

AN INNOVATION SHOWCASE

THE NEW AMERICAN HOME EMBRACES BUILDING SCIENCE AND SOPHISTICATED TECHNOLOGIES TO BOOST ENERGY EFFICIENCY, COMFORT, AND LIVABILITY

By Jean Dimeo

THE NEW AMERICAN HOME 2016 TAKES ITS DESIGN CUES FROM THE SURROUNDING DESERT AND ITS INNOVATION CUES FROM THE VERY LATEST IN PRODUCT DEVELOPMENT.

Immediately obvious are the handsome, desert-rugged looks and design that manages to be modern yet warm. But what's most impressive about The New American Home 2016 is the innovation throughout. A triple-threat combo of smart building science, spanking-new products, and state-of-the-art systems make this Nevada show house cutting edge, says Josh Anderson, owner of Element Design | Build, the Henderson, Nev., company that designed and constructed the house. Here are some of the products that make this home as groundbreaking as it is gorgeous.

WINDOWS AND DOORS

For The New American Home 2016, Sierra Pacific Windows is debuting its Lift & Slide Door System. The doors' hardware lifts the panels so they roll easily, also lowering them so they lock into place for security, weather resistance, and greater energy efficiency, according to the manufacturer. The Elements Design | Build team hails the Lift & Slide's sleek design as a key feature in creating a seamless interior-exterior transition.

Sierra Pacific's new energy-efficient windows are also installed throughout the home. They boast superior glazing in the form of Lo-E 340, a new high-performance glass that registers an ultra-low 0.18 solar heat-gain coefficient, and blocks 98 percent of ultraviolet rays, according to Sierra Pacific. The stats are "astonishing," says Josh Moser, architectural designer at Element Design | Build and the project manager. "They helped get our interior heat-gain numbers down."

All Sierra Pacific doors and windows in The New American Home are aluminum clad, and their powder coatings emit near-zero volatile organic compounds (VOCs), the company says. Unlike a liquid-coating process, the powder-coating method virtually eliminates the generation of hazardous waste. The payoff is a durable exterior finish that can withstand intense desert sunlight without sacrificing color resilience.

BUILDING ENVELOPE

Anderson says that the Element Design | Build team was intent on developing the best envelope system possible using products



WITH ITS ULTRA-EFFICIENT ENVELOPE, THE NEW AMERICAN HOME SURPASSES NET ZERO, GENERATING MORE ENERGY THAN IT ACTUALLY NEEDS.

that builders are accustomed to working with. Owens Corning supplied the insulation products, and its building science approach helped the house surpass net-zero status. The company performed predictive modeling of heat and moisture interactions associated with the use of various building materials and assemblies in the foundations, walls, and roof.

The modeling took into account variables including desert climate; orientation; hours of sunlight during various times of the year; and the home's extensive use of windows and patio doors. Occupant comfort based on time of day; where the occupants are in the house; and even what each person is wearing (for example, long sleeves versus short) was also studied.

This is the first New American Home that includes insulation on the exterior: 2-inch-thick extruded polystyrene with an R-value

of 5 per inch of thickness was applied before cladding was installed, and rigid foam insulation was installed under the slab. Moser says that the insulation technique has proved so effective that his firm doesn't expect The New American Home to register much heat gain at all. Most heat gain sources will actually come from the interior of the home, he says, including body heat from its inhabitants.

MECHANICALS

HVAC in The New American Home 2016 is monitored by Trane's ComfortLink II XL950 Control, which can control up to eight zones using a 7-inch touchscreen. The home is heated and cooled by a quiet 4MXW27 Multi-Split Ductless system, which Trane says has up to a 27 SEER rating. And the HVAC can be controlled by any Web-enabled computer or smartphone.

Compared with conventional tank units, tankless water heaters offer a number of water-, energy-, and space-saving features, which is why five gas-powered units from Bosch Thermotechnology are used in The New American Home. Tankless technology works by heating water on demand instead of keeping it hot 24/7. According to Bosch Thermotechnology, this can save homeowners up to 50 percent on their monthly utility bills.

Tankless water heaters aren't new technology, of course; but because they still represent a small percentage of the overall market, Moser stresses the importance of underscoring their benefits in this showcase home.

HOME AUTOMATION

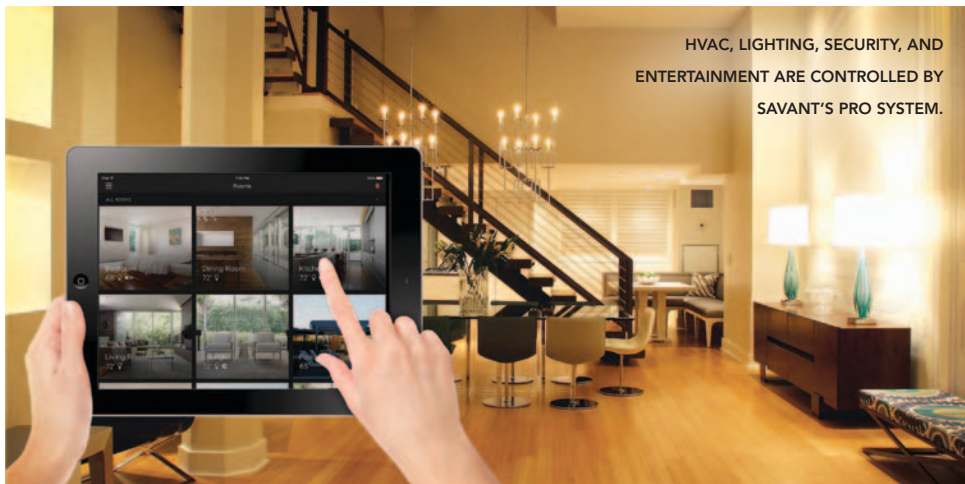
The New American Home is a smart home, enabled by state-of-the-art automation. The Savant Pro system, integrated with the home's security system, controls HVAC, lights, shades, and three fireplaces, as well as audio in 20 zones and video in eight zones. All products and features are controlled by an Apple Mac mini and accessed through a remote, a lamp control, or lighting keypads on walls, and from the Savant app for mobile devices and tablets.

Often lauded for being user-friendly, Savant Pro allows homeowners to reconfigure settings after initial installation. In the past, a call to the integrator would have been necessary, says Josh Blanken, a Savant area sales manager. "With the Savant app, you can change the scene from a [smart] phone or iPad." Savant Pro's capture feature allows the user to create a specific scene and recall it at a later time.

Another innovative, tech-friendly feature in The New American Home is DuPont's Charging Surface, which is installed in six different locations. Available as an option in DuPont's Corian and Zodiaq lines, the Charging Surface is currently being installed by DuPont fabricators nationwide.

"The idea around the surfacing is the elimination of clutter—it looks like your regular countertop," says Katie Congress, DuPont's residential marketing manager.

A dual-mode transmitter unit, which wirelessly transfers energy to a receiver within



HVAC, LIGHTING, SECURITY, AND ENTERTAINMENT ARE CONTROLLED BY SAVANT'S PRO SYSTEM.



DUPONT'S CHARGING SURFACE HAS A TRANSMITTER INSTALLED BENEATH THE COUNTERTOP SURFACING, HELPING ELIMINATE CORDS, CHARGERS, AND CLUTTER.



KOHLER'S MOST ADVANCED SHOWER SYSTEM TO DATE, THE DTV+, ENABLES TOUCHPAD CONTROL OF STEAM, WATER, LIGHT, AND SOUND.



KOHLER'S ONE-PIECE VEIL TOILET HAS DUAL-FLUSH CAPABILITIES, AS WELL AS AN INTEGRATED BIDET.



THERMADOR'S MASTERPIECE SERIES STEAM AND CONVECTION OVEN ALLOWS TWO MODES OF COOKING AT THE SAME TIME.

KITCHEN AND BATH

The baths and kitchen in The New American Home are also rich in innovation. Kohler's DTV+, the company's most advanced showering system yet, combines controls for water, sound, light, and steam. The touchscreen lets users program and customize settings, which can be managed in several ways, including delivering two different water temperatures at the same time. Each experience is meant to deliver unique wellness benefits, says Les Petch, Kohler's senior product manager for performance showering. DTV+ includes three spa experiences—Relaxation, Well-Being, and Energy—that Petch says will be expanded in the future and available for homeowners to download.

Bathrooms feature Kohler's new Veil toilet, a one-piece, dual-flush model with integrated bidet. According to Kohler, the model not only offers sleek styling but optimum hygiene and ultimate comfort. The Veil toilet has a bevy of technological features, including:

- A self-cleaning function that uses UV

light and electrolyzed water systems to sanitize the bidet wand surfaces.

- A warm-air-drying system with adjustable temperature settings.
- A motion-activated, hands-free seat and cover open/close function.
- LED lighting that illuminates the bowl, serving as a night light.
- A touchscreen LCD remote control with two programmable presets.

Although induction cooktops aren't new, the technology has yet to become mainstream. But the benefits may soon change minds: Thermador's Masterpiece Series Freedom induction cooktop stays cooler to the touch than an electric cooktop, rivals gas in speed and responsiveness, and doesn't heat up the kitchen. A full-color touchscreen induction panel—an industry first, the manufacturer says—offers better control and faster access to settings. The cooktop also offers other features, such as:

- 48 induction elements that deliver 63 percent more usable cooking surface than competitors.
- Room for up to four pots or pans to be placed anywhere on the surface.
- The ability to transfer all programmed settings from one spot to another when a pot is moved from one place on the cooktop to another.
- A 4,600-watt PowerBoost element that boils water faster than any other cooking technology.
- The Anti-Overflow System, an exclusive feature that shuts off the relevant element and sounds an alarm when liquid is detected on the user interface.

The kitchen also has two Thermador Masterpiece Series Steam and Convection Ovens, which offer a combination of cooking modes. The ovens include 40 EasyCook food programs and pre-programmed modes that automatically set the oven temperature and humidity to ensure perfect cooking results. **PB**

Jean Dimeo has been reporting on building products and technologies for more than 20 years.