

A Home for the Next

BY JOHN P.S. SALMEN

I've spent a lot of time thinking about my home and the way it's going to meet my needs (and the needs of my family) as I grow older. As an architect specializing in barrier-free design, I've learned that one of the hardest parts of aging is having to relocate because your original home is no longer safe or easy to use.

The No. 1 safety hazard that older people face is changes in elevation within their home. Steps at the entry, stairs between floors, and curbs at the entrances of baths and showers all are accident sites waiting to happen. But retrofitting a home to accommodate movement from one floor to another usually requires major renovation and rarely can be well-integrated into the house plan on all levels. For many, the difficulty and cost of renovating are so great, they would rather sell their homes.

My wife, Ann Scher, and I wanted to avoid this situation. So we decided to look for a run-down house in a good neighborhood that had services within walking distance to support us for the rest of our lives. At the same time, we would remodel the house, applying the people-friendly principles of universal design (sidebar p. 100).

Finding the right house takes time

We searched for more than two years before we found a house that met our criteria. For starters, we looked for a neighborhood with a sense of small-scale community rather than an anonymous suburb or rural wooded lot. The hope is that this location will allow us to know, give support to, and receive support from our neighbors as we age. Also important was to be within walking distance of work, mass transit, the supermarket, and pharmacy.

Because major renovation is necessary to make an inaccessible house truly accessible, we chose a house that was in a condition poor enough to justify the cost of a remodel. We also wanted a small, low-maintenance lot, but one large enough for a garage/workshop.



Designed for a lifetime. Within walking distance of stores and mass transit, this house has been remodeled to accommodate people of all ages and physical abilities. From the handicapped-accessible entrance (behind the lattice) to the modern kitchen, ease of access accompanies smart design. Removable base cabinets, fridge drawers, and a mobile microwave cart offer users more options. Photo facing page taken at A and right inset photo taken at B on floor plan.



50 Years

Updated Arts and Crafts detailing enhances a home remodeled for baby boomers who plan to stay



Universal design is for all people

The guiding principle of universal design is to create a home that's adaptable enough to serve its inhabitants regardless of their age, ability, sex, or economic status.

Adaptable can mean dual use. Light switches mounted 40 in. from the floor (rather than the standard 48 in.) are no more difficult for people standing to reach, yet they're easier for those in wheelchairs. Doors without thresholds work for those walking or rolling.

Adaptable also can mean adding some flexibility to the design. Multiheight kitchen counters with modular/removable base cabinets are one example. Lower counters are easier for wheelchair users and for those standing to knead bread, while a second, slightly higher counter is better for decorating a cake or for chopping vegetables.

Hiding additional plumbing in a bedroom wall for a future sink is another way of building in flexibility.

Does universal design cost more? Most of the cost is in the design, not the fabrication. Federal studies show that when accessibility options are considered prior to construction, construction costs are less than one-tenth of 1% of what the same work would cost as a retrofit.

In our home, we found that universally designed details actually yielded lower costs when compared to standard products. In general, our cost increases stemmed from occasionally choosing higher-quality materials. Inset photo taken at C on floor plan.



Finally, we wanted to avoid steep inclines leading to and going from the house. The lowest floor (after the renovation) of the house that we eventually purchased now has a 1-in-20 slope (the maximum allowed without a handrail) from the entrance to the public sidewalk.

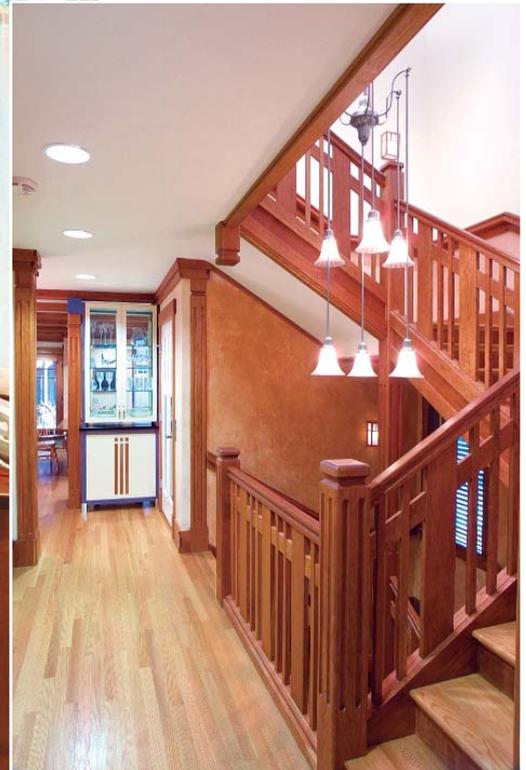
Because it's hilly around Washington, D.C., fewer than half of the homes have a floor close to sidewalk level. By the time we factored in the other criteria as well as considered what was for sale at any given time, there were never many houses to choose from.

Planning for multiple futures

Because this circa-1910 house has three floors, we didn't sign the contract to buy it until the historic commission, which is stricter than both the building code and the zoning board, approved the driveway regrading that would make the installation of an elevator worthwhile (\$23,000; National Wheel-o-vator; 800-551-9095; www.wheelovator.com).



Arts and Crafts with attitude. Opposite the kitchen, freestanding wood posts and a colored steel beam frame the family room. In the photo below, the muntin pattern in the front windows is reflected in the balusters as well as the china cabinet. The elevator is to the right of the china cabinet. Photo left taken at D and inset photo taken at E on floor plan.



Assuming that my wife and I live to old age, this three-story house wouldn't serve us well without an elevator. Of course, I hope that we'll never need one, but this solution illustrates the central idea behind universal design: We won't be forced to move because we can no longer negotiate stairs. Our house will be able to accommodate us as we age.

None of us can know the future, so I'm preparing for a few of the most likely scenarios. In the short term, I want to provide a space for my two twentysomething children until they're fully on their own. At the same time, I've provided for an elderly parent to move in by including plumbing within the walls of what's now a recreation studio/guest room so that it could be converted easily to a kitchenette. And looking even farther into the future, as my wife and I age, this space also could serve as full- or part-time quarters for a live-in assistant.

The entire process, from purchase of property through design and creation of a scale model of the house to the absolute end of con-

struction, was three years. The model was an invaluable planning aid. It helped Ann to visualize the interior and also clarified design details. For instance, the model showed that the stairwell ceiling was too low, suggesting a change to the roof peak and valley location. And, using the model, we visualized the HVAC-distribution system and identified duct plenums as well as chases for wiring, which would allow easier future wiring changes.

Balancing aesthetics and universal design

If a universally designed house was just about technology and lifelong utility, who would want to live there? Universal design wants to be beautiful. In this case, designer/builder Alan Abrams wove updated Arts and Crafts details into a state-of-the-art house.

In a departure from traditional dark wainscoting, we chose light wall and ceiling colors to counterbalance the woodwork (photo above). The

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Dual-use basin and shower serve all. The deep sink on the left serves as a utility sink, while the low-profile shallow basin to the right becomes a work surface. Its drain, off to one side, allows easy wheelchair access. Photo right taken at F on floor plan. A no-threshold, roll-in shower works as well for stumbling, sleepy teenagers as it does for those in wheelchairs. Inset below taken at G on floor plan.



6-over-1 theme in the original windows' muntin pattern was repeated in the doors and sides of the kitchen cabinets (photo pp. 98-99) and in the balusters wrapping around the stairwell (photo p. 101).

Paying homage to British architect Owen Jones's discussion of the role of color (*The Grammar of Ornament*, 1856), we tried to balance the warm hues in the cherry handrail and quartersawn oak floors with bright blue accents in the cabinetry and steel beams in the kitchen and family room. We used Jones's system of bright contrasting colors as a guide in making color choices.

Kitchens and baths are opportunities for improvement

In universal design, the greatest challenges are in the kitchen and bathroom, where all the systems in the house come together. A big problem is work-surface height. Because people come in all sizes and

physical abilities, a one-size-fits-all counter and sink height doesn't make sense. So this house invests in counters at more than one height. Multiheight counters can be formed in separate sections, as in the kitchen, or all in one piece, as in the second-floor powder room (\$1,200; Eyecon Interior Concrete Designs; 301-293-3457; top photos, facing page). The lower counter/sink works for shorter people, kids, and those in wheelchairs, especially if the sink basin is shallow. An alternative to multiheight basins installed in a single counter is to place an undermount sink adjacent to a raised bowl.

Along the concrete counter's front edge is a wooden grab bar, but it's also a design element, which follows Owen Jones's color rules. In general, grab bars, lever handles, and cup pulls are easier to grasp than knobs, especially for someone with little hand strength. They were used throughout the house on cabinets and doors, faucets, and appliances.

Another problem for all but the tallest people is accessing upper cabinets, so with the help of kitchen designer Jane Langmuir ("Ten Ways to Improve Your Kitchen," *FHB* #135, pp. 44-51), we placed easy-to-reach open shelving at the back of the kitchen counters, then ran windows across the tops of the shelving (photo pp. 98-99).

Instead of a narrow side-by-side refrigerator-freezer, we chose a Sub-Zero top refrigerator/bottom freezer as well as refrigerator

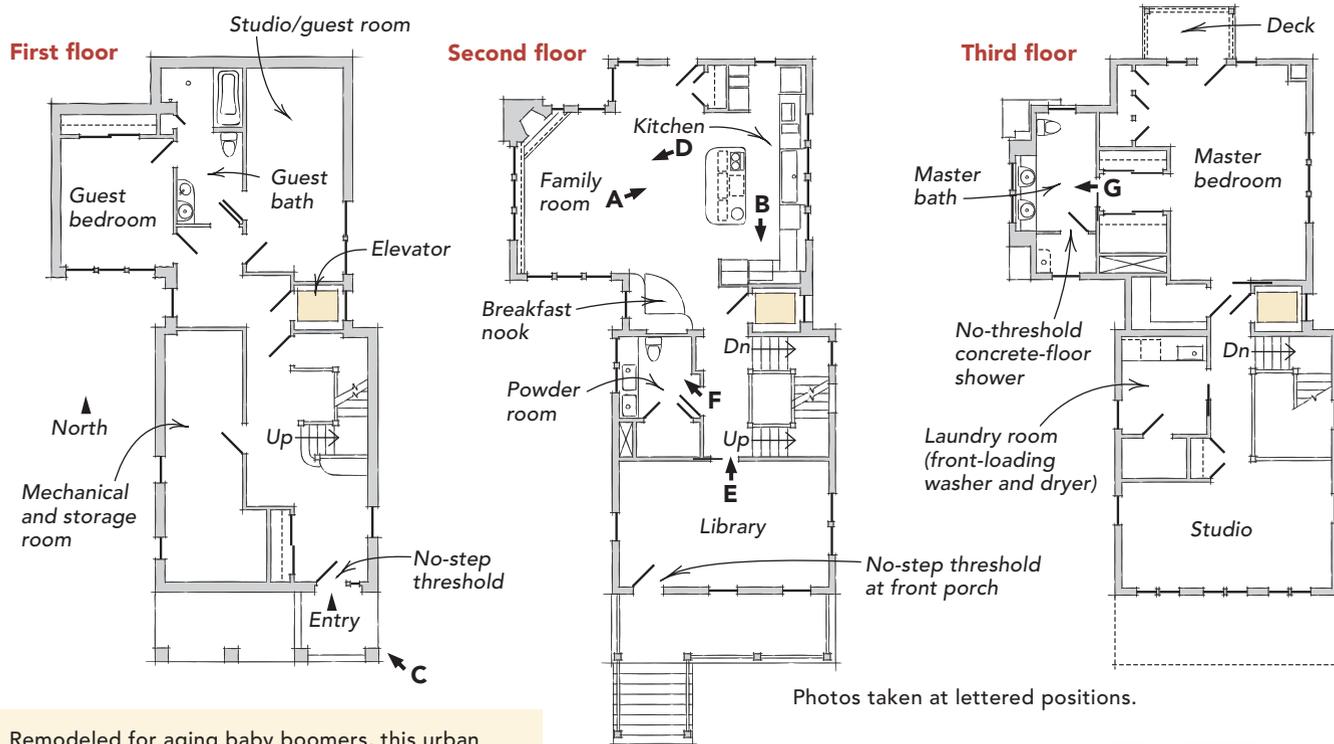
drawers at lower levels. This placement is accessible to everyone regardless of their size or physical ability. A wall-mounted oven, rather than the traditional oven/range, is easier on the back for tall people and still within reach of short people. A low-profile grill as well as a wok-burner and cooktop with controls in front, rather than at the back, works well for all. Pullout pantries, shelves, and dishwasher and refrigerator drawers (photo bottom right, p. 98) between 24 in. and 48 in. are accessible to almost everyone.

All of the above is also true for bathrooms, but there are a few extra things to keep in mind. More accidents occur in the bathroom than in any other room in the house, so plenty of grab bars, good lighting, slip-resistant floors, and elimination of tripping hazards, such as thresholds or curbs, are important. We allowed room alongside every toilet for a wheelchair, and each shower has roll-in capability.

In this house, there are no thresholds at any of the interior doors. The entries do have thresholds, but they do not have steps (bottom photo, p. 100). □

John P.S. Salmen, AIA, practices design that gives people choices at Universal Designers & Consultants Inc. in Takoma Park, Md. Photos by Chris Green, except where noted.

A FLEXIBLE HOUSE IS FOR ALL AGES



Remodeled for aging baby boomers, this urban house was created with built-in flexibility to meet their changing needs. The elevator, which connects the first-floor (basement) entry level to the third floor, was essential in making this design successful. A room serving as a studio/guest room on the first floor is plumbed for a future kitchenette, possibly for an elderly parent or live-in assistant. Interior doors are without thresholds, and the entry doors are without steps. Dual-height counters, extra room for turning radiuses, and generous 36-in.-wide doors throughout allow for future wheelchair access.

SPECS

Bedrooms: 3
Bathrooms: 2½
Size: 3000 sq. ft.
Cost: N/A
Completed: 2003

Location: Takoma Park, Md.
Architect: John P.S. Salmen, AIA
Builder: Macon Construction