

Aging in Style Kitchens
and Bathrooms -
Residential
Universal Design
3 hour Webinar

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Aging in Style Kitchens and Bathrooms – Residential Universal Design 4 hour webinar Handouts ... Welcome to our webinar!

Elders are living longer, more active, happier, healthier lives

In the 21st Century, older people will outnumber children for 1st time in history and when baby boomers become 75, number of people 75 years old and older will triple in size.

According to the AARP, 84% of older homeowners wish to “Age in Place” regardless of their age, income or ability level. We now also have more multigenerational families living together. In order for them all to remain in their homes safely, independently & comfortably, many homeowners will need to modify their homes.

Design for the elderly and disabled was first addressed in a series of guidelines entitled the Architectural Barriers Act (ABA) of 1968, which marked the first efforts to ensure the disabled access to the built environment and served as the basis for the Standards used to enforce the law, under the Uniform Federal Accessibility Standards (UFAS).

But since UFAS only used Federal Funds, it only applied to Federal Buildings.

And most people hardly visit Federal buildings so this legislation wasn't enough.

In 1991, these UFAS Standards were supplemented to provide the disabled physical accessibility on a state and local as well as Federal level with the Department's 1991 title III Americans With Disabilities Act (ADA) Standards For Accessible Design published July 26, 1991 but this legislation still wasn't enough.

Finally on September 15th 2010 the Department of Justice published revised enforceable accessibility regulations for the Americans with Disabilities Act for state and local government facilities (Title II) and public accommodations and commercial facilities (Title III) called the 2010 ADA Standards for Accessible Design, the “2010 Standards”. These “Standards” set minimum requirements for newly designed and constructed or altered State and local government facilities, public accommodations and commercial facilities, who's start dates for construction are on or after March 15, 2012 to be readily accessible to and usable by individuals with disabilities.

But since ADA does not apply to residential projects –only to public buildings- it is important for Residential Interior Designers to have a thorough knowledge and understanding of Universal Design guidelines so they can impart this information to their residential clients & help them create kitchens that will work for those clients now yet also work for them as they age.

The concept of Universal Design was created by Architect Ronald L. Mace and launched at the North Carolina State University in the 1980's.

Universal design is the design of products and environments to be used by all people to the greatest extent possible, without the need for later adaptation or specialized design.

It was conceived to create comfortable, functional environments for all people regardless of their age, size, stature or ability, serving people young and old, with excellent or limited abilities, in ideal or difficult circumstances from ages 4 to 104.

Universal Design is design that is versatile enough to function for everyone from 4 to 104 – for everyone in the family from children to grandparents.

Universal Design is based upon 7 principles:

1. Equitable Use- the design must appeal to all users
2. Flexible and Versatile- so that they accommodate a

- wide range of individual preferences/abilities-
- 3. Simple and intuitive to use
- 4. Perceptible- communicating necessary information
- 5. With a Tolerance of Error- designed to minimize hazards /accidents
- 6. Able to be used with minimum physical effort
- 7. Size and Space Appropriate

An important point is that Universal Design believes that function does NOT have to sacrifice beauty!

This webinar will discuss how to incorporate Universal Ideas into both Kitchens and Bathrooms –so you will be able to help your client’s create kitchens and bathrooms that look fabulous now yet that they will be able to live in as they age.

Kitchens:

How to remodel a Kitchen according to Universal Design Guidelines:

-Kitchens Need Space for Maneuverability

Wheelchair access space is deemed 30” wide by 48” long.

1. Make all the kitchen aisles a minimum of 36” wide - better 42” best 48” wide so that a person in a wheelchair will be able to frontally roll in and access all the appliances and cabinets
2. Create a 60” by 60” (5’) turning radius so that a person in a wheelchair will be able to rotate that wheelchair a full 360 degrees to turn around. This turning radius can be either in the kitchen itself or if the kitchen is open to other rooms such as a breakfast room or family room, in those adjoining rooms
3. Self Contained kitchens need this 60” by 60” turning radius in the kitchen itself
Put the floor down first and then lay the cabinets on top of the floor so if adjustments have to be made to the cabinets to accommodate a disabled individual at a later date the floor below those cabinets will still be intact
 - a. If the kitchen is self contained and doesn’t have enough space for this 60” by 60” turning radius, installing double doors or an arched opening to an adjacent room will create that required space as well as open it up
4. The Kitchen Triangle: The fundamental design of all kitchens should revolve around what we call the Work Triangle, which is created by connecting the three major work areas in a kitchen:
the cleaning area (sink),
the cooking area (range or cook top) and
the cold storage area (refrigerator)
More trips are made within this triangle than to any other areas in the kitchen.
For the most efficient layout in a kitchen with the above 3 work centers, the sum of the 3 travelled distances should total no more than 26’ with no single leg of the triangle measuring less than 4’ or more than 9’ – with each leg being measured from the center-front of each appliance/sink.
“U” shaped kitchens are thought to be the most efficient and the most functional kitchens because the 3 sided “U” is the perfect personification of the kitchen work triangle.
Kitchens that are too big have large distances between appliances so occupants expend extra energy taking many extra steps. Neither results in an efficiently working kitchen
5. Islands are very popular today- but sometimes kitchens do not have enough room for an island and the 48” aisles. If the floor is installed first, and then the island is placed atop

the floor, it can be removed at a later date if necessary, to create the required space. Alternatively, a moveable piece of furniture such as a table or cart can be used instead of a permanent island

6. Design the kitchen base cabinets with a 9" high by 6" deep rather than a 4" high by 3" deep toe kick space - so a person in a wheelchair can frontally roll up to those cabinets and have room for their shins and feet to fit in the higher toe kick space.

-People need to be able to access their most often used items easily from a seated as well as a standing position

1. Kitchens are now being built with open adjustable shelves especially in the upper cabinet instead of or in addition to enclosed cabinets or with glass doors so people can see the contents inside the cabinets
2. Many new kitchens don't have any upper cabinets at all - only base cabinets which make it easy for everyone to access all the cabinet contents whether they are standing or seated
3. Pull Outs of all kinds are now available to provide ease of access to anything Trash bins and self closing pull out drawers are popular and now pantry's and larger storage units can also be fitted with pull out storage and there are even pull outs for table tops and countertops. and pop ups for coffee machines and kitchen-aid mixers. Upper cabinets can be retrofit pull down units in

- More great Universal Design ideas that look fabulous and function for everyone from age 4-104

1. Try to vary the countertop height and create a 30" -34" height countertop somewhere in the kitchen
 - a. Standard countertop height is 36" off the finished floor
 - b. Universal Design advocates having a lower countertop 34" maximum -better 32" or best 30" somewhere in the kitchen to accommodate both children and disabled individuals
 - c. Table height is 30"- 32" so they are most preferable countertop heights
 - d. Have a lower 30" breakfast bar /seating area as part of your kitchen countertop, or island, a separate table somewhere in the kitchen or a desk incorporated into the kitchen cabinet design which are 30" off the finished floor
 - e. Make sure that you have at least 12" -19" of leg room underneath those countertop or island seating areas
 - f. Install adjustable height countertops which can be raised or lowered to accommodate people of different heights, children, someone sitting down, or someone in a wheel chair. These countertops can either be adjusted electronically via motorized lifts or manually via a button, crank, lever, or knob. Adjustable sinks and cook tops can also be installed which electronically adjust to different heights and contain flexible plumbing to accommodate this

General Kitchen Guidelines and appliance info

1. Use easy to maintain countertops such as granite, quartz, laminate, or other durable materials, most of which are very trendy today!
 - a. Try to avoid very dark colors which make dirt hard to see and clean up and avoid ceramic tile as the tile grout collects mold and is difficult to maintain

2. I am stating the ADA requirements for kitchen sinks just so you know them. For ADA, kitchen sinks need to be 29"- 34" maximum height off finished floor– and need a minimum 27" high knee hole space off finished floor, so a person in a wheelchair can roll right up to the sink, put his or her knees in that knee hole space, and use the sink. The sink apron bottom needs to be 27" minimum height off floor and at that height; it needs to be 8" deep, for knees to fit in depth-wise. At 9" high off floor, sink cabinet needs to be 11" deep for shins to fit and not bump into any pipes at the back of the cabinet. At floor, sink cabinet needs to be another 6" deep for feet to fit. This necessitates a shallow sink 7" deep maximum – which most people do not want to install if they are not currently disabled. Universal Design also suggests attaching the toe kick to kitchen sink cabinet doors, finishing the floor below the sink cabinet and leaving cabinet without shelving so it will be easy to roll in if necessary.
 - a. Most able bodied people do not wish to install this type of a sink now.
 - b. They should simply get an under mounted sink for easy cleaning and make sure that the plumber installs all the pipes as far back in the sink cabinet as possible and insulates the hot water pipes to prevent possible later burns. You can create a space under the sink cabinet that is approximately 30" wide by 27" high by 19" deep by attaching the toe kick to the cabinet doors and finishing the interior space. This will insure that a person in a wheelchair will be able to open the doors and roll in if they ever need to and have room for their knees and feet to fit.
 - c. Make sure there is at least 18" of countertop on one side and 24" of countertop space on the other side of the main sink so there is enough room to cook and prepare a meal
 - d. Make sure there is at least 3" of countertop frontage on one side and 18" of countertop frontage space on the other side of the auxiliary sink – both at the same height as the auxiliary sink
 - e. Sink faucets should be easy to use and require little or no strength or flexibility. Once upon a time, there were few single levered faucets and they were very expensive while now single levered faucet handles are so popular you rarely see any other hardware and they span the gamut from very simple and reasonably priced to very trendy and expensive This is another example of Universal Design goes trendy!
 - f. Touch faucets that can be turned on by simply tapping it with any part of the body are a great new item perfect for anyone who doesn't want to get his or her dirty hands all over the faucet and/or wants to avoid germs as well as for the elderly and disabled. Delta makes a reasonably priced Touch Faucet
 - g. Pedal operated faucets which allow the user to easily access the valve without use of his or her hands, can be a floor mounted. The foot pedal valve can be mounted under a stainless steel compartment sink or hand washing station by simply bolting the pedal valve to the floor and running the water lines. Faucets can also be knee operated where a knee accessible valve similar to a foot control valve is installed. They can also be shelf or wall mounted. A foot pedal control valve can be designed to be raised off the floor allowing the valve body to be concealed and only show the pedal below. All of these pedal options can be used in conjunction with many faucets and spouts that are either deck or wall mounted, including gooseneck, swing spout and rigid style spout outlets.
3. Dishwashers should be front loading and located within 36" of the sink so people

can wash their dirty dishes in the sink after a meal and then easily place them in the dishwasher and we should leave at least 21" between the dishwasher and nearby appliances or counters to allow for loading and unloading of dishes

- a. Raise the 6'- 9" taller than the standard 36" countertops so the upper shelf of the dishwasher is located at 36" counter height for easy transference of dishes to and from the countertop This necessitates less bending for standing individuals which is good for tall men as well as the elderly and disabled.
 - b. Dishwasher drawers are standard items that follow Universal Design Guidelines and can be integrated into kitchen base cabinets. They can be designed with custom panels to match rest of the kitchen and are very trendy. They are easy for everyone to use not only the elderly or disabled and function well for small families that don't use many dishes!
4. Choose a cook top that has easy to reach, see and grasp front or side mounted controls so a person won't have to reach across a hot burner (and risk burning themselves) to access it and turn it off. Make sure that there is at least 9" of counter top on one side and at least 15" wide on the other so everyone has room to prepare and cook their food
 - a. Cook tops should also have a clear open space underneath them that is 30" wide by 27" high by 19" deep for wheelchair access if necessary and you can install a removable cabinet that can store pan and/or a removable cart
 5. Install Wall mounted ovens that are self cleaning and installed separately from cook top believe that this is the reason why wall ovens and separate cook tops are so popular today and why wall ovens now come in various iterations of double ovens, microwave ovens/convections ovens and warming drawers. Mount the oven (the lower oven if there are double ovens) low enough in the oven cabinet to allow for easy access for a person sitting in a wheel chair, approximately 31" from the floor. Make sure there is ample space to one side of the oven to put a hot pan coming out of the oven or roll out a pie.
 6. Choose under cabinet microwaves oven drawers in kitchen base cabinets that open and close at the touch of a button
 7. Make sure there is 15" of countertop space within 48" of the fridge so a person can take whatever they want out of the fridge and have a place near the fridge to put it down without having to run around the kitchen
 - a. Side by side refrigerators are standard item that follows Universal Design Guidelines and function for everyone including the elderly/disabled
 - b. Refrigerator drawers are standard under-counter units that both follow Universal Design Guidelines and are new and trendy. Now Sub Zero is making refrigerator/freezer drawers as well. They are perfect in kitchen base cabinets and/or islands and also work well in wet bars
 8. Washer and dryers should be front loading for easy access – and be installed under the lower cabinets if they are intended to be placed in the kitchen

Bathrooms

It is essential that everyone in a home regardless of their age or ability has access to a bathroom so there needs to be at least one Universally Designed bathroom on the ground floor of every home And it is recognized that as we get older, we lose mobility and strength. And we have found that using the bathroom requires a tremendous amount of physical exertion from entering and exiting the tub and shower to using the toilet

So remodeling and creating an accessible bathroom with sound design and appropriate products is essential

Bathrooms have become much more than rooms where people wash and use the facilities

Today they are places to relax and wind down; People want bathrooms that are comfortable, convenient, safe and facilitate relaxation for everyone be they children, adults or grandparents, be they short or tall ...seated or standing

Nowhere does universal Design yield more beautiful results than in the bathroom. That is because ample circulation, space, smart organization and convenience are signatures of good overall bathroom design as well as good Universal Design. And because so many dazzling products are available today that satisfy both Universal Design needs and stylish tastes

Bathrooms Need Space for Maneuverability as well

1. Make all the bathroom aisles a minimum of 36" wide - better 42" best 48" wide so that a person in a wheelchair will be able to frontally roll in and access all the appliances and cabinets
2. Create a 60" by 60" (5') turning radius somewhere in the bathroom so that a person in a wheelchair will be able to rotate that wheelchair a full 360 degrees to turn around
3. All Bathroom door openings need to be 32" wide so a wheelchair can enter the bathroom, since not only the wheelchair but also the person in a wheelchair's elbows and knuckles need to pass through the door unscathed and in order to achieve this bathroom doors need to be 34" or better 36" wide. Make sure that the bathroom door swings outwards
4. Bathroom countertops should be rounded or metered and there should be a lower 30"-34" Maximum Countertop somewhere in the bathroom

Bathroom fixtures

1. Sinks
 - a. Universal Design suggests that we allow a clear floor space of at least 30" by 48" parallel or perpendicular in front of the sink
 - b. Make sure that the minimum clearance from the centerline of a sink to all side wall is 15".
 - c. Make sure that the minimum clearance between 2 sinks is 30" so that dual vanities have enough space for 2 people to put all their things near each of their sinks and use those 2 sinks effectively
 - d. Many Pedestal sinks have become shallow and are 7" deep or less
 - e. Attach the toe kick to the bathroom sink cabinet doors
 - f. Or do not have any cabinets below the sink at all
 - g. You must remember to give your client the storage space for the items that would normally have been placed in that bathroom sink cabinet, somewhere else in the bathroom
 - h. Use single levered faucets
2. Toilets
 - a. Place a minimum of 48" square clear floor space in front of the toilet
 - b. This space can overlap with the clear floor space for the sink or other fixtures
 - c. Place a minimum of 18" clearance from the centerline of a toilet to any obstruction ie a wall or other bathroom fixture
 - d. Comfort Height Toilets seats should be raised to 16 ½" - 17 ½" in height off the finished floor

- e. Install toilet grab bars or at least reinforce the wall so you can install toilet grab bars later
3. Universal Design Guidelines say that Showers need to be easier to get in and out of than conventional showers
 - a. They should be a minimum of 36" by 60" wide which is large enough for a person in a wheelchair to easily use it
 - b. Be 'Curb less" and Roll In or have a maximum 1/2" beveled curb
 - c. Have a wide outward swinging door with an opening of at least 32" in width or no door at all (shower doors should be 34" or better 36" wide to insure the 32" opening
 - d. . Have a hand held shower that can be adjusted to varying heights
 - e. Have Anti-scald shower controls
 - f. -Have an integral seat about 17" – 19" off the finished floor situated where controls can be reached from that seat
 - g. Grab bars or at least reinforced walls so grab bars can be added later
 - h. Have a non slip floor

4 Bathtubs

- a. New Trendy Bathtubs are large and usually measure 30" by 60" which is the minimum a. dimensions required under Universal Design Guidelines
 - b. Have a clear floor space at least 60" by 30" wide in front of the tub for a parallel approach , or 60" by 48" for a perpendicular approach, so a person can get in and out of the tub easily
 - c. Tub height should be seat height - between 18" and 20" from finished floor level, which is appropriate for transfer and which also happens to be standard bathtub height
 - d. Make the tub surround under-mounted and either with a permanent seat at the head end of the bathtub large enough for a person to be able to sit on, hoist themselves into the tub and be able to reach the faucets, or install a removable in-tub seat on top of the top if there is no permanent seat
 - e. Have some sort of grab bar or hand rail be it hidden or not, within easy reach of the tub so a person can easily get in and out of the tub
 - f. Have a flat bottomed tub with integral slip resistance surface
 - g. Anti scald bathtub controls
5. Install tilted mirrors or mount mirrors and medicine cabinets with bottoms directly above the sink rear backsplash height to allow easy use and access for a seated person
 6. Multiple height and/or adjustable shelves should be used in closets

Other important information for both Kitchens and Bathrooms

1. Use "D' shaped Cabinet Hardware in both kitchen and bathroom as these are easier to use and require little or no strength or flexibility. Avoid knobs as they can be slippery and hard to grasp for greasy hands as well as hands riddled with arthritis and rheumatism
2. Light Switches should be the large rocker type
 - a. preferably illuminated and
 - b. should be ideally positioned 42" from finished floor to center of switch
 - c. all electrical receptacles in the kitchen and bathroom, and lights and switches near water should have GFCI's (ground-fault circuit interrupters) installed so no one gets electrocuted
 - d. Use dimmers

- e. Electrical Wall outlets need to be 12” -16” high off the floor
- 3. Make sure that the floor in both the kitchen and the bathroom are slip resistant with a coefficient of friction of at least 0.6 when wet so a person doesn't fall and get injured, especially if the floor does get wet
- 4. Make sure that the kitchen and bathroom door openings are 32” wide by installing 34” or better 36” wide doors so they are sufficiently wide to allow passage for everyone, including people in wheelchairs or walkers to enter the kitchen or bathroom. In the kitchen if there are exterior sliding doors, they should have the frame and track dropped into the subfloor so a wheel chair can pass through easily and so a person will not trip on the track walking into the room and forgetting it is there

Conclusion

I do hope that this webinar has convinced you that many of these Universal Design ideas are brilliant and if we incorporate these Universal Design ideas into our clients kitchen remodeling projects, we can create beautiful kitchens that will function for them and their families from age 4-104 now and also function for them all as they age. So we can help them “Age in Style”.

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Biography

Beverly Vosko, Allied Member ASID, RID, UDCP (Universal Design Certified Professional), CAPS, L.E.E.D Green Associate, CGP (is a full service, Registered Interior Designer in Texas #6333. She is President and founder of both Beverly Vosko Interiors and InteriorDesign-ED; both DBA's for C. V. Design Inc. For over 25 years, she has been designing homes across the United States and Europe, specializing in creating custom residential and commercial environments, be they traditional, transitional, contemporary or eclectic, that match her design clients' every need, through her design firm, Beverly Vosko Interiors. For nearly 20 years, she has taught Interior Design: first at Rice University, then at the University of Houston, and for the last 10 years nationally, with her Continuing Education company, InteriorDesign-ED. Specifically, she has taught Interior Design, Aging in Place, Green/Sustainable Design, Lighting and Antiques. She graduated Phi Beta Kappa, Magna Cum Laude from the University of Pennsylvania, studied Art History at Harvard University, received her MBA in Marketing from NYU Stern Graduate Business School, and completed Design and Antiques training from Sotheby's, the world-renowned Inchtald School of Design and Houston Community College. Please view her websites, www.vosko.com and www.InteriorDesign-ED.com