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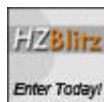
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## Builders Embrace Universal Design

*For Builders Willing To Leave Their Comfort Zone, Universal Design Can Make Life Better For Everyone*

**By Ann Matesi, Contributing Editor**

January 1, 2007

**Custom Builder**

Inspired by an appliance manufacturer's display kitchen labeled "Universal Design" at an industry trade show, custom builders Bill and Judy Slease returned to their Dallas market determined to reassess the way they built homes for their upscale, empty-nester clients. The mock-up kitchen they saw featured traditional appliances reorganized into an unconventional layout for the time that made them more convenient and safer for a family to use.

Eager to incorporate this out-of-the-box approach into their new construction and remodeling projects, the couple began to collect all the information they could find on building homes that user-friendly.

That was 10 years ago. The Sleases, co-owners of Tapestry Custom Homes in McKinney, Texas, happen what was then a fledgling but far-reaching concept that results in a home that is functional, accessible and for a wide range of users. Just as importantly, a universally designed home adapts to the changing needs owner over time.

The term was coined by the late Ron Mace, who founded the Center for Universal Design at North Carolina University in 1989, still the leading resource for research and information on the subject.



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universal design into their own home, which they completed in the fall of 2005 and use to educate others c practicality of the concept. Among its myriad universal design features, the Tuscan-inspired two-story feati free entry, 3-foot-wide doorways throughout and an elevator.

### Something for Everyone

Susan Mack, a nationally recognized, award-winning universal design consultant based in Murrieta, Calif., universal design with uniting healthcare, design and building professionals to create homes that accommo people of all ages and abilities. "A home that is built based on the principles of universal design accommo only diversity in general human function but also the changes that occur as the result of aging, illness or in says.

Fundamental elements of universal design include creating a barrier-free accessible entrance to the home doorways and hallways; placing key living areas such as bedrooms and fully accessible bathrooms on the and creating a plan for handling the vertical circulation in a home that is more than one level, says Richard senior project manager for the Center for Universal Design.

"Taken individually, none of these things is particularly dramatic and may go virtually unnoticed by someor not looking for them," Duncan says. "But together, they can make a huge difference in terms of the functio home for everyone on a day-to-day basis because strollers come and go more easily, groceries can be un more easily, and Uncle Charlie, who can't walk, can visit more easily."

### Who Builds Using Universal Design?

Custom builder Randy Rinehart of Rinehart Custom Homes, Charlottesville, Va., describes universal desig steadily growing movement beginning with the custom building community. "The custom home client is ty affluent buyer who has the cash to downsize their home while still upping the quality. They have the ability choices about what features will best meet their needs and desires that the production home buyer gener not."

It's flexibility with price — and therefore the ability to choose features that meet homeowners' needs and d that makes the custom builders' clients the ideal candidates for universal design, says Bill Slease. "Small t poised on the cutting edge of the market right now, but the big guys will get on board as their buyers beco familiar with universal design features and begin to ask for them."

Snellville, Ga.-based builder Roy Wendt is bridging the gap between custom and production housing by in universal design features into every one of the \$400,000-and-up, semi-custom homes his firm builds in ag communities of the Atlanta metro area. "The public's response is overwhelmingly positive. The concept re: up the market to smaller builders like myself and helps us establish our own unique branding."

"I think that in another 10 years the concept of universal design will be the standard for the industry, but for now, the front runners are pretty much on their own," says Slease. "It is up to them to take the initiative to make a change in the way they build their homes. To successfully incorporate universal design into their products, today's builder needs to have a passion for the subject. The smart builder will recognize the significance of the niche and will make a market out of it."

Changing takes commitment, says Rebecca Stahr, president of the Universal Design Alliance, a non-profit corporation founded in 2003 to promote universal design. Making that decision "is not always easy to do. Those that do, however, have a tremendous opportunity to connect with a significant emerging demographic. They have to assess themselves and decide where they want to be in the next 5 to 10 years. This gives them the opportunity to be a leader by crafting solutions and then set about implementing them."

### Target: Baby Boomers



Doorways should be at least 32 in

Intuitive builders have zeroed in on the aging adult population, making it their primary focus for universal design and recognizing the market potential. The number of Americans more than 50 years old will reach 100 million by the year 2010, according to NAHB's 50+ Housing Council. Baby Boomers are healthier, more independent and more active than their parents and prefer to stay in their own age in place longer than before.

to accommodate the passage of a w  
Eliminating a conventional threshol  
facilitates access between rooms.

Rinehart, 2005 chairman of the NAHB 50+ Housing Council, built his first universal design home as a spec-t theme model in 1999. "We called together a focus group of older buyers to find out what was important to th then used these ideas to design the home from the perspective of the aging baby boomer. I could see that th an important emerging market that was not being addressed by other builders in my area. It gave me the op to demonstrate to potential clients that I'm doing something different from the rest."

Stahr points to a study conducted by AARP that cites 89 percent of homeowners want to remain in their own as they get older as their needs change. "The problem is that many homes are designed in such a way to pr that," he says. "We have come to realize that there is a better way to design and build homes for people of a and abilities and incomes. The focus of universal design is to demonstrate that people can have a choice in where they want to live."

Incorporating universal design features into homes for today's baby boomer population receives the most at from custom builders these days because of economics, Stahr says. "Builders are simply addressing their la most profitable demographic. And, in reality, our aging population serves as a great example for demonstrat can benefit from universal design.

"But it is important to keep in mind that you could just as easily show how well these same features work for everyone, including a family with young children."

#### **Advocates for Change**

Encouraging clients to incorporate universal design can be a challenge. Slease finds providing examples to be the best way and uses his own home as a model for prospective clients. "It is a very difficult concept to articulate verbally. If they have something physical, something they can visualize and touch, it is much easier to get them to understand and appreciate the concept.

"We want to get our clients to become forward thinkers and to recognize that incorporating universal design features into new construction is cheap — pennies on the dollar — compared to going back and having to remodel later on."

Rinehart incorporates suggestions for universal design into his presentations for potential clients. However, he says, "you still need to have someone who wants to go in that direction. If they are not interested, I do not ever push it."

"We approach the subject with our clients on a case-by- case basis," says Kent DeReus, AIA, managing principal with Orren Pickell Designers and Builders, a Lincolnshire, Ill.-based design/build firm that specializes in high-end residential construction and remodeling. "They are typically building their last or dream house and recognize that there are going to be changes to their lifestyle in the future. About 50 percent of them incorporate some elements of universal design into their homes with about one-third of those taking those to a higher level."

Today's open floor plans lend themselves particularly well to universal design, says DeReus. "This makes it easier to integrate these concepts into the normal design process. A good way to do this is to use details that are beautiful and functional such as strategically positioned moldings that are also handrails, or custom interior doors on elevators. It is really about using what is already there in



sensitive way."

### Universal Design and the Building Team

Universal design is at its best when it becomes invisible, says Wendt: "The biggest compliment that I get from a potential buyer is that they did not even notice the universal design features in a home."

To accomplish that, he recommends getting everyone in the building process on board from the start. "I really recommend that a builder work closely with a qualified universal design consultant. They have so much knowledge about the subject that they have already invented the wheel for you."

"Everyone on the building team's job is going to change a bit because of universal design," says Mack. "I try to be the one who synthesizes these principles into the design and building specifications that apply to every member of the team so that I can help to implement them into each of their roles."

"For example, the engineer who is going to grade the building site has to understand the objectives of universal design so that it will be prepared with the proper drainage and slope to allow for maximum mobility of people walkers or wheelchairs. It is very important to take into account the impact that universal design will have on the architect, the subcontractors and even the interior designer."

### Universal Designs, Astronomical Costs?

Incorporating universal design into a home does not have to significantly increase its cost. "We are not talking about huge dollars here," says Rinehart. "But that can change depending on the extent to which you take it. If you add an elevator to a home you have to take into account that it will require a significantly higher investment."

Stahr estimates universal design adds about 2 to 4 percent to the cost of a new construction home compared with 30 percent for a remodel.

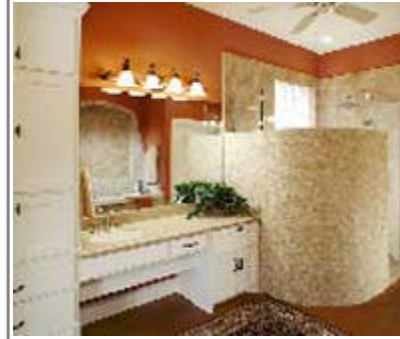
"You can build an 850-square-foot apartment and implement the principles of universal design as well as if you were building a 5,000-square-foot custom home. It is really the priority of how space is planned that affects the costs involved," says Mack. The same holds true for product and materials selections. "Universal design generally does not control the price range for the products that a builder selects. That is more dependent on the type of products and the vendors that are used."

In addition, universal design doesn't require a builder to use products specifically labeled as such. "All kinds of conventional products lend themselves to universal design. What is more important," says Mack, "is to keep the specific goal that you are trying to achieve with that product. If, for example, a builder is interested in simplifying the operation of lighting, selecting rocker-style switches over conventional flip switches makes sense. I try to work within the product vendors that the builder regularly uses to find the best product within that line that meets the objectives that I'm trying to achieve."

### Coping with Challenges

Incorporating new principles doesn't come without challenges, including resistance.

"The building community battles against the negative consumer perception that universal design is all about crumbly wooden ramps and grab bars in bathrooms all the time," says Duncan. "We recommend a builder start with features that are virtually invisible, such as stair entrances, wider hallways and wider doorways. If things are scaled



A roll-in shower need not compromise beauty and drama of a master bath. Additional blocking should be incorporated into the walls around the tub, toilet and shower.



When done right, universal design features in a home are not immediately apparent. Texas builder Bill Sleese. The fireplace living room is located off the floor and a projecting hearth to obstruct access when necessary.



The dark border provides a distinctive transition between rooms in this home without affecting accessibility. Rocker- or toggle-style light switches should be located so an adult, child or wheelchair user can comfortably use them.

properly they look fine."

"Many people still do not understand what universal design is," a Slease. "They have this negative stereotype in their mind of the institutional look of their grandparents' nursing home. To be successful they must demonstrate that their finished product looks just like a house."

"When universal design is done well," agrees Mack, "it will not be obvious or apparent."

To make that happen, builders must develop an ability to take real products and use them in more practical and accommodating ways. "It's OK to question the 'it has always been done this way' mentality," Slease.

But this means builders must step-up their game as supervisors. "Making the switch to universal design, he warns. "Raising plugs up to 22 inches high or lowering light switch heights is not difficult, nor does it add to the cost of a project, but getting your subcontractors to understand and then making sure that they deliver it, is not always so easy. Until they know that you mean it, and then become used to working with these new ideas as well, you will have to watch every element more closely, but more often and insist on changes when necessary."

Those who have made the change say the rewards are worth the effort. "Builders that are ready to embrace the concept of universal design can, for very little added expense, produce a home that is incredibly attractive and marketable because of how well it functions for the whole support of a person," says Wendt. "The home accommodates its owner instead of the other way around."

Who can argue with that?

### Go Universal

The list of universal design features, products and applications that contribute to the livability of a home is limitless. Some ideas to consider:

#### In the overall home design:

- ✦ At least one barrier-free or stepless hard-surface entrance with a threshold no greater than 5/8-inch to ensure wheelchair accessibility
- ✦ 32-inch wide doors and lever-style door hardware
- ✦ Main-floor master bedroom
- ✦ Minimum 36-inch wide hallways with 60-inch clear space turnarounds for better wheelchair mobility
- ✦ No steps between rooms on the main floor
- ✦ In a multistory home, incorporating an elevator into the plan to provide easy access to all levels. Or, stairs with closets with knock-out floors that can easily be removed later to serve as an elevator shaft
- ✦ Raised electrical outlets; lower-height, rocker-style or touch light switches
- ✦ A private bedroom or office, preferably connected to its own bathroom, which could be used for an elderly parent or future caregiver
- ✦ Easy-roll flooring
- ✦ Low-maintenance exterior finish, windows and doors

#### In the kitchen:

- ✦ 30- by 48-inch clear space at all appliances
- ✦ Multi-level work areas with a countertop accent edge that visually defines the workspace for the user.
- ✦ Wall-mounted cabinetry that's three inches lower and has ergonomic hardware
- ✦ Extendable shelving in upper cabinets, roll-out trays and lazy Susans in base cabinets

- ✍ Raised appliances — such as the dishwasher, washer and dryer — at a comfortable height for loading/unloading, preferably front-loading with front-mounted controls
- ✍ Counter-height or in-wall microwave oven with an adjoining or pull-out dish rest
- ✍ Side-by-side refrigerator/freezer
- ✍ Knee space under the sink
- ✍ Smooth-surface cooktop

#### **In the bathroom:**

- ✍ At least one bathroom that can easily accommodate a wheelchair on the main floor, preferably with a entry shower and/or a low-profile tub
- ✍ Slip-resistant flooring throughout
- ✍ Additional bracing built into the walls surrounding the shower, tub and toilet to support the installation handrails and grab bars
- ✍ Built-in shower seat
- ✍ Adjustable, hand-held showerhead with a 6-foot or longer hose
- ✍ Knee space underneath the sink and vanity
- ✍ Comfort-height toilet
- ✍ Bright task lighting

#### **Technology and Universal Design**

"The biggest thing that we see on the horizon in terms of technology for the universal design market is the home-based, remote healthcare monitoring capabilities," says Brian Post, founder and CEO of Louis Clark, residential technology provider based in Evanston, Ill. "There are so many multi-generational families living same home these days that this just makes sense."

Louis Clark is currently working with a local service provider to develop a system that can capture and transmit health data, including visual monitoring, from a patient and send the information to their physician's office or hospital without their ever leaving home.

"What is most important is that the technology and its design fit the home. We do our best to simplify home technology for the end user, particularly when the client is older," says Post. This includes single-point keys that perform a variety of functions; large, easy-to-read numbers; and simple wording.

Women account for 71 percent of those devoting 40 or more hours a week to the task of caring for elderly parents, according to a 2004 study by the National Alliance for Caregiving and AARP. "Almost 75 percent of our clients are women," says Post, "many of whom are still working but have an elderly parent or a child at home. This type of system can provide them with that additional measure of peace of mind when they are away.

#### **Get up to Speed**

It takes a very motivated builder to successfully incorporate universal design into projects, says custom builder Steve Sease of Tapestry Custom Homes in McKinney, Texas. "Not only do they have to be insightful enough to recognize the merits of universal design themselves, but they have to be able to clearly demonstrate these benefits to their clients.

"They also have to be willing to do a lot of research on their own not only to keep track of the flood of new products on the market everyday but to remain open to new applications for the use of standard materials and practices well."

Sease offers this advice for builders interested in incorporating universal design into their own projects:

- ✍ Recognize that adopting universal design practices will take a lot of effort on your part.
- ✍ Use the Internet. Builders, architects and clients can explore not only what others are doing but use it as a resource for new products — and new ideas for using traditional ones.
- ✍ Cooperate. Cooperation among the builder community is essential to spread the word, demonstrate it and exchange them.
- ✍ Attend seminars and regional and national builder's shows. Don't be afraid to interact with speakers and take their advice.

- ✍ Be willing to educate yourself first — then educate others through the process. Get certified through national associations and outside sources to keep you up to date on the latest information available and identify yourself as a leader in your market.

### **Universal Design at IBS**

Those attending the 2007 International Builders' Show in Orlando, Fla., Feb. 7–10, 2007, have plenty of opportunities to learn more about universal design by attending one or more of the numerous educational sessions that touch on the subject. Check out the NAHB Web site for the most current times and locations.

#### **Wednesday, Feb. 7**

- ✍ This Isn't Your Father's Active Adult Market
- ✍ What Boomers Want: Housing and Lifestyle Preferences of 45-Plus Households
- ✍ The 50-Plus Community Vision: It's All About Lifestyle
- ✍ Universal Design: Universal Appeal to Home Buyers and Those Remodeling Existing Homes

#### **Thursday, Feb. 8**

- ✍ Home of the Future
- ✍ How to Get Started in Active Adult Housing (series)
- ✍ Active Adult Architectural Plan Reviews (daily)
- ✍ Lifestyle Kitchens: Designs, Materials and Techniques that Guarantee Great Kitchens
- ✍ Design 2007: Residential Design Trends from the AIA
- ✍ Peter Pan Housing Design: Delivering the Forever Lifetime Home

#### **Friday, Feb. 9**

- ✍ Designing and Building Code Compliant Stairways
- ✍ Ask the Experts: Marketing Active Adult Communities
- ✍ Residential Design for the Second/Vacation Home Market
- ✍ ABCs of 50-Plus Design ... Not Your Father's Oldsmobile
- ✍ The Baby Boomer Generation — Numbers, Insights and Implications for the Housing Industry
- ✍ Ask the Experts: Active Adult Product Design: Community, Architecture, Floor Plans
- ✍ Using the Internet in a Changing Market

#### **Saturday, Feb. 10**

- ✍ Give the Market What They Want: The Future is Now!
- ✍ Thanks for the Memories: Creating Impact for Boomers and Beyond
- ✍ The Little House that Could ... Wow Boomers and Beyond

#### **Mark Your Calendar**

- ✍ NAHB's 50+ Housing Council's Building for Boomers and Beyond: 50-Plus Housing Symposium 2007 Denver, May 30 to June 1, 2007

#### **Educate Yourself**

Interested in learning more about universal design? Resources with helpful Web sites include:

- ✍ The Center for Universal Design, North Carolina State University
- ✍ AARP, Home Design
- ✍ NAHB's 50+ Housing Council
- ✍ NAHB's Remodeler's Council, Certified Aging In Place Specialist (CAPS) program
- ✍ The Universal Design Alliance (UDA)
- ✍ Concrete Change
- ✍ EasyLiving Home

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