

Planning for and doing UNIVERSAL DESIGN in YOUR HOME to
Be As Free of Hazards As Possible and Eliminate “Barriers”
For ease of access and movement
For You, Your Family, and Friends

EASY to implement now in older homes:

DOORS: Remove interior doors entirely if practical or Replace with pocket/sliding doors or bi-folds as they allow for larger openings; replace conventional hinges with swing hinges.

- **Removal of all door thresholds** (prevents tripping and makes passage throughout home easy).
- **Replace or adapt all door knobs and faucets** with ADA models (lever models for doors and wing design for faucets). MANY types are available, attractive, and not expensive. Faucets are made more accessible when placed offset — on the side of sink basin NOT the rear.
- **Place Railings and lever handles at key entry door(s)** into or through the home with good motion sensitive “spot” lighting at door lock and “flood” light for area coverage. Railings can be stock items or can be your own custom made as “rustic” examples (at 25 Starr Street).
- **Stairways** should have handrails on both sides.

LIGHTING: Replace light switches with the **simplest motion and light sensitive On/Off/Auto switches:** lights can be set to go on when one enters a room; replace with LED bulbs that will reduce bulb changing as they provide the longest bulb life (their initial cost will continue to come down as more people buy them). **Portable/battery operated closet lights.**

TOILET AREA: should be reinforced to accommodate rail supports when needed for entry into bathing/shower area(s) and around toilet. These will support 250 lb. bearing weight.

- **Replace present toilet** with a low-consumption/ADA height model: height 15”-19” high and place 18” from sidewall.
- **Mirrors** should be lowered and tilted; full-length mirrors are great.

STORAGE: Clothes hooks and shelving should all be placed lower on the walls for those who no longer have “the reach” they used to have. Closet rods should be no higher than 48”. There are rod and hanger units that pull out easily.

- **Reconsider where often-sought supplies and food are kept.** Example: there are smaller (and lower) refrigeration units that could substitute for the regular, tall units to be considered. Overhead cabinets are OK for long-term storage only and need to be replaced with **pull-out shallow-depth pantry units and in general, pull-out drawers with handles that are U or C-shaped.**



- **Open shelving** can make visibility or finding as well as the use of towels, bedding, and plates easy. **Rolling carts or trolleys** are great for under counter and filing cabinets on wheels for under desktop.

COOKING: Look into **timers for stove tops** so they turn off after certain time. Learn to use a microwave for all sorts of cooking. **Controls** ideally should be in the front. Rear controls cannot be reached.

- There are a few **wall oven models that have doors that open on their side** that eliminates leaning over a hot oven door interior when removing food. Frigidaire produces one. Have a heat resistant counter top the same height as the oven racks from which one can slide a hot pan/casserole. **Wall ovens, like drop in stovetops,** have the advantage that they can be placed at desired not a pre-set height.
- **Look for OXO kitchen tools** for small changes that add up: salad spinner, cutting board, one-size-fits all frying pan cover; many small hand tools like jar openers, peelers, graters, etc.

OTHER: **Removal of throw rugs** unless a no-slip type (eg. at Lobster Supply) as small rugs are easy to trip on. Recessed in-floor door entry mats should be considered.

- **Bed heights** and other seating made level with wheel chair seat height.

WHEN BUILDING NEW HOUSE or ADDITION:

Many of these ideas will not add additional costs and avoid costly renovations later, and all will make living at home more possible with no barriers.

- **One bedroom and full and accessible bathroom on 1st floor;** second floors and lofts w/ladders can be for guests! **Basements are to be avoided** as stairs to them often are hazardous with steep rise and short runs.
- **Have ALL pass through and door openings between 32-36" wide** (and remember: NO THRESHOLDS). Doors might use translucent material for privacy and light.
- **Swing-away or swing clear hinges** will increase available passage width by up to 2"



- **Flooring should be firm and smooth: wood, cork, linoleum, certain tile that is not gloss finished are preferred;** only the shortest pile carpeting and never any thick carpet pads.
- **Have electrical wall light switches** placed lower or between 36-42" from floor.
- **Have electrical outlets** placed higher or 15-18 " from floor.
- **Design countertops and floors with colors that contrast** to each other so that aging eyes can see the difference between floors and counters.
- **Paint a thin color on step edges** so that one sees distinct steps.



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- **Kitchen counters** should be staggered in heights so that they range from 30-32” but include some work/task areas as low as 24” h.; also, have a **deeper over hang** that provides clearance for wheel chair and with a rounded or beveled edge maybe even a raised lip. Counter in front of kitchen sink should be 27”-30”h.
- **Pull out kitchen and bathroom drawers** are preferred to swing out doors with fixed shelving.
- **Bathroom vanity, kitchen or other task areas should be easily convertible** with removable doors and shelf sections when need calls for wheelchair access



ADDITIONAL DETAILS or “check list” for general contractor, plumber, and electrician.

SHOWER AREA:

- **Curbless shower** with trench drain and/or secondary central shower floor drain; waterproof membrane that goes under floor tile and under adjacent flooring
- **Shower faucet** controls are off set toward the outside of the shower; have anti-scald device;
- **Shower head** is on right side of shower entry and hand held shower on adjustable height slide bar are on backside (72” hose recommended); and
- **Re-enforcement in walls** for later hand bar possibility.

- **When designing new bathrooms, showers should be curb-less (NO curb at all as even an inch can be a barrier).** There are many fiberglass models available with or without formed seats; Optimum for use with a wheelchair would have 5' diameter.
- **For those who like to soak in a tub there are many walk-in model tubs available** and usually come with a hand-held showerhead. These units are easy to install in new construction or if one has a full basement underneath in order to make plumbing conversion easy. Models are advertised in AARP, on the web or at box stores like Home Depot and Lowe's. The simpler units run about \$2,000. Consider a heat light as an option in tub area so one does not feel "cold" as one waits for tub to fill or drain.
- **Sinks in all areas should be placed lower** or should be a "shallow" design so that use from a wheelchair is easy along with others more traditional use; also a protective cover placed over hot water pipes. Have open area under sink and counter so wheel chair can move under counter.



TOILET AREA:

- Enlarged area of reinforcement around side and back of toilet; and
- Toilet seat 15" (min)-19" high and 18" from sidewall.

ELECTRICAL:

- Motion activated light at either side of entry/exit doors and other key entry or exit areas;
- Exterior lit door bell or a lowered height;
- Light switches: 36-42" max. height and electrical outlets 15-18" height from floor;
- **Remote controls for high awning windows and heating or cooling units; also for garage doors and thermostats.**
- Both ambient and focused "task" lighting especially in kitchen and desk areas; and
- Additional outlets near work areas in study and living room; additional telephone jacks.

OTHER CONSIDERATIONS:

- **Main entryway: must be flush or ½" MAX lo profile from exterior to interior;**
 - also, 5' x 5' flat area on both sides of entry; also 5' width in U-shape, galley or galley/island kitchen arrangements';
 - 18" (min.) on right side of door for ease in pulling open;
 - also, a place to put down packages beside entry door(s); and
 - work with professionals on entry doors so they swing IN the right direction.
- **Circulation routes in the house are ideally 42" w.**



NOTE: Front load washers are easiest to use and a wise move for lower water and electrical bills, their tubs inside generally are NOT tilted so removal of wet clothes is not easy (as it is in Europe). A Panasonic unit that is built with tilted tub is not yet available in USA. Hopefully time will change that.

Technical improvements for living in place and with people with disabilities are reviewed in the general media, at Universal Design sites, and are reviewed by AARP, so stay abreast of new ideas and products, including monitoring devices for family and friends. This is a HOT topic as most people want to live at their homes.

Not included in this list is information on ramps or platform chair lifts; and interior residential elevators or electrical stair chairs. SEE: www.Ameriglide.com; www.inclinotor.com; www.econolift.com; www.disabilitysystem.com; American Elevator.

*****Link to a "This Old House" episode regarding universal design:
<http://www.thisoldhouse.com/toh/tv/video/0,,20683536,00.html>. It is the series about renovating the "Essex" house (season 32, episode 25). Click on "Scene 5" to get to the correct part of the program. There are some good ideas in this episode.

Ideas compiled in 2012-2014 by the Lasansky Family which has a built a large addition ADA compliant and has had varied experiences with disability issues in USA and abroad.

