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2017

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COMMUNITY

PAST, PRESENT, FUTURE

REMODEL OF THE YEAR

TOP DESIGN TRENDS FOR 2017

MANAGING STORMWATER RUNOFF

Shifting architectural
styles tell our stories



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ON THE COVER:
Bassenian Lagoni Principal Hans Anderle instilled a familiar style with fresh elements and materials to design the millennial-inspired Contemporary Farmhouse.



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Elevation EVOLUTION

By David Kosco, AIA

Shifting architectural styles through the decades tell our stories and share our values

Pre-World War II, the notion of mass-produced housing in America was neither relevant nor existent. Houses stood as humble structures dotting the countryside or opulent mansions of the country’s most elite. The range of architectural styles was just as vast, from Colonial to Revival and Queen Anne to Tudor. Housing was a surfeit of historically influenced structures built with rich integrity and artistry.

It wasn’t until the 1940s and the end of World War II, with GIs returning home, that there was a mass demand for housing. The Postwar Economic Boom, as it came to be known, was a prosperous time in history, particularly for builders. The Federal Housing Act, which was passed in 1934 and created the Federal Housing Administration, fueled the housing industry. Hundreds of thousands of Americans across the country were buying single-family homes.



◆ Pre-War ◆

◆ Post-War ◆

◆ 1970s ◆

◆ 1990s ◆



BASSENIA | LAGONI



Home builders began responding to the need. Speed, efficiency and affordability became the hallmarks for housing developments. With the ever-increasing demand, they couldn't build homes fast enough, and given the limited economic means of the consumer, they couldn't build them inexpensively enough. As a result, the artistry of home design began to decline. Single-story homes

of modest square footage were the prominent housing type and, but for a few exceptions, became the prototype for suburbia. The American dream was born.

POP CULTURE BRINGS BUILDERS AND ARCHITECTS TOGETHER

Residential development until the late 1950s continued this model, driven by builders typically without the

involvement of architects. At this time, the country began to see a renaissance in design. Whether it was the automobile industry, consumer products or housing, design began to separate the norm from the newly desired. Pop culture and free spirit were influencing society, and people's tastes and preferences shifted.

Recognizing the opportunity in this shift, builders began hiring architects.

The face of home started to change. Communities began to take on a new look. No longer was the house merely shelter, with little thought given to its image, nor were they steeped in rich pedigreed history. The house became an expression of the times. From the midcentury modern ranch homes of the

“The Great Recession shook up the industry. ... Countless builders shut down, others adjusted, and a third category was born—builders looking to create a new model and make their mark.”

'50s and '60s to the shed style of the '70s and '80s, many communities exemplified a new and unfamiliar character that is now memorialized as an era.

The 1990s brought about a resurgence in mass-produced housing. After decades of a less “stylized” approach to residential architecture, historical references began surfacing, and within a relatively brief period, new home communities rooted in identifiable historic styles were sprouting across the country. Neighborhoods composed in an eclectic array of architectural vernaculars became *en vogue*.



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ERIC FIGGE PHOTOGRAPHY

◆ Today ◆

CHRIS MAYER PHOTOGRAPHY



The romantic notion of returning to Grandma's house swept the nation, and the white-picket-fence American dream was born again. For the next two decades, builders and their architects pursued a more pedigreed architecture, authentic to a snapshot in history. The eclecticism within these new home communities perpetuated the idea of individuality for its home owners. Your neighbor's home on either side of you looked nothing like your own, and your identity was secured.

HOUSING'S NEW, EMERGING FACE

The Great Recession shook up the industry. The housing boom, on a fast track, slammed full speed into an unavoidable brick wall. Countless builders shut down, others adjusted, and a third category was born—builders looking to create a new model and make their mark coming out of the greatest economic downturn since the Great Depression.

Parallel to all of this is growing concern for the environment, a technological world advancing at the speed of light, and a

changing demographic. Baby boomers are fast approaching retirement and won't be the economic engine, while the millennial generation is strapped with debt.

What's a housing industry to do? Rethink: All of the listed drivers are running in parallel, and all of them are reshaping the way we think of today's house both inside and out. Specific to the face of home, we've entered a transitional era. The movement of the '60s and '70s turned its back on history, and the '90s referenced only the past.

Today, housing is taking on a new face, a sort of old and new, if you will. We see architecture rooted in the past, but advanced into the present, the warmth of history fused with the sophistication of today's technology and materials. It is an architecture that is an expression of today and the people who inhabit the times, younger buyers looking to express who they are through their homes and older buyers desiring homes that match the reinvention of themselves.

The face of tomorrow will continue to take shape based on these drivers. We cannot predict what technology may do to the future look of the house. Photovoltaic paint in lieu of solar panels, passively designed elements to improve a home's heating and cooling performance, and recycled and repurposed materials will all contribute to the new face of home.

Demographic shifts will lead to specific preferences, and environmental concerns will certainly drive our thinking. Prefabrication has yet to have an impact, but it only seems natural based on so many variables. The house of the future will truly be that. We live in an exciting era, and one we believe will see more changes in 10 years than we saw in the previous hundred. 🏡

David Kosco, AIA, is senior principal and director of design at Bassenian | Lagoni.



HES & HERS NUMBERS

What Do They Mean?

By Megan Alise Carroll

Independent rating systems can help builders explain the benefits of energy efficiency to their buyers

These days, there is a significant amount of buzz around numbers relating to energy efficiency when it comes to new and existing homes. Is a high number on an existing home good or bad? If the original number was high, and now, after improvements, it is lower, what does that mean for the house?

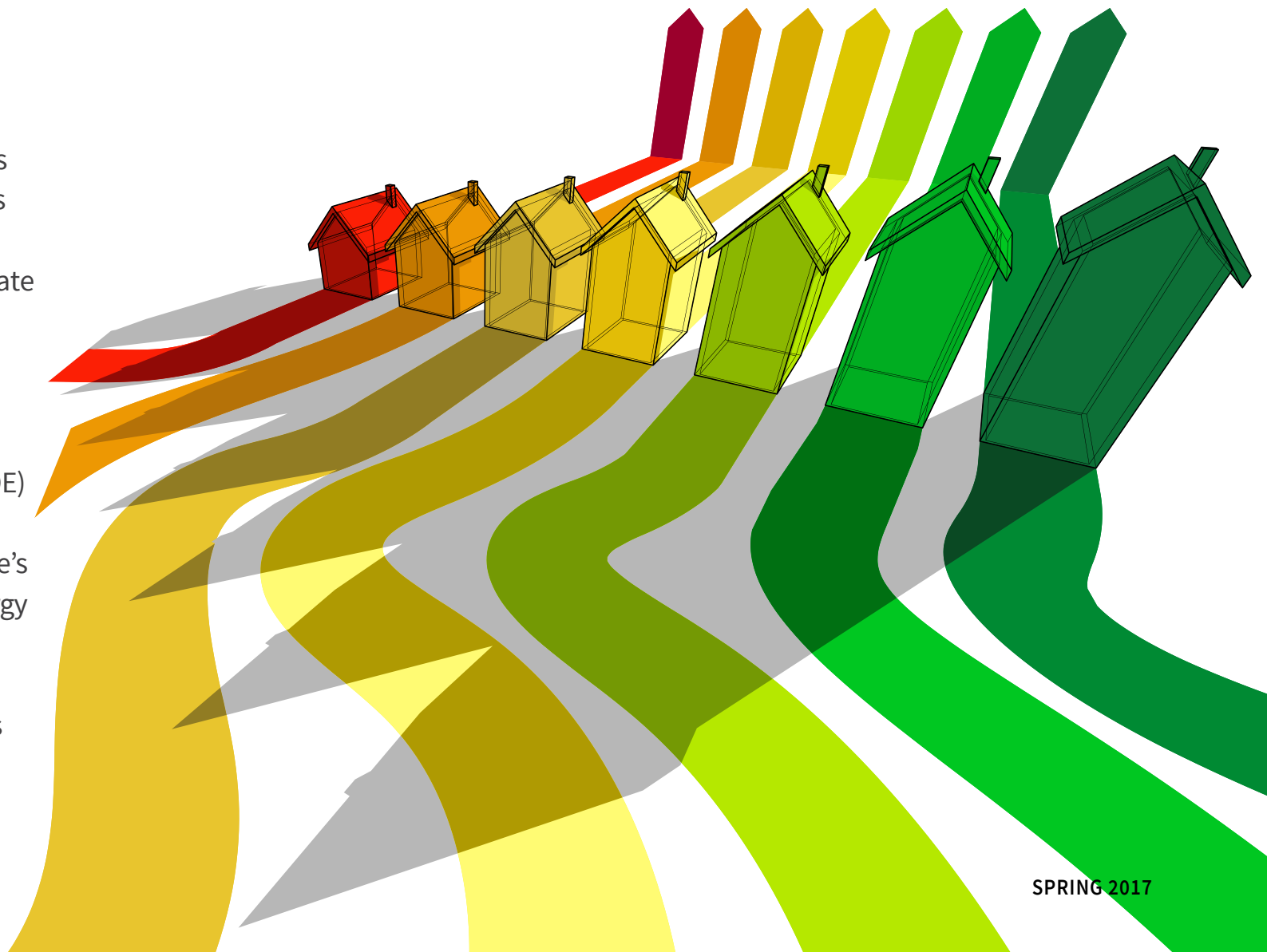
Unfortunately, the answers are not cut-and-dried; they depend significantly on the rating system being used.

Home Energy Rating System (HERS) Index and Home Energy Score (HES)

are two of the programs with numbers swirling around them. Which numbers are good? And how do builders, designers and sales teams communicate that to buyers? Let's take a look.

ON A SCALE OF 1 TO 10

HES is a 1-to-10 scale developed in 2012 by the Department of Energy (DOE) to help predict homes' energy performance. This score is similar to a vehicle's miles per gallon, but for a home's energy efficiency. When one purchases a car, knowing how much fuel it will use over time and that cost to the owner is much like knowing the cost of energy to operate a home through its score.



As with miles per gallon, a higher HES is better than a lower one. A score of 1 means the home uses more energy and is less efficient; a score of 10 means the home uses less energy and is more efficient.

The average home falls right in the middle of the scale, scoring a 5. The HES scale is only used for single-family homes, including duplexes and town-homes, and is popular among existing homes. It is not available for multifamily or mobile homes.

To obtain a HES, an assessor walks through a home, inputting up to

If a home were to score a 1, this means it would use more energy than 85 percent of the homes in the United States. A home scoring a 4 on the HES scale may have more room to improve upon its efficiencies than one with a score of 7. This does not mean a house that scores a 10 could not improve, but rather that house will use less energy than 90 percent of homes in the United States. There are likely areas that could still be addressed and upgraded.

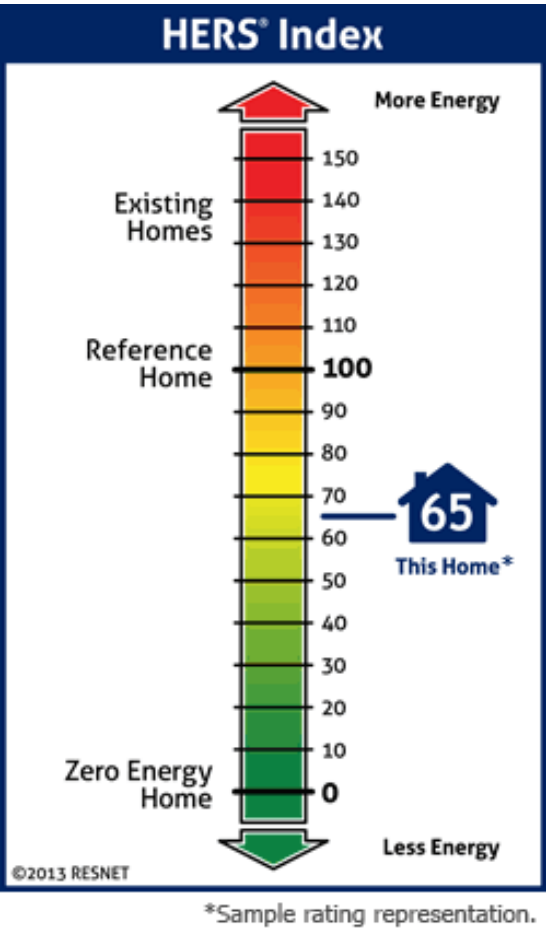
approximately 50 data points into software. These data points include assets such as the building envelope, HVAC systems, and wall components. Once the data entry is complete, an overall score and a list of suggested upgrades to get the score closer to a 10 is generated.

It is important to keep in mind that the HES uses estimates instead of actual home owner energy usage data to create the score. The HES also does not measure energy per square foot. If two homes were the same overall except size, it would show the larger house having lower efficiency.

The HES is a quick, easy and affordable assessment to help home owners understand how the home uses energy and how to improve. It can be a great way to showcase how a home compares to those around it or how its energy efficiency improves with upgrades. More than 21 states have adopted the use of HES, and it can even be seen on an MLS in some areas, perhaps increasingly so in the future.

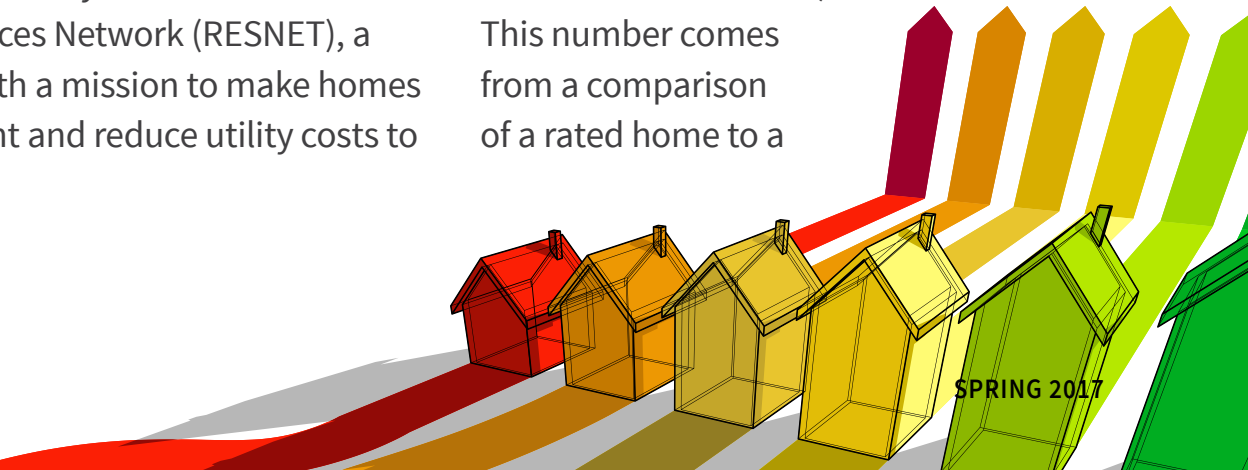
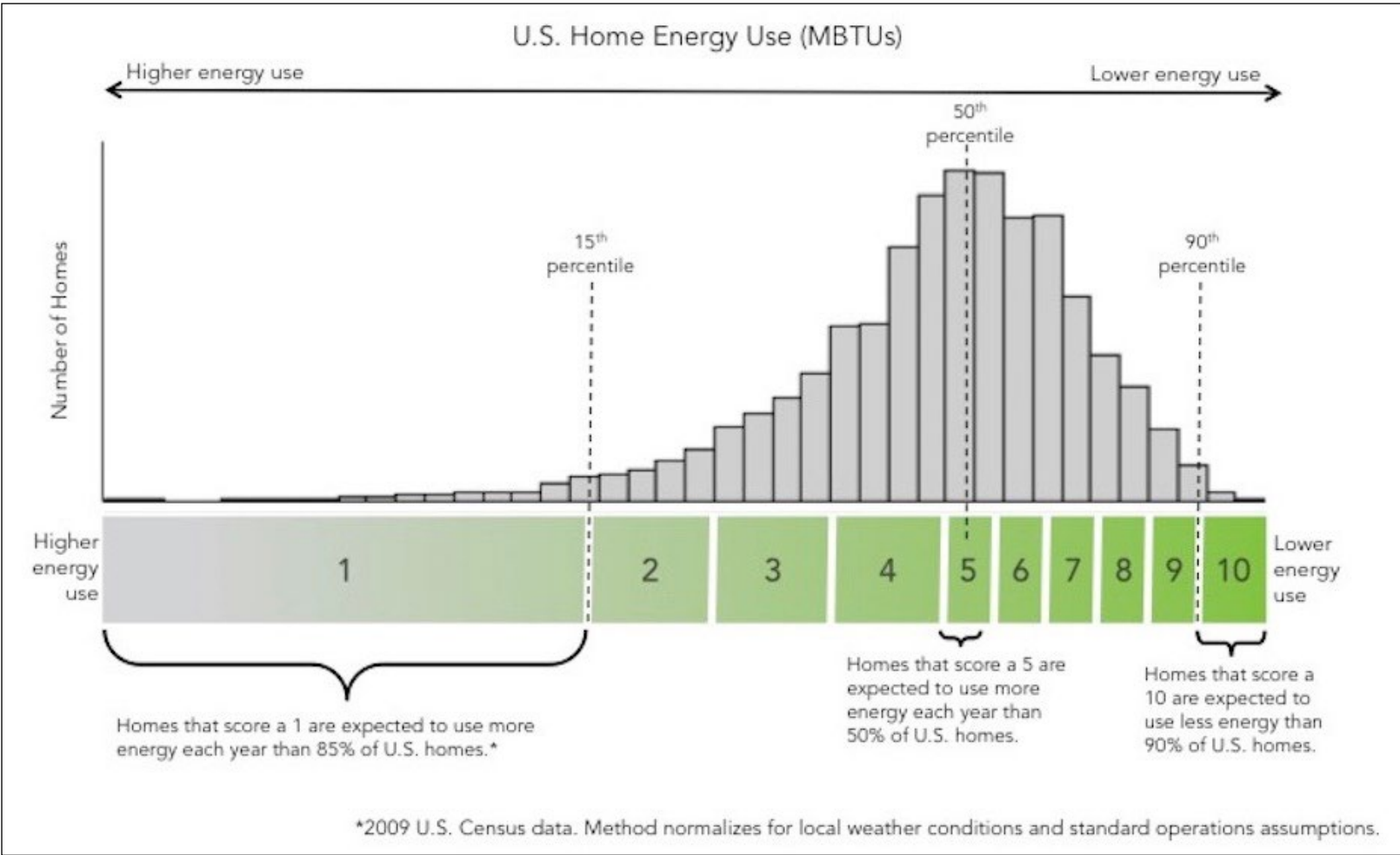
HOW LOW CAN YOU GO?

The HERS Index is a rating system released in 2006 by the Residential Energy Services Network (RESNET), a nonprofit with a mission to make homes more efficient and reduce utility costs to



the home owner. HERS is recognized by the DOE, the Environmental Protection Agency and the Department of Housing and Urban Development.

HERS functions like the game of golf; the lower the score, the better. A rated home is given a score based on its energy performance on a scale from 1 to 150 (although higher and lower numbers are available). This number comes from a comparison of a rated home to a



Going Green

similarly sized and designed model home. The model home is derived based on the International Energy Code of 2004, which would receive a rating of about 100 on the scale. Older houses average somewhere higher on this scale, about 130 and up. HERS ratings can be performed on single-family, multifamily or mobile homes.

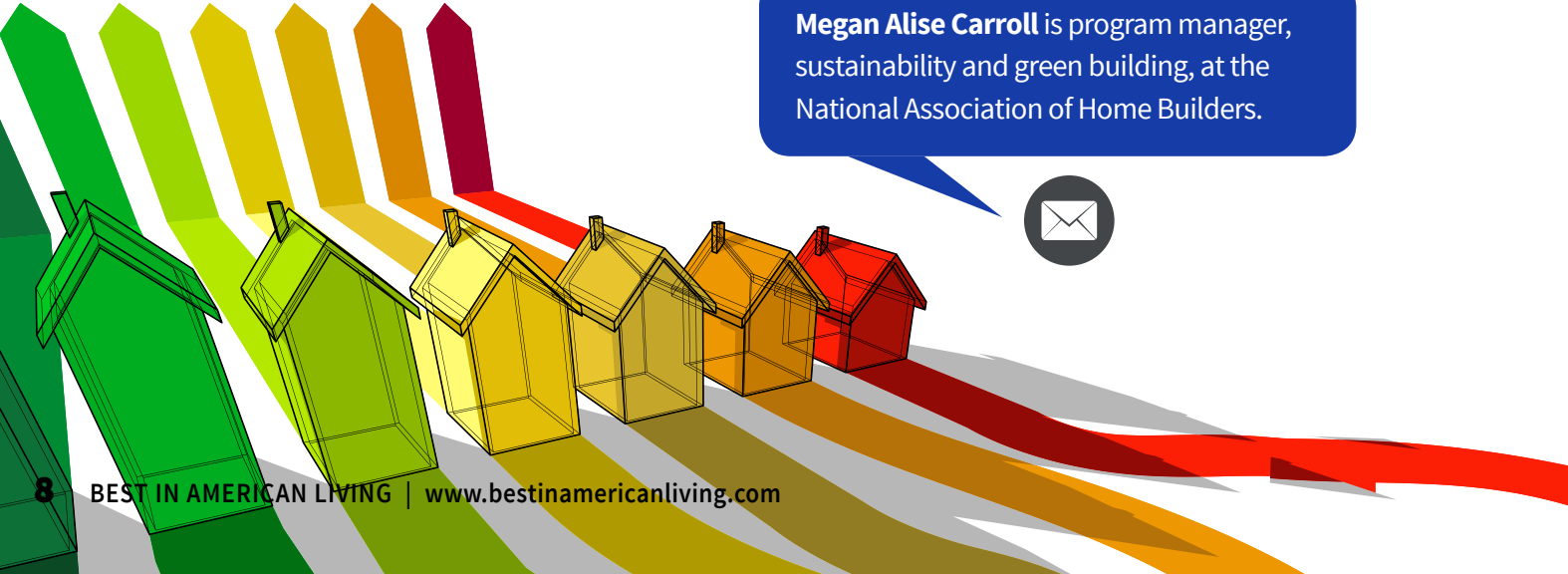
The HERS Index takes into consideration air leakage in the whole house and the duct work, the specific energy use of the home through its major appliances, and also insulation in ceilings and walls. All of this data is gathered by a HERS rater, who is trained to look for details in each home and perform specific tests. This thorough examination into how a home uses and loses energy takes a few hours. The findings are input into software that analyzes the results and indicates recommended upgrades for a home.

If a home were to score an 80 on the HERS Index, this would mean the home is 20 percent more efficient than the modeled home to which it was compared (the reference home).

This allows builders to showcase energy-efficient details of their homes that might not otherwise be seen. Benefits that are often hidden by drywall or are hard to explain now have their moment in the sun. The HERS score is a comparable number, allowing for clear communication of value, while also predicting future performance for the rated home.

Summing up, HES is a quick and more general approach based on estimates; the higher the number, the better. HERS looks at each home more comprehensively, which make take longer; the lower the number, the better. There is a place for both HES and HERS in the housing industry; it all depends on how much time and money a home owner wants to spend on increasing the efficiency of their home. ▲

Megan Alise Carroll is program manager, sustainability and green building, at the National Association of Home Builders.



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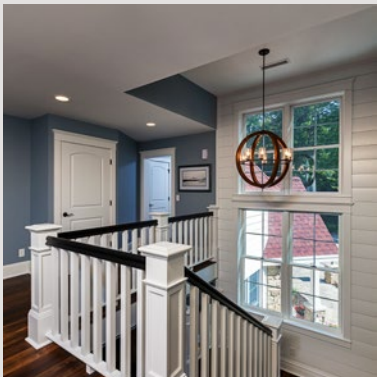
Sustainability & Green Building

- The toolkit includes:
- **Case studies** highlighting different ways builders have successfully certified homes for their clients
 - **High performance educational videos** for builders and potential home buyers
 - **Reports** comparing and contrasting different national green building programs allowing HBAs and their members to decide which program(s) best meets their home certification needs
 - **Sustainability checklists** allowing builders, remodelers, design professionals and land developers to quickly assess their projects and track their progress towards green certification
 - **Best practices for any HBA** to successfully create a High Performance Committee or Council at the state or local level
 - **Infographics** illustrating high performance building trends over the past several years

STAY AHEAD OF THE GAME

Top Design Trends for 2017

By Alexandra Isham



From natural wood siding and metal roofs to quartz countertops and dual-color cabinets, designers are pushing boundaries while being space-smart

Three words that best describe the 2017 International Builders' Show? Jam-packed, nonstop and inspiring. Many attendees left with a renewed sense of excitement for their craft and a portfolio of new knowledge. Trends from the 2016 Best in American Living™ Awards class of winners and ideas shared at the 2017 NAHB Design Committee's annual design trends roundtable discussion gave attendees mountains of take-home design ideas.

Trends from both the awards and the roundtable address overall styles, exterior materials, interior materials and colors, and architectural layouts and details. Thoughtfully incorporating these trends into today's homes and communities can help architects, designers and builders stay ahead of their competitors and maintain a cutting-edge reputation with clients.



Alexandra Isham is program manager, design, at the National Association of Home Builders.



STAY AHEAD OF THE GAME

Top Design Trends for 2017

By Alexandra Isham

DOUG PETERSEN



The Heartland shows off the modern farmhouse style throughout the house, incorporating dark frames, a farmhouse sink, natural wood beams and barn doors.

Architectural Styles

Think *Mad Men* meets 21st-century luxury, and you have today's take on midcentury modern, which continues to trend across the nation. The style is recognizable by its emphasis on planar massing, open floor plans and large expanses of glass. Modern-day furnishings pay homage to Mies van der Rohe's

Barcelona Chair but exude all of the comforts and technology of today's lifestyle.

Also still popular is the modern farmhouse style that incorporates dark door and window frames (also seen in midcentury modern), natural wood beams and farmhouse sinks, details that make even the largest of homes still feel comfortable

and livable. Barn doors, which can be modernized with glass or alternative hardware materials, are both focal points and space-smart, taking the place of door swings.

Overall, there has also been a return to traditional over modern design. Architects, designers and home buyers are favoring time-less, classical architectural details.

STAY AHEAD OF THE GAME

Top Design Trends for 2017

By Alexandra Isham



Waterside in Indiana combines metal roofs with traditional shingles. The home also features two different directions of siding, horizontal for the first floor and vertical above.

JEFF GARLAND

Exterior Materials



Bar Triangle Ranch in Texas incorporates wood and two different stone designs in its façade.

SARAH MOORE

Across the United States, metal roofs are increasing in popularity, and not just on modern homes. Modern farmhouses, contemporary and rustic homes alike incorporate metal roofs in various colors and degrees of rawness. For remodeled homes, owners are turning to different colored roof tiles, such as red, to modernize the home.

On exterior walls, board and batten and ipe (pronounced EE-pay) natural wood siding are trending. Fiber cement siding still continues to be popular, but stand it vertically and pair it with battens for a more unique look than horizontal siding. In 2017, expect to see an increasing number of homes with two directions of siding, even on the same façade. Switching from horizontal to vertical partially up a façade adds visual interest without having to change materials or colors.

Other exterior trends to watch for include striped brick (using a different color of brick as an accent), painted brick and mixing natural materials.

STAY AHEAD OF THE GAME

Top Design Trends for 2017

By Alexandra Isham

This stair features a shiplap wall and pairs the white boards with a blue hue in the hall.



JEFF GARLAND

Shiplap, or other siding such as tongue-and-groove that gives a shiplap appearance, is showcased throughout this year's class of winners, be it in entryways, living rooms, accent walls, stairways and more. Rather than simply painting a room, the addition of siding creates visual interest without being too "loud," and the use of shiplap will give the design staying power.

Natural wood ceilings and beams have also trended up, bringing a natural element even into

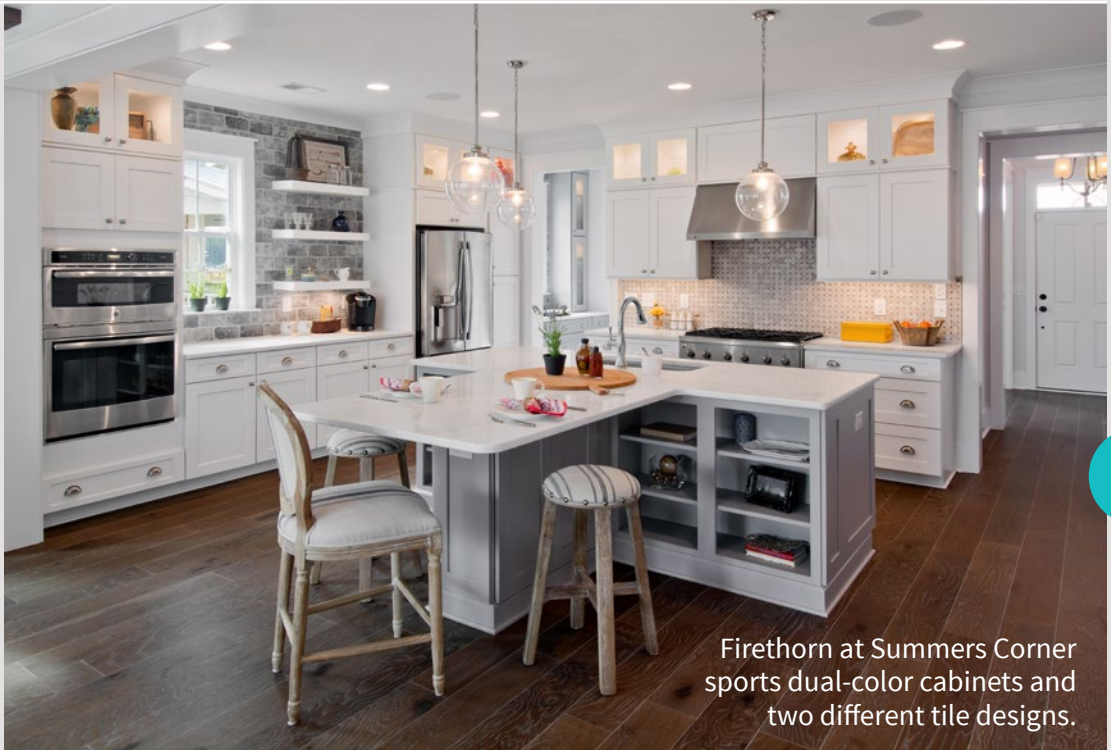
modern-chic homes. Wood floors—either very dark or very light—are increasingly popular.

Kitchens are sporting black stainless steel appliances and dual-color cabinets (usually dark on the bottom and lighter on top). Architects and designers at the Design Committee roundtable agreed that their clients are asking for quartz over granite, as granite can limit other design choices. For those who still want granite, one option is to pair a solid surface quartz with granite trim. Quartzite is also something to watch as 2017 progresses.

Above kitchen cabinets, designers are now incorporating lighting and tile to add interest to otherwise under-designed spaces. Tiles are now being offered in new and detailed designs; for example, a busy mosaic used behind the stovetop.

Simultaneously, larger tiles are increasing in popularity. Larger tiles require thoughtful design from the very beginning to ensure a seamless installation and finished product.

Interior Materials



JOHNSON PICTURES INC.

Firethorn at Summers Corner sports dual-color cabinets and two different tile designs.



DESIGN TIP: Be thoughtful when choosing grout. This is something that is often overlooked in tile design, but it can add a finishing touch that makes a kitchen or bath sing.

STAY AHEAD OF THE GAME

Top Design Trends for 2017

By Alexandra Isham



Colors

White-on-white interiors are still seen in every style of home, but gray on gray is getting left behind. Blues and greens are also wanted by clients, according to NAHB design professionals, as are bright and bold colors in urban and millennial-heavy areas. The 2017 Colors of the Year mostly fall on the purple to taupe spectrum, although Thrive, released as a “key

color” for 2017 by the Color Marketing Group, is reminiscent of 1960s Avocado. Are the earlier decades making a comeback? Some hope not, but it is perhaps too soon to tell. In Texas, Colorado and other states, clients are asking for bright doors, typically reds or turquoises. A bright, unique front door color gives any home a unique feel to a potential buyer.

STAY AHEAD OF THE GAME

Top Design Trends for 2017

By Alexandra Isham

ERHARD PREIFFER



Rather than close off under-stair space, the designers of Michigan Lake House created a clever wine storage and display area.



The Heartland includes a mud room, bench and storage space combo by the front door, while also using farmhouse doors.

DOUG PETERSEN

Layout and Design Details

Architects and designers are increasingly taking previously unused space and creating nooks, usually in the shape of under-stair storage, benches or hide-away areas. The open floor plan continues to dominate, although buyers are now looking for the next level: open spaces that can transition for multiple uses.

In response to the open layouts, architects and designers are also now creating “escape

rooms,” or private spaces that can be closed off from the open plan, to give home owners the option of a secluded space to be used as needed, perhaps as an office or studio.

One problem with the open layout is that buyers can get overwhelmed if there is no definition in the space. Flooring changes or drop ceilings can help define a space while still maintaining an open layout.

Two last kitchen trends: bars in the kitchen and giant islands that double as tables. Both these trends allow the kitchen to be versatile, from entertaining to a spot to complete homework while parents work or cook. 🏠



For more photos and design inspiration, go to bestinamericanliving.com or follow the blog for stand-out homes and communities across the United States.

The bedroom... is where you can heat things up, even on a Saturday morning.



Napoleon's Hot Spots Research Study revealed how
desire for a fireplace in the master bedroom has increased by

175%

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REMODEL OF THE YEAR

Cape Cod Revived

By Ken Berry



PROJECT TEAM

ARCHITECT RMS Architecture, Clemson, South Carolina

BUILDER The Berry Group, Six Mile, South Carolina

LANDSCAPE ARCHITECT Earth Design, Pickens, South Carolina

PHOTOGRAPHER Accent Photography

A beloved family home gains new life and function

It is a rare occasion, and a delicate one at that, to remodel a childhood home. Two sisters were planning to retire and return to live in the house that their parents had built in 1958. The midcentury traditional, Cape Cod-style house was full of cherished memories and sentiment, but was not suitable for today's lifestyles and large family gatherings. The challenge was to bring the 60-year-old house into the 21st century, while keeping it recognizable and feeling like home.



Enlarged windows in this private, two-story retreat give the owners a feeling of being outdoors, even on days when the weather keeps them inside.



Two additions to the rear of the house surround a new courtyard. The bedroom wing has a wall of French doors on the patio side, providing garden views all day.

Typical of its time, the house had two bedrooms on the main level, two upstairs in the attic, a small kitchen, steep staircases, smaller windows, and few visual connections between spaces. The house had plenty of floor area, but did not appear to be spacious. Also typical, the floor plan was not barrier-free, and so aging in place was an important design consideration for the remodeling.

The interior was stripped of the original, skim plaster-coated walls so the house could be rewired. Sagging floors were leveled, ductwork was replaced, and asbestos siding was removed. Interior walls were opened up and windows were enlarged. An extension to the side wing sunroom and a concrete sun deck over the carport were removed, restoring the house's original footprint.

The staircases were removed and reoriented to be code-compliant and easier to climb. The new stairs are now design feature elements, with custom-designed and crafted wood railings and newels. Large windows provide daylighting for the stairs, where lighted art niches and step lights illuminate the stairs at night. The rear stair serves as the main, day-to-day entrance to the house, and so, the new

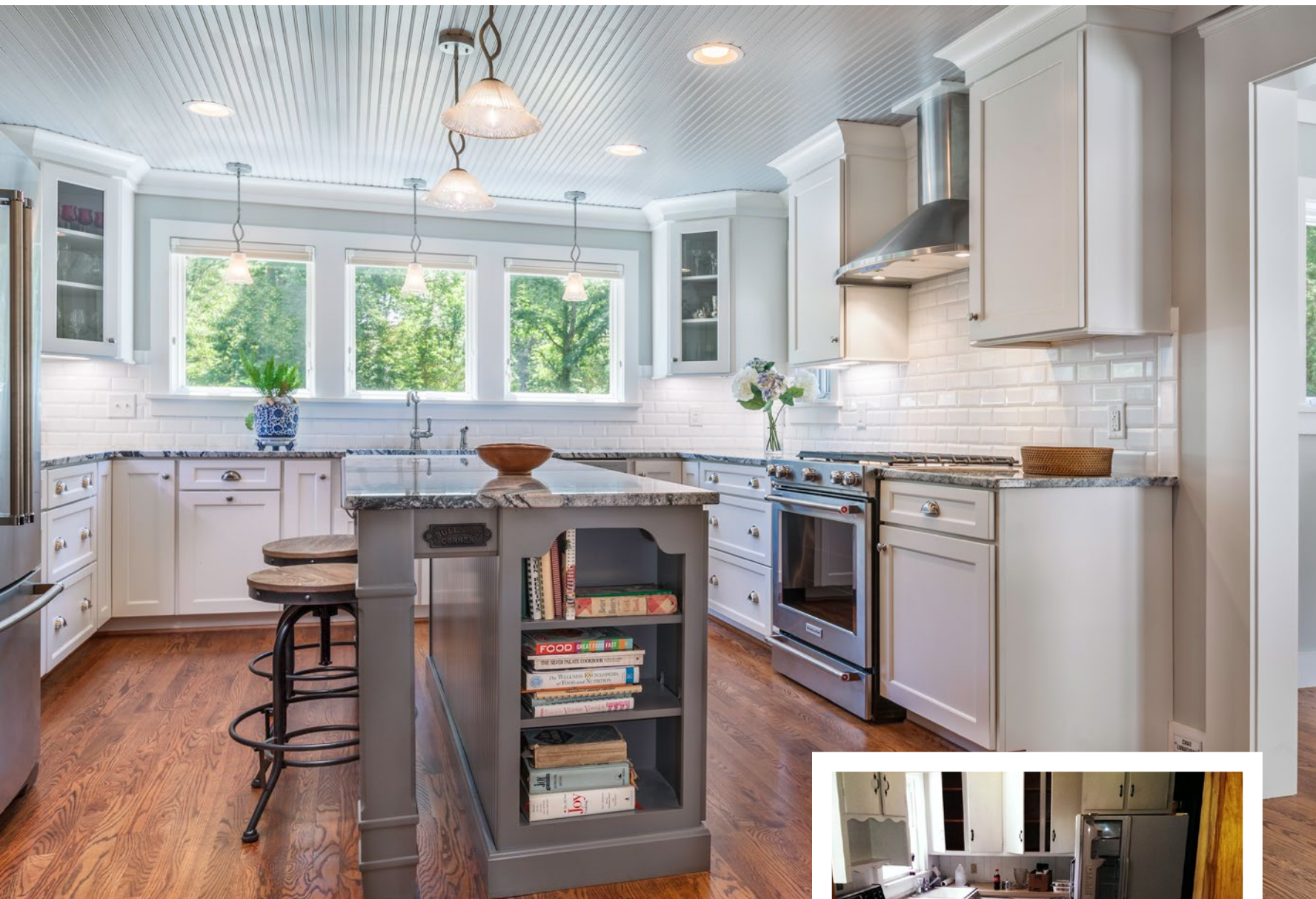


The new staircase is easier to climb than the original. The custom railings and newels are a featured design element of the house. The under-stair lighted art niches add subtle lighting to the stairs for safety. Note the closet door to the right of the stairs; it is one of several that were preserved, restored and rehung throughout the house.

stairs wrap around a pair of stacked closets big enough to accommodate a future elevator.

The existing kitchen was completely removed; a new kitchen was built in the side wing and is bathed in daylight from morning to evening. Laid out for several people to work or gather, the U-shaped kitchen is fully open to, but aside from, the traffic between the day room, dining and living rooms. The white Shaker-style cabinets, farm sink, and soft grey beaded ceiling provide a comfortable feeling, while the white tile and grey granite tops gleam in bright cleanliness and efficiency.

The former kitchen location became a new dining space, opened up to the living room by means of a new, clear-span beam. The original wood plank paneling was removed, restored and replaced in the living room to preserve the look and feel of the main family gathering space. Also, a custom-designed and crafted fireplace surround and mantel were added where none had existed before. Enlarged windows provide ample daylighting and



the dimmer-controlled, recessed ceiling lights provide just the right amount of evening illumination.

Besides the wood plank paneling, an especially unique feature of the original house were several built-up, X-braced, interior doors. All were preserved, restored and rehung in the areas of the original house.

Barrier-free accessibility and today's lifestyles go hand in hand as two additions to the rear of the house surround a new garden patio courtyard. A new, vaulted den-day room on the south side features accent panels of the original wood plank paneling, bringing the feeling of the old house into the new.



The new kitchen was designed to accommodate several people. The orientation of the space, enlarged windows, light colors and lighting provide ample illumination. The original kitchen, below right, was removed and replaced with a new dining space.



A new den-day room features accent panels made from wood plank paneling from the original interior to help connect the old house with a new space.

The new wing to the north has bedrooms, handicap-accessible baths with roll-in showers, and a laundry room. The bedroom wing hallway has rooms on one side and a wall of French doors on the patio side for daylighting and garden views all day. The hall terminates at a private reading retreat tower, separate from the bustle of the house while enjoying the garden views in a quiet, peaceful setting.

The completed project is a remarkable transformation and rediscovery of a neighborhood house that had faded into the scenery and often was passed by unnoticed. The new landscaping, front porch and contemporary styling present a smart and welcoming street presence,

“The outdoors is important to us, and this house allows us, in a sense, to ‘be outside’ without getting cold and wet.”
—Elizabeth, one of the clients

while the additions toward the rear preserve the comfortable scale of the house along the streetscape. The family house is still recognizable as home, but with a fresh and lively expression.

One of the sisters, Elizabeth, sums it all up very well by saying, “After having lived in the house for a year, I have noticed that I don’t have a favorite room. One of my friends, who was here for a

party, remarked that there was not a bad seat in the house. Everywhere you sit there is a pleasing view. The outdoors is important to us, and this house allows us, in a sense, to ‘be outside’ without getting cold and wet. I also like how the old was merged with the new; the additions are not obvious. It’s as if the old house simply grew a little bit more square footage.”



Ken Berry is founder of The Berry Group, a custom home builder based in Six Mile, South Carolina.



From the original kitchen, the team removed wood plank paneling, which was restored and replaced in the living room. The fireplace surround and mantel were a custom addition.

How New Homes Have Changed

By Aaron Ugalde



COURTESY OF CHARTER HOMES

1975
to
2015



DOUG PETERSEN



ZAN MADDOX



JEFFREY ARON PHOTOGRAPHY



ASHLEY AVILA PHOTOGRAPHY

Houses have gotten bigger, lots have gotten smaller, and thankfully, nearly everyone has air conditioning now

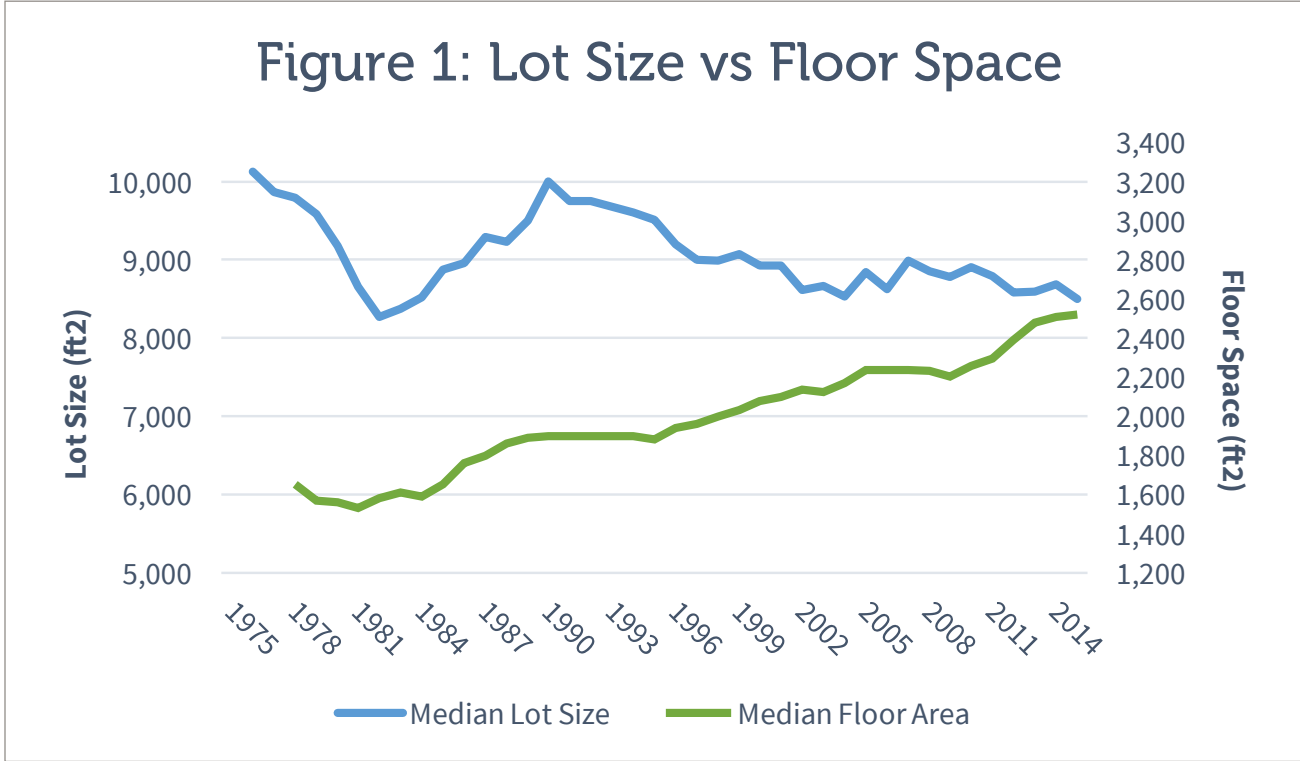
Trends in what goes into a new home should be of interest to all those in the home building industry, and a historical perspective may provide a useful basis for sizing up the needs of current buyers and anticipating what lies ahead. The Census Bureau has tracked [characteristics of new single-family homes](#) in a consistent way since the mid-1970s. Much has changed since then.

Fundamental characteristics include the size of the home and the lot it sits on. Most of the items considered in this

article are based on [new single-family homes completed](#) in a given year, but lot size is based on [new single-family homes sold](#) because the Census Bureau only collects information on lots if the homes are built for sale.

BIGGER HOUSES, SMALLER LOTS

In general, lot size and floor space have trended in opposite directions since 1975 (**Figure 1**). Median floor space has grown at a relatively consistent rate and without much variation. Median lot



KARL MOSES

New single-family homes have gotten steadily larger since the mid-1970s. Lot sizes have fluctuated over time; today's median lot size is considerably smaller than it was 40 years ago.

size, on the other hand, has fluctuated considerably but is currently considerably lower than it was in 1975.

There was a steep decline in the median lot size from 1975 to 1982. This was a period when a global economic recession impacted much of the developed world. The United States experienced high unemployment combined with a high rate of inflation. The sharp decline in lot size correlates

with this period of economic turmoil, as the trough of the recession in 1982 corresponds with the lowest median lot size in the graph.

When the overall economy recovered after 1982, the median lot size reversed course and began increasing until 1990. In 1990, the median lot size reached the highest it had been since 1976. After that, the median lot size decreased steadily from 1990 to 2004, even though the



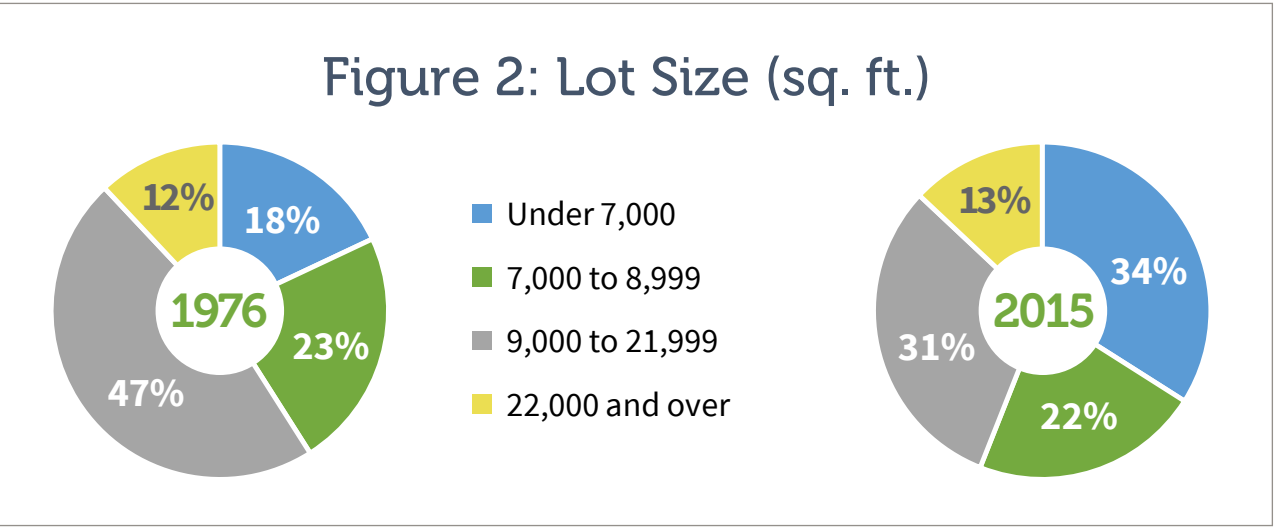
In 40 years, the average size of a new, single-family home increased by more than 40 percent. The percentage of homes with four or more bedrooms more than doubled.

overall economy and the housing market was quite strong during much of this period. Since 2004, the median lot size has remained predominantly steady, with relatively minor year-to-year fluctuations.

Figure 2 compares the distribution of lot sizes in 1976 to the distribution in 2015. Only 18 percent of new

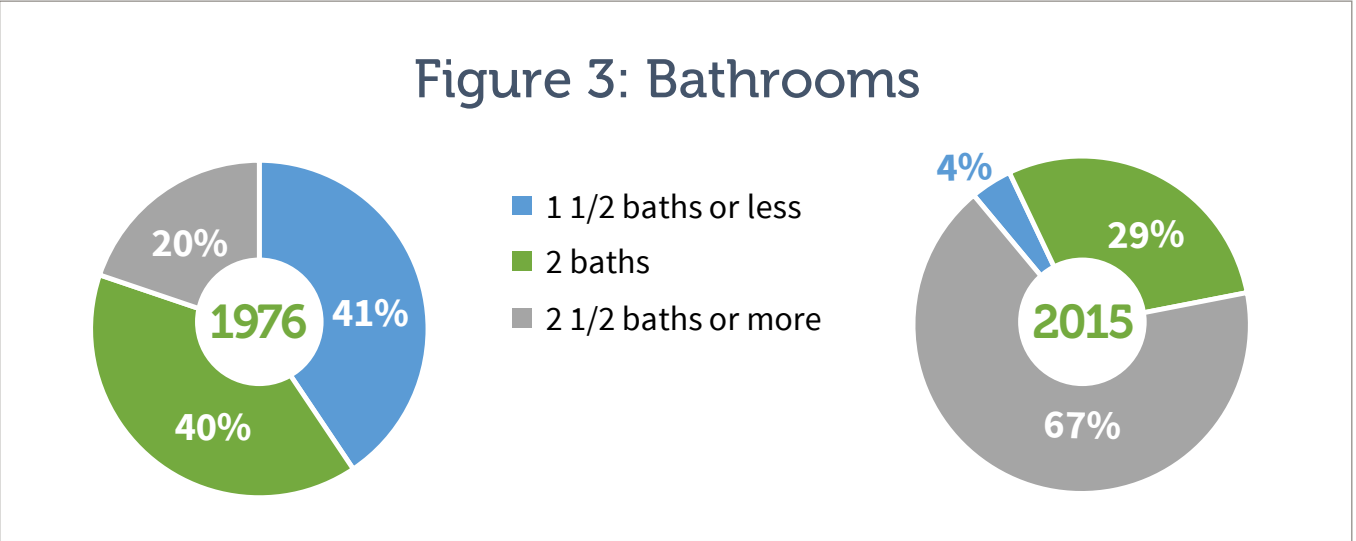
single-family houses sold in 1976 were built on lots under 7,000 square feet, but by 2015 that percentage had increased to 34 percent. An acre is 43,560 square feet, so 7,000 square feet is about one-sixth of an acre. (For reference, the area of a standard football field between the goal lines covers about 1.1 acre.)

Figure 2: Lot Size (sq. ft.)



DOUG PETERSEN

Figure 3: Bathrooms



Meanwhile, the percentage of new single-family houses sold that were built on lots in the range of 9,000 to 21,999 square feet decreased from 47 to 31 percent in that same time frame. This range is roughly one-fifth to one-half an acre.

BATHROOMS, AIR CONDITIONING LEAD LIST OF VALUED FEATURES

Unlike lot size, median floor space has trended upward without any significant instances of deviation. The trend slowed or retreated slightly during recessions. Over the long run, though, the market has



The most common lot size for a new, single-family home is now under 7,000 square feet.

ZAN MADDOX

Proofs & Truths

tended to favor larger houses. Although important, size is not the only feature that matters to home buyers. [NAHB research](#) has shown that a full bathroom adds more to the value of a home than virtually any other physical feature. So it's not surprising that the number of bathrooms in new single-family houses has also increased significantly in the last four decades (Figure 3).

The difference between the distribution of bathrooms in new homes in 2015 versus 1975 is most obvious at the extremes. The percentage of houses with 1 ½ bathrooms or fewer was 41 percent in 1975, and by 2015 that was down to just 4 percent. According to definitions used by the Census Bureau,



JOHNSON PICTURES, INC.

A full bathroom adds more to the value of a home than nearly any other physical feature. In 2015, nearly 40 percent of new single-family homes had three or more baths.

a full bathroom has a flush toilet, either a bathtub or shower, a sink, and hot and cold piped water. A half bathroom has hot and cold piped water, plus either a toilet or bathtub/shower, but not both. At the opposite end of the spectrum, the

percentage of houses with 2 ½ bathrooms or more was 20 percent in 1975, and by 2015 it was 67 percent of houses. Figure 4 provides some perspective on how this trend developed over time.

Figure 4 also plots the incidence of air conditioning in new homes over time. As the figure shows, while air conditioning has become largely standard in the modern home, that was not the case in the mid-1970s. According to the census data, only 46 percent of the houses completed in 1975 had AC. Now fast forward to 2015, and 93 percent of new single-family houses have AC.

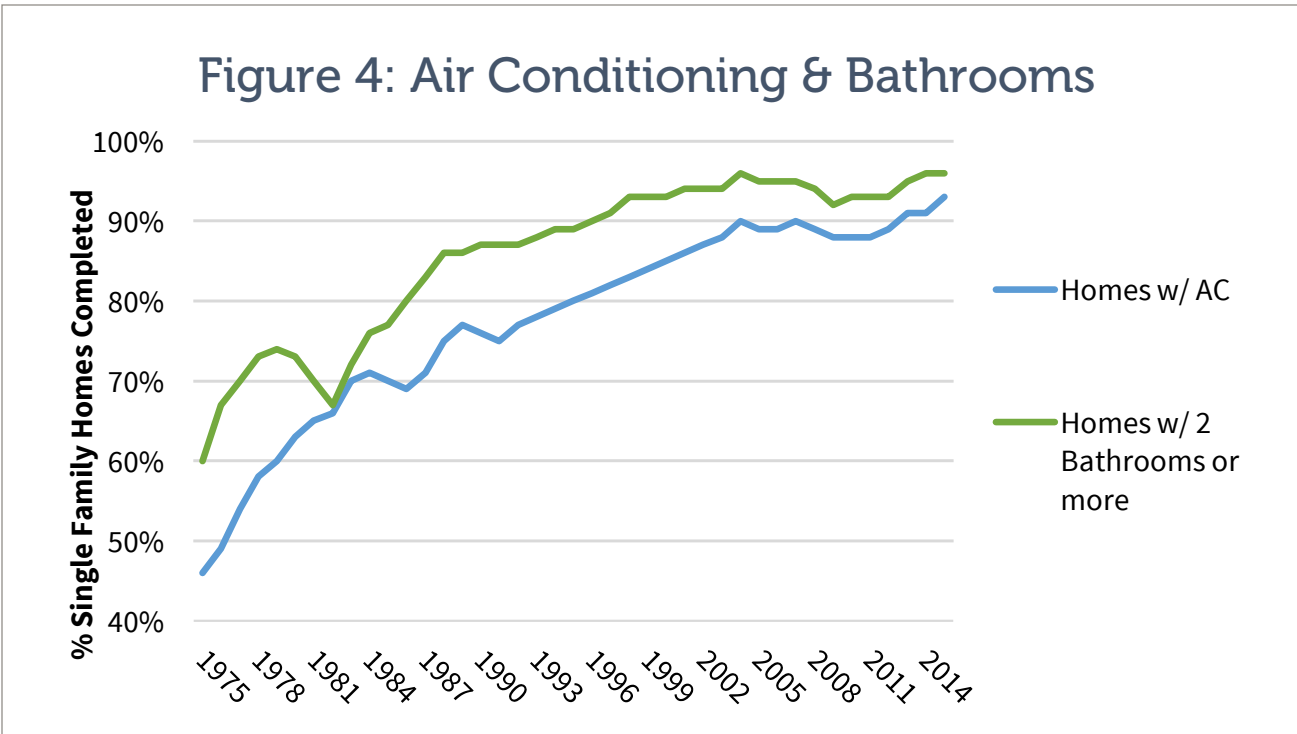
The majority of the growth occurred between 1975 and 2004, when the share of new single-family homes built with air conditioning first hit 90 percent. Since 2004, the trend has plateaued and the

Figure 5: Characteristics of New Single-family Homes

Single-family homes completed in	1975	2015
Median square feet	1,535	2,467
Average square feet	1,645	2,687
Share with air conditioning	46%	93%
1 1/2 baths or less	41%	4%
2 baths	40%	29%
2 1/2 baths	20%	67%
3 baths or more	n/a	38%
2 bedrooms or less	14%	10%
3 bedrooms	65%	42%
4 bedrooms or more	21%	47%
Full or partial basement	45%	27%
Slab or other types	35%	58%
Crawl space	20%	15%
1-car garage	14%	6%
2-car garage	53%	61%
3+-car garage	n/a	24%
Carport	9%	1%
No garage or carport	24%	9%

share of new homes built with air conditioning has hovered around 90 percent, possibly indicating that the market has reached a natural saturation point.

Figure 5 provides a quick snapshot comparing additional characteristics of homes built in 1975 and 2015. ▲



Aaron Ugalde served as an intern at the National Association of Home Builders in 2016.



Managing Stormwater Runoff

Wichita creates an innovative program
to protect the environment and
preserve developable land

By Christopher M. Bohm, PE

Large-scale stormwater runoff treatment solutions in agricultural areas upstream of the city were found to be very effective in reducing sediment in area waterways.

Stormwater runoff on development sites in the Wichita market is governed by the Environmental Protection Agency's Clean Water Act, and locally by the Kansas Department of Health and Environment and city stormwater regulations. Runoff during and after construction must be treated to prevent sediment-laden waters from traveling offsite.

Currently, newly developed and redevelopment sites 1 acre or larger must provide physical solutions for controlling and treating runoff (permanent best management practices, or BMPs), including options such as stormwater ponds, grass-lined swales and proprietary inlets that filter sediment. However, these measures can be costly. Proprietary inlets are expensive, and

other BMPs, such as stormwater ponds, utilize otherwise developable land.

The city of Wichita, its stormwater advisory board, design consultants and the development community set about to find a better, more effective solution. Using research from Kansas State University, it was determined that large-scale, offsite BMPs, such as no-till farming and streambank stabilization, were far more effective in reducing sediments in waterways than the current 'spot treatment' regulations.

Using this information, the advisory board developed a new offsite BMP program for new and redeveloped sites,

which was accepted by the Kansas Department of Health and Environment as a voluntary option to the construction of physical, permanent onsite BMPs. It does not, however, relieve developers from runoff peak and volume control requirements.

Developers can participate in the program at a rate of \$19 per acre, per year, which is billed in perpetuity as a line item on their water bill. Administered as a partnership between the city of Wichita and the Kansas Watershed Restoration and Protection Strategy program, fees go toward construction of BMPs on agricultural lands offsite and upstream of Wichita. Utilizing this model reduces much of the capital costs associated with development and provides double the annual tonnage of sediment prevention into the local waterways.

The offsite BMP program, adopted by the Wichita City Council in June 2016, is believed to be the first of its kind in the nation. For more information on the program, visit the city of Wichita's website at Wichita.gov and search for Offsite BMP Program.

Christopher M. Bohm, PE, is president of Ruggles & Bohm, a civil engineering and surveying firm in Wichita, Kansas.



Kansas State University researchers found that stormwater runoff best management practices implemented in rural areas worked better and cost much less than those implemented onsite or offsite in urban areas, such as this hydrodynamic separator.



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MADMODERNFUN

Incorporating midcentury modern into interiors requires a balance between traditional and contemporary details

What is it about midcentury modern that has the world of design buzzing? It could be shows such as *Mad Men* or even good, old-fashioned nostalgia. The ultimate driving force is that midcentury modern design has a blend of unique, retro elements paired with updated features that project personality to stand out among the mass-produced market of today. It's important to understand that buyers don't want to live in a time capsule (we are still trying to forget about those avocado appliances), but they crave the fresh and reflective look that midcentury modern has brought to our society.

To achieve the look of this timeless trend, there are a few key design considerations. A fine balance of mixing traditional with contemporary brings to life the details of this design, which has been dubbed "moderated modern."

This design prides itself on cleaning up the clutter and focusing on a few architecturally stunning pieces. Sometimes it's the simple things that make the biggest statement, and with this style, less is truly more!



Tools & Techniques

Here are eight design elements to emphasize when adding midcentury modern touches to a home's interior.

1 LET THERE BE LIGHT!

Bold lighting is a must-have feature to bring buyers back to this artistic era! Take a step into any midcentury modern home, and surely there are impressive, modern marvels hanging from the ceiling, lighting up a sleek dining room table or showcasing an eye-catching art piece. Unique pendant lights and fixtures are not only fully functional, but also act as art in midcentury modern-styled spaces. When it comes to the actual aesthetics of the light, brass or polished chrome (think Sputnik lights) creates sleek, stunning finishes when paired with bold-hued bases or striking embellished chandeliers. And lose the lamp sets! Let a buyer's personality and preferences shine with one-of-a-kind lighting options, even if that means mismatching.

2 ART STANDS STRONG

Staying in line with "simple makes a statement," minimal art pieces can pack a punch. By incorporating a few large, impactful pieces, art comes to life in midcentury modern design. One or two artistic metal wall sculptures or a colorful graphic image on canvas can achieve the vintage-inspired style that attracts potential buyers.

3 BRING BACK WOOD

The defined details of real wood that graced the high-quality furnishings of the '50s and '60s are continuing to come back in multiple areas of design. Alongside furnishings, accent walls and accessories are all paying tribute to the stunning statement that warm shades of wood create. Look to set the stage with clean lines or biomorphic forms of teak, walnut, oak or rosewood to embrace the midcentury modern feel.



COURTESY OF LITA DIRKS AND CO.

4 DRINKS, ANYONE?

A few standout accessories are sure to attract the attention of the midcentury modern fan. On every episode of *Mad Men*, the cocktail culture is almost as important as the show's plot, hence the re-emergence of the bar cart. Whether built-in or a cart, a designated area for mixing drinks is a fun way to bring back the era. Along with spirit-focused spaces, a shag rug is a creative design idea to bring in the midcentury modern style, while giving the home a comforting and cozy charm.

Lastly, mirrors, mirrors, mirrors! Midcentury modern design prizes the use of mirrors, not only on accessories, but on accents walls and backsplashes to make a space look bigger as they reflect light into a room or highlight the height of a ceiling. It's hard to imagine this artistic era without the use of a stylish sunburst mirror.

A large, dramatic canvas is an example of the artistic sensibilities of midcentury modern. Look for furniture with strong, clean lines.

5 EMBRACE PATTERNS AND TEXTURES

Graphic patterns and midcentury modern are a match made in heaven! In a retro-inspired space, a neutral palette allows bold patterns and textures to shine in features such as wallpaper, rugs, pillows, furniture and accessories. Tie dyes, atomic sunburst patterns, macramés, velvets and leather fabrics are imaginative design solutions that applaud this era. Just make sure not to overwhelm the eyes with a clutter of contrasts.

7 ARCHITECTURAL ELEMENTS TAKE CENTER STAGE

Look beyond accessories and furnishings, as the thoughtful details in architectural elements brings midcentury modern style to fruition. The fireplace was a focal feature of many homes in the '50s and '60s. Try adorning fireplaces with floor-to-ceiling, natural stone walls to create tons of texture and contrast in materials.

Along with a fabulous fireplace, an open, airy floorplan complemented with clean, crisp lines and cantilevered roofing celebrates the “less is more” mentality of the midcentury modern design. These simpler lines showcase the natural beauty of the architecture and strong statement pieces within a space. A smooth continuation between indoors and outdoors is paramount to midcentury modern architecture. Think soaring, full-length windows (or large “picture windows”) and an extension of flooring materials to create a striking, seamless flow from indoor to outdoor spaces.

8 COLORS BRING IN CREATIVITY

Embrace the era of turquoise, pink, mustard, avocado and tangerine! When used modestly in furnishings and accessories, these classic colors can create allure rather than feeling dated and drab. Also, a few significant ideas to consider: Keep the walls white or neutral, as this allows statement pieces to shine, and make sure not to overlook the importance of the muted hues that are trending in 2017.

The history and desire for the midcentury modern design movement is not showing signs of stopping. On the contrary, the artistry and architectural innovations of that time are becoming ever more popular. Turn browsers into buyers by embracing the minimalist lure of midcentury modern and portraying potential home owners' personality and preferences. Just remember, less is more in this spectacular style, and don't be afraid to have some fun! ▲

Lita Dirks is owner and chief executive officer of Lita Dirks & Co., an interior design and model merchandising firm in Greenwood Village, Colorado.



Midcentury modern prizes the use of mirrors and pops of bold color against a neutral palette.

6 FURNITURE AS THE FEATURE

Again, simple is chic when it comes to this style, so furnishings should have clean lines with a contrast in patterns and textures. Pieces embellished with wood, era-inspired legs and bold graphics and patterns embrace the modest, yet marvelous style that is midcentury modern. Try to keep a majority of the furnishings neutral with a few that are stand-out personality pieces. A great way to bring in the creativity that buyers crave is to skip past the mass-produced furniture pieces and shop at flea markets or vintage shops!



In midcentury modern design, less is more, both in minimalist furniture and open floorplans.

LOOKING BACK, LOOKING FORWARD

By Yu-Ngok Lo, AIA, CDT, LEED AP, NCARB

The enduring appeal of midcentury modern architecture

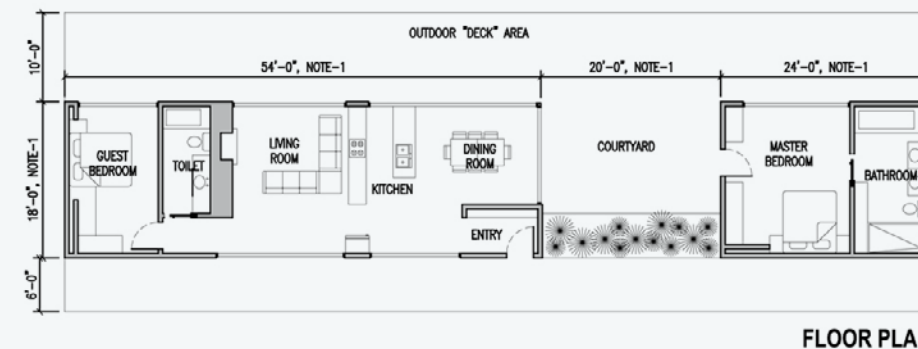
Midcentury modern architecture refers to the mainstream American residential style from the 1930s to the 1960s. It emphasized the interweaving relationship between indoor and outdoor, a living style that brought nature closer to home. It was also the beginning of a shift to a more simple and honest architectural language. Some of the masterpieces created by renowned designers Richard Neutra and John Lautner greatly influence today's design professionals.

Midcentury modern ideas and architectural elements still appear in many of the contemporary houses we see today. Here are some reasons why the style has endured in the 21st century, along with tips and tricks you can follow. 🏠

Yu-Ngok Lo, AIA, CDT, LEED AP, NCARB, is principal/owner of YNL Architects in Culver City, California.

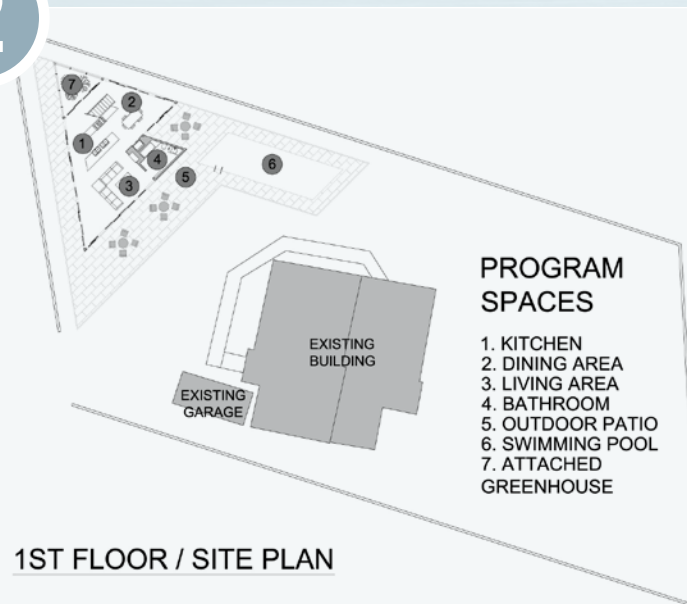


OPEN FLOOR PLAN



1

2



3

The open floor plan design has many advantages. It maximizes the use of the house's square footage by minimizing partition walls, which enables a smooth, uninterrupted flow. It also accommodates large events without sacrificing the flexibility of the space. Combined with the use of large windows, open floor plans allow natural light to fill the entire house (see **Figure 1**).

This design option is especially useful for buildings with unusual shapes due to site constraints. **Figure 2** shows a triangular-shaped building that would not have been possible

without an open floor plan. The kitchen, dining and living areas on the first floor are interconnected both physically and visually. This allows a flexible and efficient use of the available space.

The "openness" of a floor plan design is not limited to the horizontal. **Figure 3** shows a dining area that opens to the second floor and to the roof skylights. This dramatically increases the amount of natural light in areas without adjacent windows. The most convenient way to utilize natural light is at the vertical circulation. The opening for the stair, for example, can be enlarged to serve this purpose.

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STRUCTURAL HONESTY (EXPOSED STRUCTURE)

Exposed structure can sometimes reduce construction cost by eliminating the need for furring and/or additional drywall finishes. The success of exposing structural elements partially depends on how well the designer/architect understands construction methods. Materials such as the types of lumber, plywood, concrete form ties, fasteners and finishes must be clearly specified in the construction document so the contractor can comply with the aesthetic requirements. Meanwhile, the contractor/builder will need to be aware of the aesthetic intent to execute that vision.

Exposing steel structural elements and concrete walls can be tricky. In the case of a concrete wall, the specific form ties, plywood grades (form work) and other materials must be clearly identified prior to bidding. For structural steel, the architecturally



exposed structural steel specification is sometimes used.

The contractor must be made aware of these requirements during the bid since they can significantly impact the cost. When detailed correctly, exposing certain structural elements can create a very interesting and unique aesthetic quality that works particularly well with the overall architectural language.



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EXTENSIVE USE OF FULL-HEIGHT WINDOWS

The latest low-e, double-pane glass and thermal frame technologies revived the extensive use of full-height windows. Without these technologies, this would not be possible in states with stringent energy requirements, such as California. The amount of glass used is also critical in areas with extreme winters. Designers and energy consultants must find the right balance between its aesthetic value and the energy efficiency of the house.

The choice of glazing units also matters. The glass unit could be insulated or laminated, and the type of low-e coating and color should also be carefully considered and communicated to the builder. Besides allowing for ample natural light, full-height windows have additional advantages. The use of sliding glass doors diminishes the boundary between indoor and outdoor and creates a vibrant space for large gatherings.



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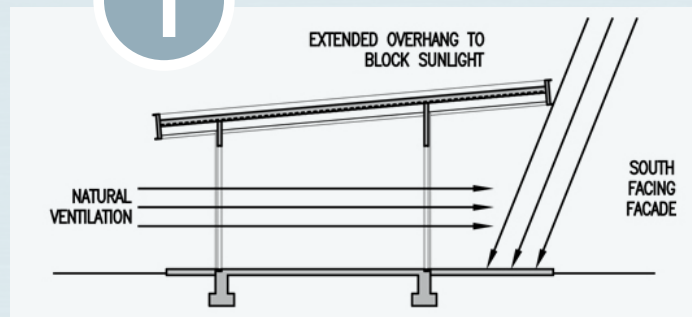
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2



1



LARGE OVERHANGS

For decades, designers have used large overhangs as a passive solar design strategy. They continue to be one of the most cost-effective ways to maximize natural daylight while controlling a home's heat gain during the summer (see **Figure 1**). They are especially important in hot, arid climates, such as the deserts of Southern California. Extended overhangs help protect doors, windows and foundations from severe weather (**Figure 2**). They also create a covered area for the outdoor living space (see **Figure 3**).

The effectiveness of large overhangs depends on the designer's understanding of the existing site characteristics and the climate in which the project is located. There are different ways to incorporate the extended overhang in a contemporary design. In lieu of the traditionally bland choice of vented stucco soffit, the structural system could be exposed to achieve a more simple and honest structural aesthetic. However, this choice makes protecting exterior exposed structures from rust a must. High-performance paint or wood-protection coating can be used depending on the project location.

3

