

Our changing lifestyles and family dynamics are causing home industry professionals to examine long-standing assumptions concerning kitchen and bath design. With varying levels of physical ability, health issues, multi-generational households and more, today's successful designs acknowledge these changes and incorporate different levels of accessibility into each project.



Statistics show the increasing number of people with limited mobility, reflecting a greater need for doors, faucets and switches that are easier to manipulate. As requirements and requests of clients change, designers and builders find it advantageous to incorporate safety, ease-of-use, adaptability and accessibility into new and remodeled homes.

Design For Everyone includes:

- Family members dealing with reduced vision, fatigue, memory loss, joint problems and balance or respiratory issues.
- Creating better access to every area of the home for visitors of all ages and sizes.
- Modifications for people who may experience a range of physical, mental and emotional challenges.
- Caregivers assisting disabled or elderly individuals.
- Busy family members with armloads of laundry, groceries, sports gear and more.

You don't have to wait until you are getting ready to retire to start with these alterations. By planning ahead, homeowners can live safely and comfortably in their homes and still incorporate their design aesthetics. A home designed with UD principles will be more comfortable for you and your guests; enhance its value if your long-term plans are to sell, and easily welcome a senior relative into in your home.

Understanding Universal Design (UD)

Most homes built in the U.S. after WWII were made to standardized building codes based on ergonomic data supplied by our military. This made a lot of sense at the time because the military had efficiently streamlined production for building equipment and our country needed thousands of new homes quickly.

This post-war, mass-production building effort resulted in the standardizations of counter heights; cabinet, doorknob and light switch locations, as well as bathroom fixture height and placement. While useful, these standard rules developed from the military data were based on the physical abilities of healthy young men.

The principles of "Universal Design" (UD) rose from a recognition that we are not all the same, and in its broadest sense means "design for all people." A parent with a fussy baby, an athlete with a painful knee injury, a friend with vision problems, or a veteran with balance or mobility issues will all enjoy visiting a home that employs UD principles.



Working with a designer



A growing list of professionals can help homeowners “age in place.”

To educate and train designers, the American Association of Retired Persons (AARP) collaborated with the National Association of Home Builders (NAHB) to create the Certified Aging in Place Specialist (CAPS) program. Through the CAPS educational program, design professionals learn the guidelines and requirements of accessibility, and how to make the modifications to make spaces more comfortable and easier to function as homeowners get older.

Another program, called CLIPP, stands for Certified Living in Place Professional. The focus of the CLIPP training is on creating homes that are “accessible, comfortable and safe for everyone.”

As people age, many wish to remain in their current home as long as possible. UD with accessible features improves the quality of life by creating comfortable environments that family members will be able to safely navigate through on a daily basis. Both the CLIPP and CAPS programs train designers, contractors and others in making homes accessible to all household members, whether it is due to age or physical limitations.

UD experts in product design, remodeling and new home building have developed innovative products and created guidelines for home design to meet the needs of a more general segment of our population.



To help your project go smoothly, be sure to involve all parties as early as possible, including the homeowner, architect, builder, designer and any government agencies that may be involved in funding or regulations. If an occupational therapist or home health worker is involved in a client’s care, consider including them in the design consultation—they can bring great insights and ideas!

For designers and builders, it is a good idea to research the requirements of local, state and federal laws—particularly the Americans With Disabilities Act (ADA). The NKBA Planning Guidelines with Access Standards is also a good resource for acceptable clearance guidelines.

Customizing your home



Whether you are the designer or homeowner, ask lots of questions about how family members use the kitchen, how they get around within the home, and what their expectations are. If possible, get good notes on what works and what doesn't work in the family's current kitchen and bathroom(s).

- How will people who use a wheelchair access sinks, reach countertops, approach different types of storage, and use appliances?
- How high can different family members reach? Are there sight restrictions that will make it hard to see items in deep cabinets? What is the dexterity and hand strength of each user for turning knobs, pulling drawers open, etc.?

Additional Universal Design considerations:

- Counters, cabinets and appliances at multiple heights will benefit all family members whether they are standing or seated.
- Countertop materials such as laminate, granite and quartz provide a smooth, consistent surface and are easy to care for.
- To reduce steps and fatigue, consider smaller appliances. Two smaller, well-placed refrigerators, or a pair of refrigerator drawers, may provide a greater amount of usable storage than one large fridge.
- Self-closing appliance doors and drawers reduce physical strain on users and prevent energy loss due to forgetfulness.
- Remote-controlled vent hoods, fans, etc. are easier to operate than having to locate and turn a small knob.
- Induction cooktops stay cool to the touch and will not cause towels, papers or other flammable materials to burn when left on the cooking surface by mistake.
- Maximize base storage with easy-to-use accessories that rotate or pull forward to help eliminate reaching. Roll-out drawers and shelves will provide easier access for people of any height.
- Eliminate or reduce wall cabinets if space allows. When used, lower the height, use pull-down shelves and consider open shelves for easier access.
- Good lighting helps everyone—especially those with poor vision—and helps to prevent falls. Incorporating more natural lighting into the design increases the comfort of those who spend the most time at home.
- Higher electrical outlets ensure that very young children are not exposed to unnecessary risk, and are also easier to reach for those who have trouble bending down.
- Place rocker-style light switches lower so that children can reach them and anyone with limited mobility won't have to lift their arms very far.
- Install under-cabinet lighting and non-glare surfaces so that prep areas are easier to see and work around.
- Touchless faucets mounted at the side of the sink are more convenient for everyone.
- Lever-handle knobs for interior doors are much easier to operate than round doorknobs.
- Wider doorways and hallways allow wheelchairs to pass through, barrier-free (and also make it easier to move furniture).
- Floor elevation and flooring material changes between rooms should be avoided, as these can be a tripping hazard.
- Curbless shower entryways are convenient for all abilities; allow enough room inside to accommodate a built-in or portable shower chair.
- Grab bars are a basic safety item in the shower and beside the toilet that can also double as a towel rack.
- Full-length mirrors are useful for all family members.
- Lowered bathroom sinks and toilets are accessible to children and to those in wheelchairs.

Anatomy of a thoughtful design

Let's take a tour of a kitchen design that incorporates accessibility without sacrificing style. In general, all of the appliances are at or below counter height, including a pair of refrigerator drawers to the right of the cooktop. On the opposite wall, the standard refrigerator features a glass door and a freezer drawer below for easy access. Open areas below the sink and cooktop accommodate a wheelchair or stool, and the counter near the sink has been lowered a few inches to create a comfortable prep area for a seated user.

Design Features

1. **Open Shelves** are attractive display areas and make items easy to find and reach.
2. **Lazy Susans** in base corner cabinets reduce the need to stretch and bend.
3. **Vertical Bifold** doors lift up and out of the way, reducing the potential for head injuries.
4. **Pull-out** organizers are available in a variety of configurations to maximize storage space.
5. **Refrigerator Drawers** are easier for seated users.
6. **Blind Corner Optimizer** systems pull out to allow full access to the entire cabinet.
7. A **Desk Drawer** cabinet provides a convenient landing spot next to the refrigerator for groceries.
8. **Raised Dishwasher** cabinets put a standard sized dishwasher at a comfortable height. Dishwasher drawers are also a good option.
9. A **Trash Roll-out** next to the sink is easy to access, and double units can be used for both refuse and recycling.



In addition to cabinet layout and appliance placement, flooring and lighting choices can improve the usability of a kitchen. A rough-textured floor in a non-porous, non-skid surface is easy to walk on, roll across and keep clean. Extra lighting under the wall cabinets, over the sink and at the cooktop will create a bright, shadow-free work area for every user.

Adding your style

When implementing Universal Design, don't ever think that you need to sacrifice comfort or compromise on your style. The two images below feature the same design, and even the same door style. By changing out the finishes, flooring and a few other details, each homeowner achieved the look and feel they desired.

The Cortina door style and Cornerstone framed cabinetry were chosen for both designs.

Features include:

- Raised dishwasher cabinet
- Increased toekick height
- Desk drawer cabinet with false front over 12" deep vanity cabinet at sink and cooktop to cover plumbing and electrical.
- Induction cooktop with controls at front.
- Multi-level island to accommodate seated tasks.



△ Charcoal stain
on maple

▷ Icing and Rain
paints on maple