

Future Housing Now: *The Next Generation Home*

By Rex J. Pace

It has been nearly two decades since Ron Mace coined the term "universal design," yet we are just beginning to see the emergence of this concept in the mainstream housing market. The promotion and marketing of several recent projects are bringing visibility to the concept of universal design in housing. One noteworthy development is the "Next Generation Universal Home." This project, one of the last that Ron worked on, represents the collective experience of the Center staff and identifies specific features and design elements which can be incorporated into every home.

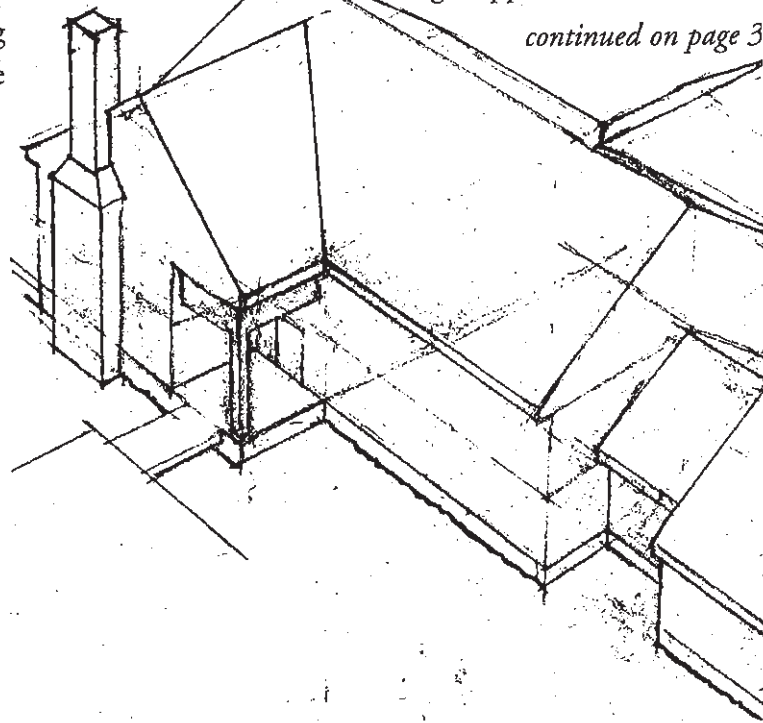
The Next Generation Universal Home was developed by the Center in collaboration with the *Wall Street Journal*. The newspaper, while planning a feature describing future housing trends for the retiree market, sought the Center's assistance to define "the house of the future." We created the concept design illustration (pages 6-7), to show how housing can evolve to satisfy the needs of a changing market while retaining many of the features that most home buyers request. The term

"next generation" recognizes that new home design is not accomplished in radical shifts, but as part of an evolution in thinking. The original illustration accompanied the article, "Down with Doorknobs," in the September 14, 1998 issue of the *Wall Street Journal*.

The primary goal in developing the Next Generation Universal Home was to raise awareness of what is possible using current building methods and technology. The house was conceived as a holistic environment—living spaces designed, not for specific users, but for everyone.

The basic layout of the home is based on typical American house designs currently being constructed in the U.S. Moderate to upper-end suburban house styles were used as models to demonstrate that universal concepts can be effective in popular home styles and do not require unconventional or "space age" approaches.

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Editor's Corner

by Andrea Gabriel

Express Yourself!


I was sitting in the darkened performance hall with about 200 other people listening to the crystalline voice of Lisa Thorson work into Cole Porter's "Let's Do It." A blue light illuminated her pale brown hair, behind her, the band—piano player, bassist and drummer, and a wicked cool saxophonist with a tangle of blonde hair, aptly named Circie. At the other end of the stage, a petite dark-haired woman dressed all in black moved about frenetically. Her clothing was speckled with the colorful drippings of paint she applied to a large canvas—an abstract painting of Lisa and her band in brilliant turquoise, purple, white, electric blue, black, and scarlet. She slapped the paint on in hurried gestures, her legs and arms jerking out wildly, patterning to the music. Next to her, a signer was interpreting Lisa's version of "I Love Being Here With You." Expressive large, brown eyes in a tiny round face; signer body stretched and soared, fingers, hands and arms flying and inviting audience participation. Below the stage to the left a CART reader spat out lyrics onto an 8 foot screen. A few feet away a deaf/blind interpreter signed for an audience of one.

"JAZZ ART SIGNS," this multimedia performance, was an experiment sponsored in part by Very Special Arts, Massachusetts as a component of their Cultural Access Institute (CAI). I was spending the week in Cambridge, on the banks of the Charles River along with folks from all over the United States attending CAI. We were all there to learn about physical and programmatic access to the arts and cultural institutions.

By week's end, we had participated in disability awareness activities, discussed the history of disability rights, watched videos and performances and attended lectures. We completed site surveys of museums and other cultural institutions.

When people don't have adequate housing or access to transportation, health-care, and public facilities, it's difficult to make a plea for the arts. Yet *creative expression* is a primal need of everyone. And to express oneself creatively is to *communicate* and *move* in some direction.

Find expression. Create movement and meaning. Draw or sculpt, dance, beat drums, sing, weave, or grow a garden. But move. Regardless of your abilities, move.

Oh yeah, Lisa Thorson was a wheelchair user and could she move! 

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Features like reinforced walls for grab bars and level entrances, while easy to implement, run counter to traditional construction methods. The house layout reflects some recent trends in house design that are likely to continue. Many of these are conducive to and supported by universal design concepts, most notably the idea of open, or flexible-use spaces. A first floor master bedroom and bath can be used as a suite for care of an elderly parent or relative if necessary. An additional first floor bedroom can be designed to accommodate guests or double as a home office. Compartmentalized baths can be used by more than one person. Other popular spaces such as a "mudroom," a shared bathroom, spacious master baths and walk-in closets, and a computer "niche" have been included.

In comparison to most of the fixed features of the past, this design relies on *adjustability* to accommodate the widest range of users. Height-adjustable counter tops are used in the kitchen and bathrooms. Rotating and adjustable height shelves maximize storage. Toilets have height adjustable seats. Bathing spaces allow more than one method of use—standing, sitting, or reclining—including the multi-mode bathing fixture concept developed by the Center. All of the illustrated features are technically possible now, although some are not widely available. Features such as adjustable counter tops or vertical rotating shelves are available in very limited choices, while others such as the multi-mode bathing fixture are not currently manufactured.

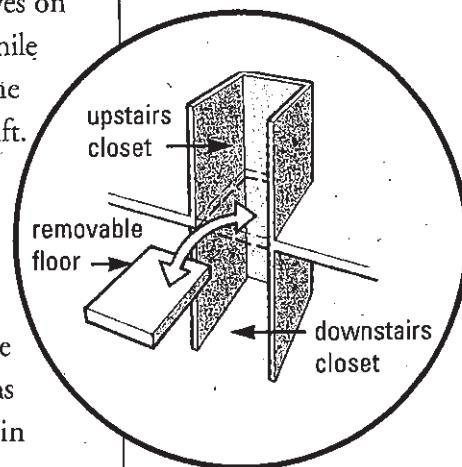
One obvious element of the Next Generation Universal Home is its upper floor. This may run counter to many people's notion of what is a universally designed home. However, two-story homes will

continue to be built because of the savings in construction costs. The Next Generation Universal Home provides several invisible options for efficient and cost saving modifications to gain access to the second story. The first is a stairway designed to accommodate the installation of either a chair or platform lift. The design of the stairway is critical—if the stair turns or if there is insufficient space at the top and bottom of the stairway, lifts often cannot be installed. Here, the stairway width is increased, additional space is provided at the top and bottom of the landing to disembark from, and to store a lift, and electrical connections are provided. Second, the house contains stacking storage closets, with removable floors, in the center of the house. The flooring when removed, exposes an elevator shaft. This allows the installation of an elevator without disrupting either the layout or the aesthetics of the house and saves on retrofit costs. The elevator option, while potentially expensive, is integral to the house and less obtrusive than a stair lift.

The Next Generation Universal Home and the work of others reflect the increasing sophistication and application of universal design in single-family home construction. The next century promises new innovations in housing resulting from advances in computer technology, manufacturing processes, materials applications, and areas yet undiscovered. If these are approached in a thoughtful way with a commitment to the end user, more effective solutions than those now existing can be implemented. Ideally, the next generation of housing will be more inclusive and bring our built environment truly closer to a universally usable one. (11)

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Stacked closets, storage, or pantry spaces with removable floors can be converted into an elevator shaft if necessary.



Planning Your Universal Home

By Nancy Hitchcock

Nancy Hitchcock is Information Specialist at the Center

The *Directory of Accessible Building Products, 1999*, published by the National Association of Home Builders, is a valuable resource for locating universal and accessible building products. Contact them at 1-800-638-8556 for ordering information.


A garage floor level with the house floor creates a universal entrance.

As you look at the innovative ideas illustrated in the Next Generation Universal Home featured in this issue, you may be thinking, "Wow, these are great ideas; I want to make the home I am building universal." Whether you are planning to remodel only one room in your home, need sources of house plans, or want information that will help you and your builder create custom house plans, The Center for Universal Design has resources that can help. Call the Center's toll-free Information and Referral Service—800-647-6777—whether you are a consumer or builder. The Center maintains a file of product catalogs and manufacturer sources, and a list of references for printed materials in addition to our own publications.

Most people who call the Center need information for three critical areas: entrances, bathrooms, and kitchens. There are several attractive, universal solutions to entrance accessibility that do not involve building a ramp. In new construction, grading the lot and placing the house so that the house floor and entrance level are

close to ground level eliminates the need for a ramp. If you are planning a garage, and local building codes allow, build it with a sloping floor so that the door into the house provides a level entrance. Using an earth fill to gently build up the ground level near the entrance, or building an attractive bridge that goes from a point on the lot that is at the same level as the entrance, creates universal accessibility. For existing homes with no more than a two step entrance, the earth fill strategy is ideal.

Several manufacturers make universal kitchen and bathroom cabinet components. These include cabinets with higher toe kicks and lower counters to accommodate wheelchairs. Both bathroom and kitchen sinks should provide clear kneespace. If you choose cabinets for under the sink, choose ones with doors that fold out to provide knee space; some units can be pulled out entirely. Other cabinets allow upper shelves to be lowered into a convenient reach range for people who are short or who are seated in a wheelchair. Pantry units are available with rotating shelves and full-extension drawer units can be specified so that rear contents can be reached. Side-by-side refrigerators with shelves that easily pull out increase usability for a variety of consumers. For the bathroom, several companies make accessible, prefabricated, curbless showers so that people can enter a shower without stepping over a curb, or seated in a shower chair. Some bathroom sinks mount on the wall leaving a clear space underneath. For conventional bath tubs, locate lever faucet controls on the near side of the tub to avoid reaching.

Before you begin, call us for information. We'll be glad to help plan your universal home. 

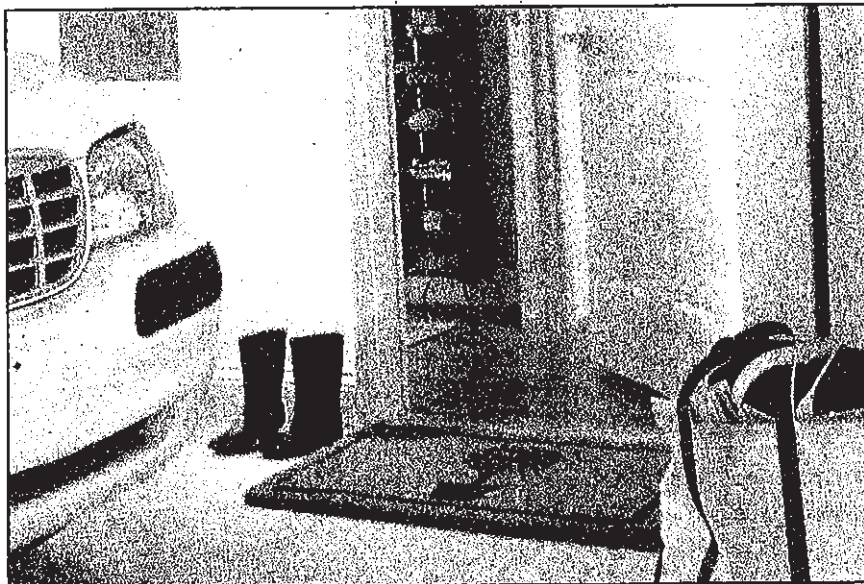


Photo courtesy of Meredith Publishing

National Projects Feature Universal Design

By Andrea Gabriel and Rex J. Pace

Universal design in housing becomes viable when the concepts and principles are adopted, marketed, and promoted as "standard" rather than "unique." Recent demonstration and marketing projects supported by national leaders in the design and building industries have brought visibility to universal design. Part of the success of these projects is that the marketing language and strategies have become inclusive rather than exclusive. The following projects, on which the Center consulted, illustrate these trends.


At the 1999 International Builders' Show, with an attendance of over 70,000 and an exhibit space of over 500,000 square feet, universal design emerged as a cutting edge topic. "LifeStages 99," the showcase exhibit, incorporated many universal features within its nearly 3,200 square-foot, one-story space: "Built with tomorrow's technology, this manufactured home showcases universal design that lets people gracefully age in place."

Another high-profile industry effort is being undertaken by *Better Homes and Gardens* magazine in their "Blueprint 2000" home project near Chapel Hill, North Carolina. The home's universal features include a unique three-way bathing space combination of tub, roll-in shower and bench. The design will appear in the November 1999 issue of *Better Homes and Gardens* magazine.

Just outside of Richmond, Virginia, national attention was focused recently on "Home 2000," designed by Access Unlimited and built by Hayden Homes. Their marketing materials promote a house with "step-free front and garage entrances, countertops at multiple levels,

and a unique 'child-friendly' bathtub with wide cantilevered seat." Electrical outlets are located higher on the walls, light switches lower. The home is similar to other homes in its neighborhood but with many well-designed, value added features.

The work of Ron Wietzel and his company, Amherst Homes, in Cincinnati, Ohio has resulted in one of the most successful attempts of true universal design; several features have been included that are rarely done in residential construction. These include a garage at the same level as the interior floor, horizontal stair handrail extensions, and a location for the future installation of a residential elevator. Mr. Wietzel has also implemented several of his own universal design concepts, among them a tread stair light wired to serve as a power outlet for a lift, and independent "knock out" floor joists painted orange making them easy to identify.

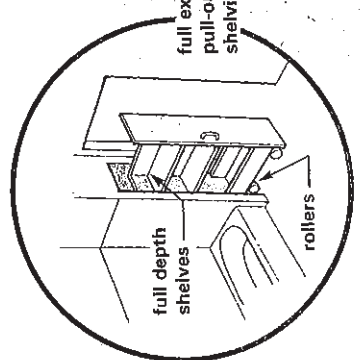
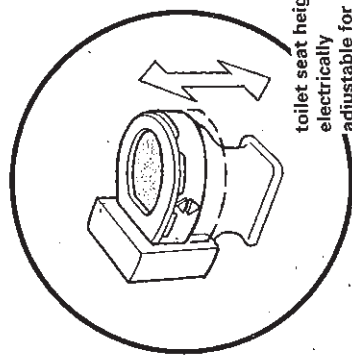
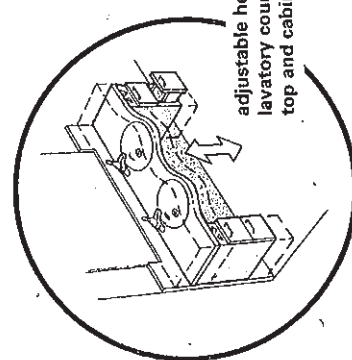
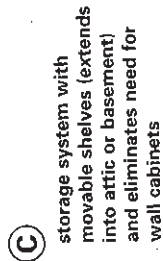
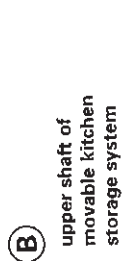
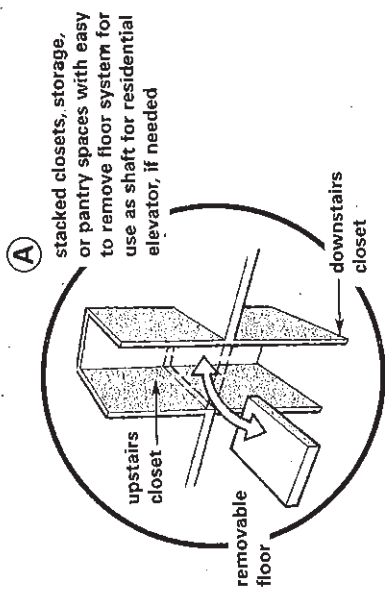
Communicating the value of these innovative designs is tricky. But the industry is learning the value of marketing; universal design in housing might just become the standard. Ron Wietzel, who has spent over 25 years in the industry says, "The future for universal design looks bright. I see the senior-oriented market adopting the idea first, but as people see how well it works for everybody, universal design will expand to all markets." 

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LifeStages '99 features a glass cupola over the entry foyer connecting to a row of skylights along the length of the house.



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2 FLOOR

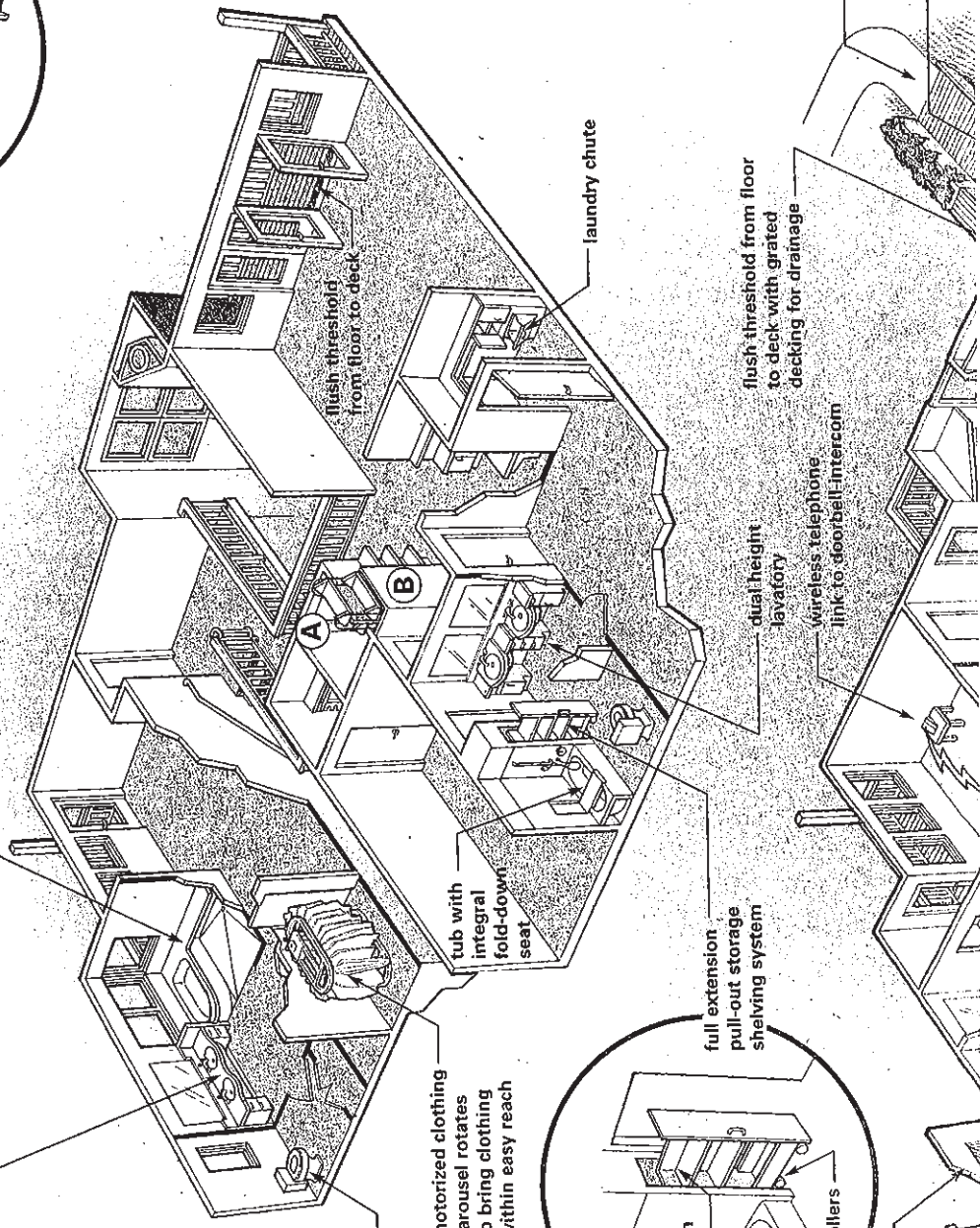
3-way bathing space featuring tub, seated shower and wet area shower

motorized clothing carousel rotates to bring clothing within easy reach

toilet seat height electrically adjustable for use by children and older adults

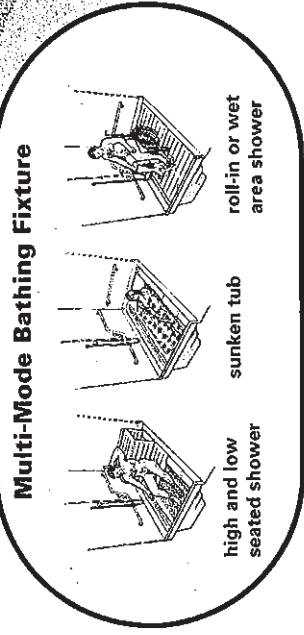
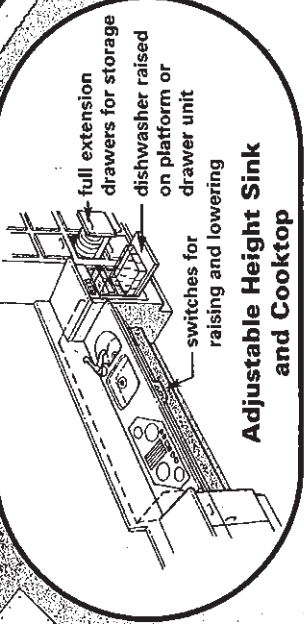
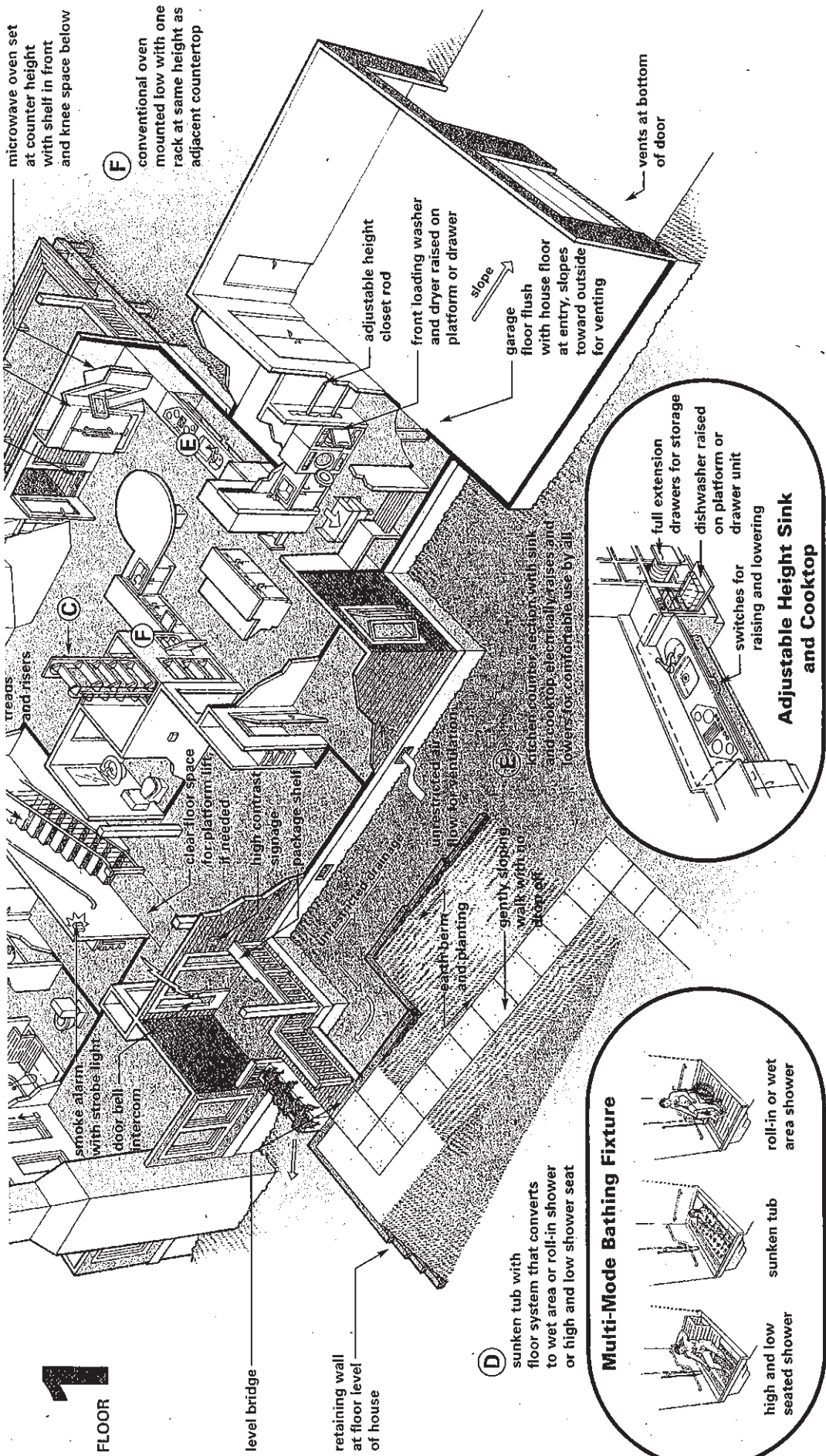
full extension pull-out storage shelving system

casement and awning windows with crank or motorized openers



level bridge to uphill grade
one refrigerator and one freezer on raised platform or drawer for

1 FLOOR



D sunken tub with floor system that converts to wet area or roll-in shower or high and low shower seat

Adjustable Height Sink and Cooktop

Next Generation Universal Home

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