

# Universal Design in Housing and Kids Alike

Parents of children with special needs are beginning to realize that a home designed for their child who might now use a wheelchair may benefit them as well in the future as they “Age in Place”. I recall not so long ago when people thought an accessible home would hinder resale value should they ever need to sell the home. As the boomers age and Medicare and Medicaid seem to possibly decline in the not so distant future as a source of funding for elderly and special needs housing, people and their families will be opting to live the rest of their lives in their own homes.

There may quite possibly be several generations living under the same roof in any given home. As this becomes a reality, homes that feature Universal Design (UD) will be a great asset and will only increase in value. There are 76 million baby boomers who will live longer than in the past, not to mention other increasing numbers of the population with disabilities. Let’s face it, there is no way the government entitlement programs will be able to support these populations as their needs for housing grow. The time to plan for this probable phenomenon is now.

What was known as simple accessible housing with a ramp, wider doors and maybe a curb-less shower, has become quite sophisticated yet simple in its implementation and is known as Universal Design (UD) or Life-Span Home Design. Throw in with this terms such as Inclusive Home Design, Multigenerational Home Design, Easy Living Home Design, Flex Housing (in Canada), Design for All (In Europe) and

homes for “Aging in Place” labeled such by the National Home Builders association (NAHB) and you pretty much get the idea. Just to further confuse the matter, About 10 years ago I thought it wise to include



well for people who are tall or short, people with visual or audible impairments, overweight people or anybody who uses a mobility device. UD is appreciated by people of all ages. A person pushing a baby stroller



sustainable and energy efficient design into the early initial design of UD home plans and remodels and began calling it Universal Design “Smart” Homes for the 21st Century.

However, in this article we will focus on some of the features of UD and leave the “Smart” green and sustainable features for another place and time.

Universal design is truly inclusive and when properly designed, it functions as

or someone utilizing a wheelchair will agree—a no step entry makes for easier strolling. An elderly person will also enjoy being able to live in their own home longer as they “age in place”. A child or wheelchair user can help prepare meals in the kitchen due to varying height countertops. Wider doors and hallways will be appreciated on moving day. If paramedics and firemen ever need to rescue anyone from the home, They will be able to professionally do their job without turning a gurney sideways to get someone through the door,

The purpose of UD is to reduce the physical and attitudinal barriers between people with and without disabilities. Ease of use, safety, and convenience are

# “Comes of Age” ...For Parents

By Charles M. Schwab Architect AIA

the byproducts of UD. It is not a series of codes and it does not use signs or other designations to identify it. Well conceived UD is very stealthy and can be invisible. It is quite simply good and economical design in order to provide the freedom to live or work at home safely and independently. It means living in freedom in your own home for as long as you would like. It also allows a person to recover and get well at home while reducing time and dollars spent in the hospital.

Achieving UD is more than including a list of features. Let's look at the big picture by exploring spatial planning and

circulation as one moves from the garage into the main living areas.

We exit the car in a garage that has a 5'-8' center aisle, so one can use a wheelchair lift with adequate exit space upon exiting the car. Each side passenger will have a minimum 2'6" space to exit. There will be a 1/48 (ADA is 1/12 for a ramp and often too steep) slope at the garage floor to a min 5'x5' flat area in front of the entry door that allows for a maximum threshold. Prior to entering you will notice a 2'x2' flat metal floor grate with a drain inside that can be used to clean



your boots, wash the dog or detail the wheelchair.

You may not actually notice that the switch to the remote and battery back-up garage door and lights is no higher than 42" above the floor. An electrical panel may be located nearby with adequate clear space in front that is no high-

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## Universal Design

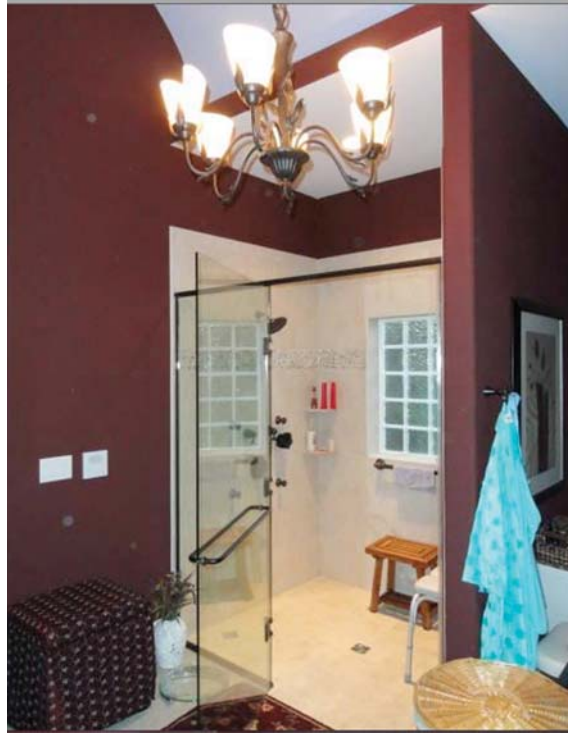
er than 48" to the highest switch. In fact all mechanical devices will not be higher than 48". The outlets in the garage and home are a minimum of 18" above the floor for ease of use without bending

If you use a wheelchair it will be easy to open the door as there will be at least 1'6" on the opening side for adequate maneuvering space. If you are carrying groceries you can even use your elbow to open the door with the lever handle. Lever handles are easier to open for everyone and are especially appreciated by those who have limited hand motion or Arthritis. We often specify a package bench 30" above the floor so, if you are like me and always have your keys in the wrong pocket, you can set down your bags and easily open the door.

As you move through the home you will notice an open floor plan. The Kitchen is centrally located. Counters are placed at various heights making it convenient to set things down and then store them. From the kitchen you can sometimes view through to most of the common areas of the house.

The main functions of the sink, refrigerator /freezer and the cook-top were typically placed in a work triangle in the typical post World War II home. Each leg of the triangle connecting the 3 should not be longer than 9' for a total of 26'-0" for maximum efficiency. This is still good basic kitchen design, however, when multiple people are cooking and people are also mingling in the kitchen new UD strategies need to be considered.

The new UD kitchen is being designed larger to accommodate these concerns, but a large area can be at odds with our 26-foot work triangle guideline. The solution can be to design combinations of triangles to intertwine with each other in the kitchen for a complete multi-tasking, optimum functioning area. For example, adjacent the main kitchen tri-



angle may be a lower "work zone" area for a child, Grandparent or a wheelchair user. A lowered sink in an island or peninsula with an under counter drawer microwave and a cutting board would serve this area well. It can be tied into the other triangle with a two door, side-opening refrigerator/freezer combination unit or the in wall oven unit.

This "zone" may even have its own drawer dishwasher and drawer refrigerator for complete working independence. These drawer units can be expensive. However, an alternate option for the drawer dishwasher is to raise a standard dishwasher so that the middle of the two dish racks are even with a seated users elbow height for easy use. A standing person also does not need to bend over as far to access it.

I like to include lower level seating near this second "work zone" to enhance the social setting and provide seating for company near the seated kitchen helper. When possible, I include a higher 42" serving bar near the main sink. This provides high and low seating in the overall kitchen design and gives you a choice of breakfast bars. These varying height

serving areas intermingled with the preparation zones make for pleasant casual entertainment areas within the kitchen itself.

Every home should have a common bathroom with a 3 foot wide door accessible from a min. 3'8" wide hallway or open area. This powder room should have 3 feet to the side of the WC and the same in front of it for wheelchair access. Pedestal sinks do not work well for wheelchair users so a sink base cabinet with open knee space and doors that slide back within the box are a good solution. The sink should not be lower than 34" above the floor and the mirror should sit right above the back splash. The walls should initially be reinforced with blocking to allow for future use of grab bars that should hold a

250# vertical and horizontal force. The floors should be a non glare non slip porcelain tile that will not easily crack.

The larger bathrooms should have the same features as the powder but always with a curb-less shower large enough for a wheelchair. I like to waterproof the entire bathroom floor and include a floor drain in that room so if a shower wheelchair is ever used the floor can handle the water.

There are UD features for every room of the house. However, we will not be able to explore UD throughout the entire home in this article. This is but a brief introduction to an inclusive designed UD home. •

I AM OFFERING *EP* READERS A \$5 DISCOUNT FOR MY PLAN BOOK THAT ALSO EXPLAINS THE FEATURES AND BENEFITS OF UD IN EVERY ROOM OF THE HOUSE TO FURTHER SUPPLEMENT THIS ARTICLE. THE BOOK TITLED *UNIVERSAL DESIGN "SMART" HOMES FOR THE 21ST CENTURY, 102 HOME PLANS YOU CAN ORDER AND BUILD* IS AVAILABLE AT [WWW.UNIVERSALDESIGNONLINE.COM](http://WWW.UNIVERSALDESIGNONLINE.COM) FOR A \$5 DISCOUNT USE COUPON CODE: **UDHOMES** CONTACT ME: [CHARLESSCHWAB@UNIVERSALDESIGNONLINE.COM](mailto:CHARLESSCHWAB@UNIVERSALDESIGNONLINE.COM).