

Universal Home *Sweet* Home

Developments in universal design are making it easier than ever to build a home where accessible features are invisible, affordable and even beautiful. The key word is “easier,” not easy. Great tools are out there, but your local builder is not likely to have them in the back of his pickup. **Don’t give up, get busy.**

B Y N A T A L E A W A T K I N S

There’s a saying among folks who build stuff: “Measure twice and cut once.” If you want to live large in the smallest, most cost-efficient space possible, you’d be well advised to measure more than twice. On wheels, in your own home, size does count. Every inch matters. You’ll pay for every square foot. Your walls will bear witness to every corner you cut. Your shoulders and fingers will get the bill for everything you “shoulda” done. Five pieces of advice may save you headaches, heartaches and hard cash.

First, get over the word “universal” in universal design.

In the simplest of terms, universal design is a set of seven principles developed to encourage attractive, intuitive products that are easier for most people to use (note: easier again). The bad thing about “principles” is that you might have to roll a long way before finding two people who agree on their interpretation.

“UD is not just another term for accessible, it’s not just about mobility and it’s not code-minimum oriented like the ADA,” says Richard Duncan, project director at North Carolina State University’s Center for



What homeowners Chris and Tiffany Daubitz like best about their home is that it looks like any other house on their block, inside and outside, yet is fully accessible.

Universal Design. But it is a great place to begin your quest for an accessible home. Plan to roll up your sleeves and focus on a universe of one — yourself — to take universal from adaptable to accessible to “works for you.”

That’s just what Chris Daubitz did in Midlothian, Texas. Injured in a motocross accident at 19, he lived with his folks after rehab, then made do in an apartment with

his wife, Tiffany, and now enjoys what the Daubitz’s call their “model home.” Last June, they moved into the two-bedroom Craftsman-style that includes a home office and attached shop for Chris’s sign-making business, Jyro Designs.

Daubitz calls it the reward for three long years of “homework” doing research online, talking to experts at nearby universities and rehab centers and visiting home shows. “The



most important feature,” he says, “is it’s completely accessible but doesn’t look like it.” The Daubitz’s welcome virtual visitors through their Web site and occasionally the front door (by appointment).

They are still reveling in the lifestyle improvement. Daubitz is pleased that two of his innovations are working out even better than he hoped. He put in 45-degree corners that translate into extra turning room. This, coupled with higher than average baseboards, means not a mark on the wall after six months of wheeling around.

Daubitz held down costs by finding sponsors, getting a city code exception to use Hardiplank concrete-based siding instead of wood and making a few sacrifices. “Originally we had this big two-sided stone fireplace dividing the living room, but in the end, we gave it up for open space when trimming square footage,” he says.

And what would he do differently? Speak up early and often! He intended the pad of the house to be about a foot higher than it turned out and had tons of dirt delivered in an effort to decrease the slope of the drive. Somewhere between the contractor and the concrete and the carpenters, it didn’t happen, a reminder Chris gets every time he rolls up the drive after taking out the trash. One thing he wouldn’t change: finding a builder with a real understanding of access — his grandfather. That could be your biggest challenge.

Resistance and Responsiveness

Second, get over the idea that the ADA or the National Association of Home Builders is going to get you out of doing your homework.

Other than apartments or duplexes, when it comes to homes, the ADA doesn’t go there. The NAHB is playing catch-up on “accessible” homes. The association’s own research shows the 78 million baby boomers with three-quarters of the nation’s disposable income need a different style home than what’s being built for young families. Those demographics should bolster designs that

also benefit the paltry two million or so chair users — the real pioneers of lifelong mobility.

Census data says only three percent of the nation’s housing stock is currently accessible despite the fact that 30 percent of American families have at least one member with mobility issues. Nevertheless, the NAHB has pigeonholed discussions of universal design in its 50-plus track. The NAHB is leery of taking work out of the hands of remodelers and have fought any and all attempts to require even one accessible entrance. OK, there was one in each of the two Idea Homes at this year’s big home show. And they did announce a new award in conjunction with AARP to recognize builders, remodelers and developers who are creating “livable communities” that “make life easier for residents of all ages and abilities.”

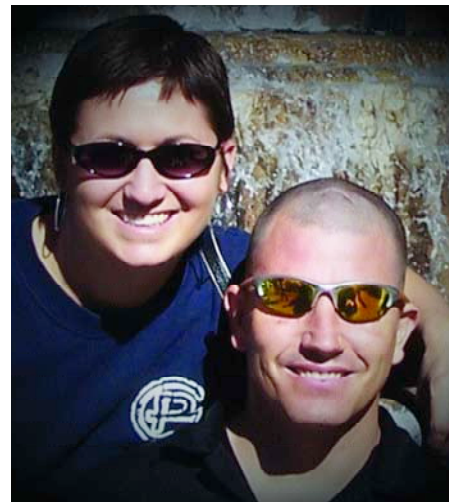
In Modesto, Calif., Scott Meyers of Del Valle Homes is one builder who “gets it.” He decided to make 20 percent of the homes in his 178-unit Rancho Encantado development accessible. He even arranged special financing and pricing to make the unique housing available to low-income, first time homebuyers. Guess what? Those 28 homes sold out first!

“Clearly, the disabled community — many on limited incomes — deserve access to homeownership. We wanted to help make it happen,” says Meyers, who adds that his experiment “penciled out.” In other words, there is a demand for affordable, accessible housing, and some of it is coming from people just planning ahead. “I had fit and healthy 65-year-olds tell me they could afford an adaptable home more easily than a nursing home.” The Del Valle Web site includes house plans and features like no-step entrances, wide corridors, accessible baths, lever handles, raised outlets and lowered light switches that made the homes so popular.

To the rest of the building industry’s credit, the NAHB has instituted a certified-aging-in-place-specialists program to train

remodelers to update homes for changing cognitive, vision, hearing and mobility conditions. Since 2002, 1,000 of the 235,000-plus NAHB members have earned the CAPS seal. There’s now an online CAPS directory, a good place to search for a builder who has a clue why narrow doorways and non-reinforced bathroom walls can be a “go directly to the nursing home, do not pass go” card. You’ll still have to speak up regarding what you need, but don’t worry. Sensitivity training is part of the CAPS curriculum, so they supposedly listen well.

Architect Charles Schwab has already listened and seen for himself. In the early ’90s, he left a glitzy firm in Aspen, Colo., to return to Moline, Ill., open his own practice and care for an aging grandfather. That and a disabling personal injury pushed him to



The three years Chris and Tiffany Daubitz spent researching how to build their accessible dream home were well spent.

produce the nation’s first book of affordable, accessible house plans. The third edition featuring 102 homes is available online. His designs range from retreats smaller than 1,000 square feet to country estates. While working blueprints cost \$2 per square foot, the entire book is available for under \$40. You can get a peek at many of the plans on his Web site.

Does universal design cost more than conventional construction? Yes, by 4 or 5 percent, says Schwab, but compared to the \$50,000-a-year-and-growing price tag at nursing homes and assisted living centers, it's a "cheaper, more rational choice from the get-go."

Schwab goes far beyond roll-in showers and roll-under ranges. He uses sun tunnels to turn wider hallways into galleries. Some garages are oversized to accommodate an access aisle for ramp vans and have a floor that meets local carbon monoxide codes without a 6-inch step. Many features, like lowering windows or adding notches so closet rods can be raised or lowered, cost nothing.

He advocates getting rid of little-used spaces like dining rooms to add footage in busy bathrooms and hallways. "Too many standard bathrooms are built 9-by-5 just because there's a 5-foot tub at one end. Someone in a wheelchair can't turn around unless you up the space to at least 9-by-8. At \$100 a square foot, you've just added \$2,700 to the bottom line, unless those 27 square feet come out somewhere else."

If land cost dictates a multi-level home, Schwab's wider stairways can make room for a platform lift at about half the price of an elevator, and his accessible decks use cable rails instead of pickets so wheelchair users can see the woods instead of wooden slats. His "smart" energy-efficient homes also make utility bills more affordable and include plans for FEMA-approved safe rooms that could trim your insurance bill.

Third, get over yourself and get a "blue man"!

When Susan Duncan, of Bend, Ore., was a registered nurse in the neuro-rehab unit of a west coast hospital in the '70s, she got so ticked off at the "life sentences" summarily handed to patients released from rehab into homes from hell or nursing homes that she enrolled in design school. Today she's the CEO of ADAPtations with 30 years of experience in designing and consulting for access and independence.

Duncan is passionate about universal design and the solutions it offers. Surprisingly, she hopes there will never be laws

or codes requiring its use. Good design should be voluntary, she says, and she thinks universal design needs a little editing. She's working on that, and meanwhile holds the patent on a cool device that can help you and your builder "measure twice" or even 20 times before you build. Doing it right the first time could be the most affordable move you'll make.

Her blue man, "The Visualizer," wheels through potential house plans and identifies tight spots and wasted space before a single load of lumber hits your lot. Not only that, "The Visualizer" stamps the offending spot so there's no way the problem slips by you, the architect, the builder or the construction crew. In his scale-sized chair, the blue man illustrates the importance of issues like the 18 to 24 inch clearance on the latch side of doorways to make opening and closing the door easier from a wheelchair.

Duncan's the first to admit her blue man isn't perfect. His 5-foot turning radius and 30-by-48 inch footprint reflects the international standard, but she encourages a 6 foot circle or more. She says the increasing use of scooters and the needs of wheelers with attendants make additional space a good idea at the construction stage. Measure a bunch and build once. "The Visualizer" could be the best \$45 you'll ever spend.

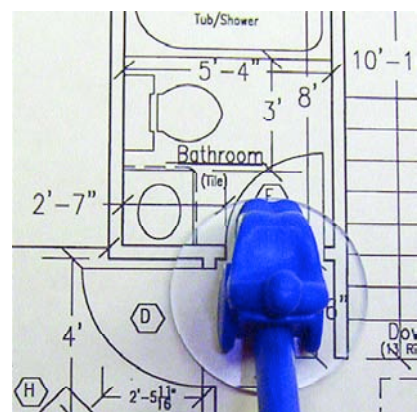
Details Count

Fourth, get over your need to be spontaneous and get a due from Santa.

Make a list and check it twice. Niggling details are Duncan's biggest beef with the current format of universal design. She says a checklist would go a long way toward helping consumers and builders get on the same page in universal design. She's working with researchers at Seattle Pacific University to develop an international checklist that could include up to 100 items. The prototype list is entering the testing phase, and she would love to have individuals in the process of building an accessible home contact her at ADAPtations (www.adaptationsinc.com) to participate in the shakedown. Her ideal list would include a description of a fea-

ture, the justification, the potential cost and at what stage in construction a decision must be made.

Checklists on design features are available at several locations online. You're likely to find a few items you can't afford to live without, a few you didn't know about and a few that can save you some bucks by doing without. The Center for Universal Design at North Carolina State University takes a different approach that makes its list a good counterpoint. Developed in 2001, the features list describes gold, silver



Using this wheelchair-scaled "Visualizer" to check blueprint accessibility can catch too-narrow spaces before they're built.

and bronze level components of a universally designed home. Builders can, in effect, award themselves medals for choosing to implement design features up to a gold standard that includes cabinets that mechanically lower, a package bench by the front door and accessible entrances and bathrooms throughout. The City of Irvine, Calif., has a checklist that takes a similar carrot approach without the stick of regulation. Its Web site includes a checklist and a list of builders who use it.

In Columbus, Ohio, Rosemarie Rossetti has been using wheels for eight years as an entrepreneur with a successful speaking, training and consulting firm to run. She rolls from jet to podium to keyboard with a message to "Take Back Your Life." For the past three years, she and her husband Mark have been planning the imminent groundbreaking on a truly accessible home. Rossetti, who



Photo by Mark Leder

Until her new, accessible house is completed Rosemarie Rosetti will continue finding ways to push her chair, operate the porch lift and carry groceries at the same time.

holds a Ph.D. from The Ohio State University, has attacked the project with the attention to scope and detail of a doctoral thesis. She's interviewed, investigated, photographed and filed ideas from homeowners and experts around the country — authoring dozens of articles and becoming a sought-after speaker on universal design and accessible homes.

"I was getting so excited about each new discovery that my business advisors finally said, 'Rosemarie, you can't just live there, you've got to share!'" That's how the Universal Design Living Laboratory project emerged. You can take a tour of her extensive Web site offering links, information, blueprints, drawings and thought-provoking ideas without spending a dime. But the resulting 3,500 square foot custom home with four-car garage, designer kitchen, two home offices and unique wardrobe/laundry larger than the master bedroom goes beyond universal design. Rosetti calls it a universal design, green/energy-efficient and healthy home learning lab. It's certainly one of a kind.

Rosetti's home may seem lavish to you, but she's still balancing every luxury against a strict budget. The square footage has been trimmed back twice. That's how a hallway that sucked bucks became a library that shows off books. "We said, 'Do we really need this hall?'" recalls Rosetti. "So the architect moved the fireplace, erased some

walls and it's now one of my favorite places in the house. And it was cost effective!"

About two years into the design, the elevator was moved from the front foyer to near a garage entrance when Rosetti realized its most frequent use was to ferry publications from her van to basement storage beside her assistant's office. Should the elevator ever strand Rosetti in the basement, there's even an escape route. An egress window in the office has a dual design — it lets the sun in and lets Rosetti crawl out. Safety should be on your checklist as well.

Fifth and finally, get over the idea that access has to be ugly or expensive.

Designer Cynthia Leibrock has been working for years to bust that myth. Her portfolio includes The Betty Ford Clinic and a Smithsonian exhibit of kitchens with Julia Child. She's the founder of Rehabitat, a Christian non-profit that remodels homes at little or no cost for disabled or aging owners. She teaches design classes at Harvard and has twice won the Joel Polsky Prize for Literature for elaborate books on universal and barrier-free design. Her latest book, *Design Details for Health* covers institutional settings that absolutely refuse to look institutional. The details and high style could also look right at home in your home.

Leibrock concedes many of her residential clients are wealthy, educated and savvy. They're counting on cash to keep them comfortably independent in their own homes

and out of a nursing home. She designs such dazzling interiors for the high end market that more than a million people have seen her work in the Kohler Design Gallery in Kohler, Wisc.

"Call it marketing if you will, but I want people to hear the words universal design and think beauty and comfort in surroundings that support a full healthy life for people of all ages and ability," she says. And Kohler's Comfort Toilet is a perfect example. It's just plain more comfortable to use for almost anyone but a 2 year old. Somehow the name "ADA compliant fixture" doesn't carry the same cachet.

In Leibrock's words, "Quality lasts. If you've been around a while, you've learned cheap products that have to be replaced every few years cost more in the long run." She advises waiting a little longer or doing a little less in order to include the very best design and materials you can afford. She says some great quality design at a good price is as close as your local Target or Home Depot.

Registration for one of Leibrock's Harvard seminars is pricey, but anyone can afford to visit her Colorado ranch online. She's in the middle of a major renovation and has posted a list of the top 100 universal design features she's including in the project. And after the snowdrifts and sawdust settle, a professional photographer is shooting it all for her next book of accessible dreams.



Photo courtesy of Kohler

Accessible can meld with aesthetic, as seen in this wide-open Kohler bathroom.

Habitat for Humanity knows something about dreams at the other end of the housing market. Ron Beer is a Habitat volunteer in Stillwater, Okla., where every home is built with basic access and at least two have been customized for homeowners in wheelchairs.

“We were a little worried about the cost, but we were able to lower some cabinets and the oven and build a bathroom that works without spending so much that some other family didn’t get a home,” he says.

Stillwater Habitat still puts up 1,000 square foot homes for less than \$50,000 (thanks to volunteer labor). Only now they always use one of two accessible plans. “We can’t afford not to,” says Beer. “They work well for everyone, and lives can change in a blink.”

“Our owners have a lot more than a mortgage invested in their homes,” Beer adds. “They can’t afford to move or renovate if somebody in the family gets hurt or gets sick. And they wouldn’t want to anyway.”

Links to Explore

Checklists:

- City of Irvine, Calif., www.ci.irvine.ca.us/depts/cd/buildingsafety/accessibility_universal_design.asp
- Designer Cynthia Leibrock’s Top 100,

www.agingbeautifully.org/ranch.html

- Center for Universal Design, www.design.ncsu.edu:8120/cud/pubs_p/docs/GBS.pdf

House Plans:

- Charles Schwab, www.universaldesignonline.com/homeplans.html
- Center for Universal Design, www.design.ncsu.edu:8120/cud/pubs_p/phousing.htm
- Del Valle Homes of Modesto, Calif., www.delvallehomes.net

Virtual Visits:

- Rosemarie Rossetti’s Universal Design Living Laboratory, www.udll.com
- Chris Daubitz’s Model Home, www.wheelchairhouse.com
- Virginia Demonstration Home, www.pwcgov.org/default.aspx?topic=010064000110003756; www.design.ncsu.edu:8120/cud/general_g/docs/UniversalDesignHousebrochure.pdf
- Stillwater Habitat for Humanity, www.stillwaterhabitat.org/news.php

Resources:

- The Visualizer, www.visualizerset.com
- CAPS Directory, www.nahb.org/directory.aspx?sectionID=686&directoryID=188

- Great Grabz, www.greatgrabz.com/ns/res-photogall.htm

- NEW MOBILITY, July 2005, www.udll.com/articles/universal_design_in_kitchens_and_bathrooms.cfm (or search newmobility.com for “universal design”)

Books:

- *Beautiful Barrier Free Design, Beautiful Universal Design, Design Details for Health*, all by Cynthia Leibrock
- *Universal Kitchen and Bathroom Planning: Design that Adapts to People*, by Mary Jo Peterson
- *Accessible Home Design*, by Thomas D. Davies and Carol Peredo Lopez
- *Universal Interiors by Design: Gracious Spaces*, by Mary Jo Peterson and Irma Dobkin
- *Elder Design: Designing and Furnishing a Home for Your Later Years*, by Rosemary Bakker
- *Building for a Lifetime: The Design and Construction of Fully Accessible Homes*, by Margaret Wylde, Adrian Baron-Robbins and Sam Clark

MM