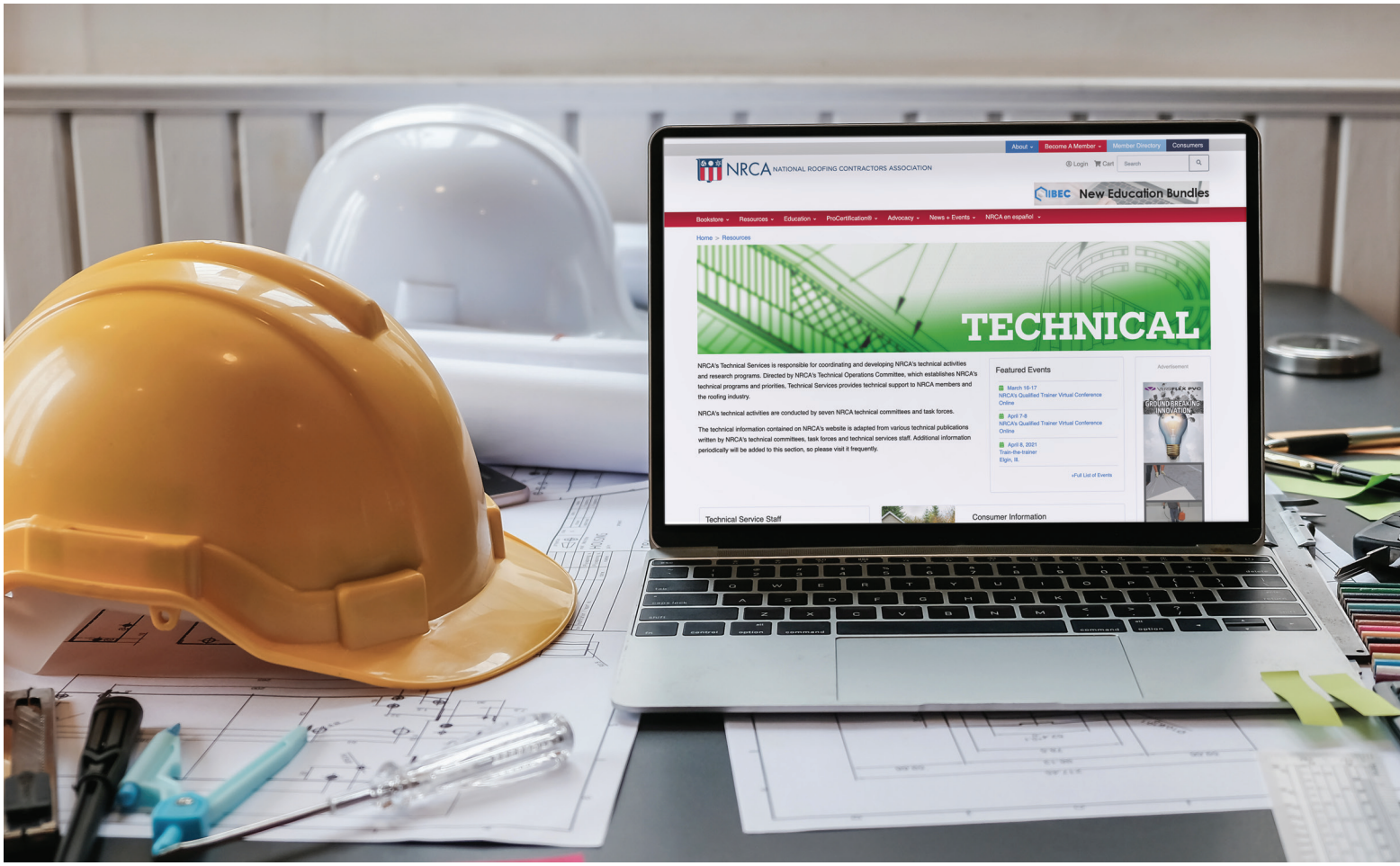


Three things you need to know

NRCA offers online resources that help you design and specify roof systems

by Mark S. Graham

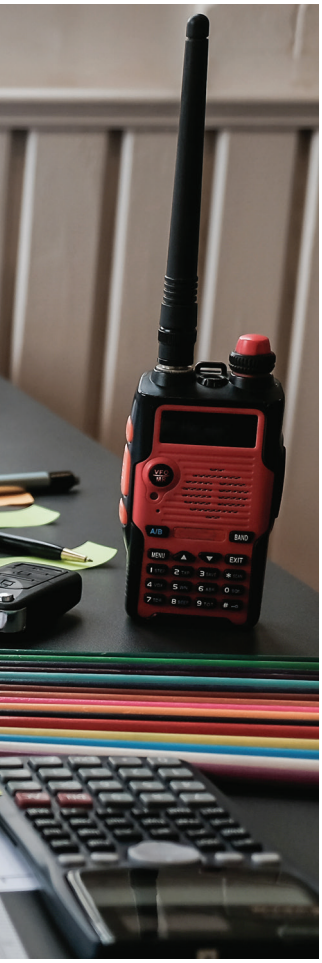
NRCA maintains several online resources that can assist you with properly designing and specifying roof systems. EnergyWise, Roof Wind Designer and NRCA's technical library are member benefits many roofing contractors often overlook.

EnergyWise

NRCA's EnergyWise roof calculator provides a basis for determining the relative energy efficiencies and costs of various low-slope roof system designs.

EnergyWise allows you to input specific roof assembly design information—including a building's climatic data, heating and cooling appliance types, energy costs and roof dimensions—and graphically construct roof assembly configurations to determine overall R-values and estimated heating and cooling costs. You then can compare these values with baseline energy-efficient values dictated by building or energy codes or energy-efficiency standards.

For roofing professionals considering reroofing options, parameters for a building's existing roof also can be input to compare possible heating and cooling cost savings that may be possible by increasing



a roof assembly's R-value.

EnergyWise also can be used to verify proper vapor retarder placement as a roof assembly component to prevent condensation.

You can view the results online and generate a detailed report of the specific buildings and roof areas analyzed. Results are saved in the EnergyWise user's personal account for future reference.

EnergyWise has more than 4,800 registered users who have input more than 11,100 projects. You can access EnergyWise at energywise.nrca.net.

Roof Wind Designer

Roof Wind Designer provides an easy-to-use way to determine roof systems' design-wind loads for many commonly encountered building types.

Roof Wind Designer design-wind loads are determined using ASCE 7, "Minimum Design Loads and Associated Criteria for Buildings and Other Structures." ASCE 7 is a widely recognized consensus standard and referenced in and serves as the technical basis for wind load determination in the International Building Code.®

Roof Wind Designer allows you to choose between ASCE 7's 2005, 2010 and 2016 editions and uses the following:

- ASCE 7-05's Method 1—Simplified Method
- ASCE 7-10's Chapter 30 Envelope Procedure, Part 2: Low-rise Buildings (Simplified)
- ASCE 7-16's Chapter 30 Envelope Procedure, Part 2: Low-rise Buildings (Simplified) and Part 4: Buildings with 60 ft. < h ≤ 160 ft. (Simplified)

These ASCE 7 design-wind load determination methods are limited to enclosed building types and building height limitations. For buildings outside of these ASCE 7 "simplified" methods, other ASCE 7 analytical procedures apply, which NRCA considers beyond the scope of an online calculator.

With Roof Wind Designer, you can determine design-wind loads using the allowable stress design method for ASCE 7-05 and both the allowable stress and ultimate strength design methods for ASCE 7-10 and ASCE 7-16.

Resulting design-uplift loads are provided for a roof area's field, perimeter and corner roof zones and roof edges' design uplift and outward loads. You can view the results online and generate a detailed report of the specific roof areas analyzed. Results also are saved in the Roof Wind Designer user's personal account for future reference.

Roof Wind Designer has more than 11,400 registered users who have input more than 41,750 projects. You can access Roof Wind Designer at roofwinddesigner.com.

Technical library

NRCA maintains a digital library of roofing-related technical publications, articles and research papers. The library is searchable by author, title, publisher and keyword and contains more than 8,500 titles.

Library content for which NRCA owns a copyright or documents that are in the open public domain (government research papers) are viewable and downloadable directly from nrca.net/technical/library. For other copyrighted documents or documents NRCA does not have permission to distribute, information for obtaining these from the document's publisher is provided.

> "EnergyWise, Roof Wind Designer and NRCA's technical library are member benefits many roofing contractors often overlook"

Valuable information

I encourage you to make use of these free resources that provide valuable assistance to you as you design and specify roof systems.

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IBHS releases 2020 FORTIFIED Home™ standard

The Insurance Institute for Business & Home Safety has released its updated 2020 FORTIFIED Home standard.

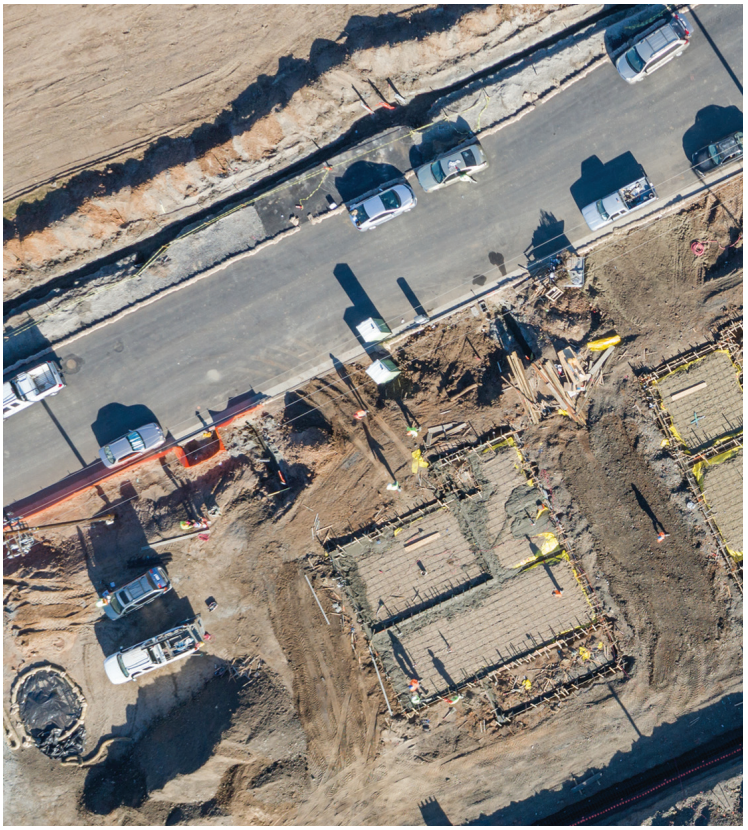
Established in 2010, FORTIFIED is a voluntary construction and reroofing program designed to strengthen homes and commercial buildings against specific types of severe weather. Nearly 7,000 homes received FORTIFIED designations in 2020, and the total number of U.S. homes with FORTIFIED designations is more than 22,000.

FORTIFIED Home requirements provide a systems-based, multitiered approach for improving the resistance of homes to damage caused by hurricanes, high winds and hail. The FORTIFIED Home standard goes beyond building code requirements with a series of enhancements to strengthen vulnerable parts of a home, starting with the roof system. It includes three progressive levels of protection for new and existing homes tailored to weather hazards faced in different geographic regions.

Periodic updates to the FORTIFIED Home standard are based on testing at the IBHS Research Center. Some updates also are intended to simplify use. The 2020 standard emphasizes the importance of strong garage doors by expanding a requirement for adequate garage door design pressure ratings at the FORTIFIED Silver™ level across all regions. Technical updates help ensure the standard is consistent with changes in the model building code and ASCE 7-16, "Minimum Design Loads and Associated Criteria for Buildings and Other Structures." In addition, the standard's compliance forms now are simplified.

"FORTIFIED Home has shown in lab tests and real-world events to minimize damage caused by high winds, wind-driven rain and hail, and as our research progresses so will our standard," says Fred Malik, managing director of the FORTIFIED program. "These latest updates further our mission to strengthen homes against natural disasters, arming builders and roofing contractors with a system to meet the demands of their customers and making it possible for those homeowners to achieve the peace of mind that comes from proactively taking steps to reduce the impact of Mother Nature."

The 2020 FORTIFIED Home standard is effective for projects permitted on or after Nov. 1, 2021. The standard and a summary of changes are available at fortifiedhome.org/standard-2020.



FAA approves first unmanned automated drone flights

On Jan. 15, the Federal Aviation Administration granted its first approval for a company, American Robotics, Marlborough, Mass., to operate automated drones without human operators on job sites.

The FAA approved American Robotics' Scout System, which includes acoustic detect-and-avoid technology that keeps drones safely distanced from other aircraft.

The FAA's approval is a step toward a future of unmanned drone operation. Two days before the American Robotics announcement, the FAA announced plans to issue $5.8 million in research, education and training grants to universities that are part of the agency's Air Transportation Center of Excellence for Unmanned Aircraft Systems to pay for special projects not specifically related to the construction industry.

In the construction industry, unmanned automated drones could help contractors accumulate building information data, monitor progress on job sites and check for safety hazards without needing certified pilots.

In 2019, the FAA gave a waiver to Greeley, Colo.-based general contractor Hensel Phelps to fly parachute-equipped drones over populated construction sites. Drone flights over populated areas are prohibited under general FAA drone rules. The waiver means Hensel Phelps and other construction firms cleared by the FAA in the future can fly drones over active job sites.

Roofing Alliance funds virtual reality safety research

The Roofing Alliance is funding a virtual reality and safety research program through Mississippi State University, Starkville.

MSU's proposal, "Evaluating the Efficacy of Virtual Reality Technology for Improving Worker Safety," was approved for funding in April 2020.

A Roofing Alliance task force is working with a team from MSU to develop a virtual reality training module for the roofing industry focused on ladder safety and an overall assessment of rooftop safety. The program is intended to help train new hires and entry-level workers with no previous experience. Participants will use virtual reality to experience what it feels like to climb a relatively tall ladder and understand some key concepts of ladder safety.

"It's intended to be part of a new hire's onboard training before they actually go up on the roof," says Josh Kelly, chairman of the Roofing Alliance task force. "We provided faculty with some elements that are to be included such as assessing the job site for best ladder location; selecting which ladder to use based on building height; and weight rating, inspecting, setting up and securing a ladder."

The task force team also has worked with MSU to develop a building information modeling strategy for the research and deliverables.

To learn about additional projects funded by the Roofing Alliance, go to professionalroofing.net.