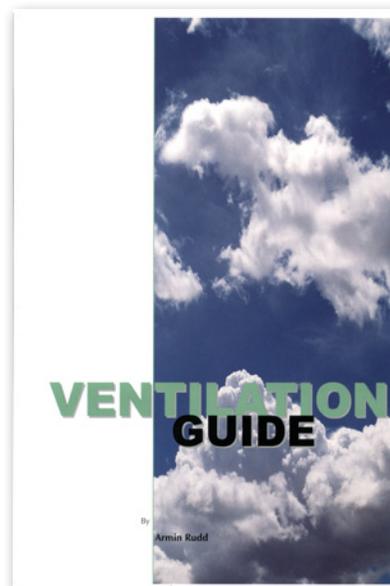
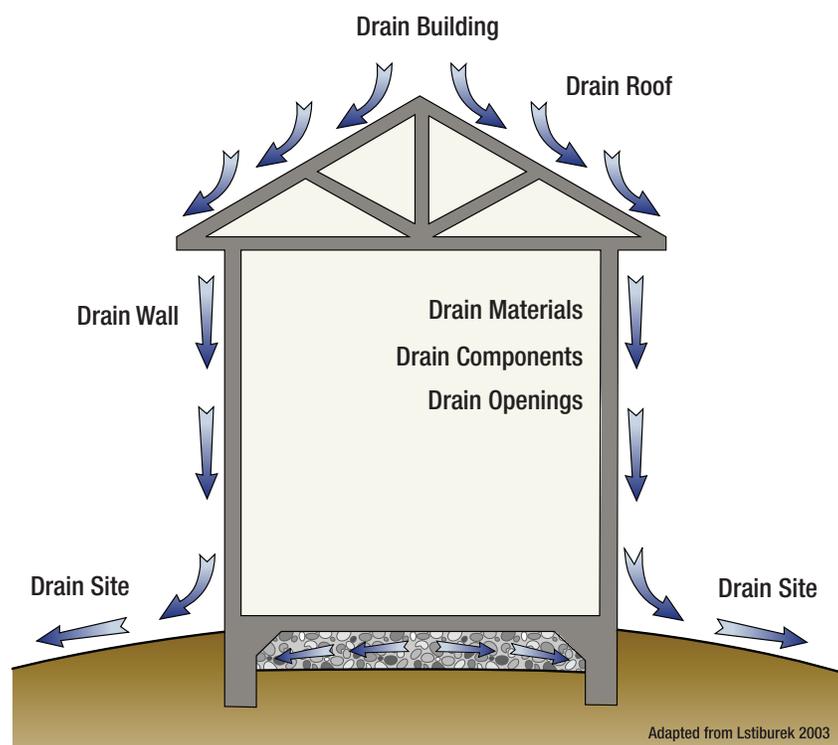
- fundamental principles of water management
- draining the site and the foundation
- draining roof and wall assemblies including screen and barrier assemblies
- draining wall and window openings
- draining materials.

The guide was preceded by other handbooks on moisture developed by Joe Lstiburek with sponsorship from DOE. This includes *Moisture Control Handbook: Principles and Practices for Residential and Small Commercial Buildings* by Joseph Lstiburek and John Carmody of the University of Minnesota, published in 1994 by John Wiley and Sons. This handbook was a major revision of an earlier book, also called *Moisture Control Handbook*, also written by Lstiburek with DOE sponsorship.

The *Water Management Guide* addresses water in the liquid form—rain water and ground water. Research and guidance for builders on ways to deal with water in the vapor form, transported by either air flow or diffusion, are discussed in other DOE-sponsored publications including the *Building America Best Practices Guides*, the *Attic Air Sealing Guide* by Building Science Corporation, and the *Ventilation Guide* by Building Science Corporation, as well as numerous articles on Building America team websites.

Drain all water away from the structure

The secret to water management is to construct the site and building assemblies to allow all water to drain down, out, and away from the structure.



Building America sponsored development of the *Ventilation Guide* authored by Building Science Corporation's Armin Rudd in 2006 and revised in 2011.

REFERENCES

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