Bathrooms for the Disabled
Disabilities affect people of all ages. Disabilities can be temporary or permanent, sudden or gradual. Disabilities can range from a broken leg to quadriplegic paralysis, from blindness to old age. Every disability is different and should be treated as such.

To a physically impaired or elderly person, the home can be an impenetrable barrier. Privacy and independence can become a thing of the past. But a house or a room that has been designed with accessibility in mind can bring independence back. A barrier-free design provides an environment that is easy-to-use and easy-to-maintain by all people—short, tall, young, old, active, and disabled.

Bathrooms are usually the most difficult room for the disabled to use. Generally they are too small for easy maneuvering with walking aids and bathtubs, toilets, and sinks are hard to use. However, as the independent disabled and the “age-in-place” population grows, accessible bathrooms will become essential. Bathrooms in new homes can be designed for a physically impaired individual or to adapt to the changing needs of the age-in-place population. Depending on the disabled person’s requirements, an existing bathroom can usually be made more accessible with minor changes.

Designing for accessibility means combining “handicap” products with standard products and a little imagination. Some standard products work well for various disabilities while others can be modified by the manufacturer. With the growing population of the disabled and elderly, many products are designed specifically to meet their needs without compromising on aesthetics.

**BATHROOM DESIGN**

It is best to involve the disabled or elderly person in the design or remodeling of their bathroom. Their needs and requirements will dictate the level of accessibility required.

Since wheelchairs require the greatest amount of space for maneuvering, the dimensions in this article meet their requirements. Most other disabilities can be accommodated within these dimensions.

**GENERAL INFORMATION**

If possible, have more than one accessible bathroom in the home. An accessible “powder room” near the front of the house will eliminate long trips down the hall. If only one bathroom is to be accessible, it should be nearest the disabled person’s bedroom.

Most wheelchairs and mechanical aids can maneuver in a clear 5'-0" x 5'-0" floor space. The clear space can include area under a wall hung toilet bowl and vanity/sink.

*Figure 3A and 1B*

All bathroom fixtures (bathtub, shower stall, toilet, sink) should have an unobstructed access path. Open floor space between the bathtub or shower stall and the toilet will allow for positioning of a wheelchair for easier in and out transferring.

**DOORS AND HARDWARE**

Maneuvering space within a bathroom is critical for a disabled person with or without wheelchairs. It is best, therefore, to swing the bathroom door out of the room. Also, should the disabled person fall in front of the door, outside help is possible.

Install a 36" wide door for wheelchair clearance and right-angled turns into the room. Smaller doors, if used, will be difficult to get through. A door pull installed on the hinge side of the door will allow the door to be closed as the user passes through. (drawing: see #2) A kickplate will protect the bottom of the door from wheelchair footrests.

Lever-type door handles should be used instead of standard door knobs. They are easier to operate for people with limited hand and arm control. Existing knobs can be replaced or special door knob converters are available at major hardware stores.

**SINKS AND VANITIES**

In an adaptable bathroom, the floor and wall behind the sink cabinet should
be finished so that a wall-hung sink can be installed later. Open space under sinks enables wheelchair users to position themselves close to the sink edge without having to stretch to reach the controls. A 2'-4" to 3'-0" counter height is most convenient for chairbound users. The knee space under sinks and vanities should be a minimum of 36" wide for easy maneuvering.

“Handicap” sinks are wall-hung and project approximately 27" from the wall. Standard bathroom sinks project 21"-24" from the wall and can be wall-hung, pedestal mounted, or a sink/vanity combination. Figure 3 These sinks can be used in the bathroom, but generally they lack adequate depth for body positioning. Consider the reaching abilities of the disabled user. If the user is wheelchair bound with limited reaching abilities, install a “handicap” sink in lieu of a standard sink.

A sink with a rear drain pipe will provide more usable knee space underneath. It’s a good idea to wrap exposed pipes with insulation to prevent burning or bruising of legs.

**TOILETS**

The standard toilet seat height is 16'. Standard toilets are usable by some disabled people if they are strong enough and if there are adequate supports (i.e., grab bars. “Handicap” toilets are available with a raised seat height (18'-20'). People who have trouble lowering themselves may find these toilets easier to use; they are also preferable for chairbound users transferring in and out of wheelchairs. Seat extenders can be attached to standard toilets, but may be unstable.

A wall-hung toilet can be set at an adjusted height for a disabled person. Wall-hung toilets and toilets with recessed bases allow for positioning of a wheelchair without the footrest hitting the bowl. Figure 4

**BATHTUBS**

With minor modifications, a standard bathtub can be used by most disabled people. A portable bathbench or chair can ease transferring to and from a wheelchair and be a help to people who have trouble lowering themselves into the bathtub. Figure 5 If there is adequate room at the head of the tub, consider installing an 18" deep built-in platform there. This will eliminating the need for a portable bathbench. The platform is used as a bathing seat or as a resting spot before lowering the body into the tub. (See Figure 2).

Many disabled people use the side of the bathtub as a resting spot as they get in and out. If possible, install a tub with a wide apron; avoid tub enclosures with metal tracks.

Fiberglass bathtubs and tub surrounds are available with built-in grab bars, bath seats, and nonslick surfaces. Talk to your local supplier for available accessories. Also, check with the primary user of the bathtub before ordering accessories. Grab bars may need to be in a specific location according to the user’s abilities. A non-slick surface will aid traction, but may prohibit a seated bather from sliding forward to the water controls or may irritate sensitive skin. Figure 6

Walk-in tubs feature a side wall door which allows the user to enter the tub directly instead of stepping over the edge. Many walk-in tubs are the same size as a standard bathtub (30\'\' x 60\') and can easily be incorporated into an existing bathroom. Some are available with a molded seat at wheelchair height for ease of transfer. Whirlpool systems, preset temperature controls, and grab bars are also available.

**SHOWER STALLS**

Many disabled people find showers easier to use than bathtubs. A shower stall should be a minimum of 36\'\' x 36\' wide. Larger stalls (36\'\' x 60\') have enough room for a wheelchair or an assistant if needed. Fiberglass shower stalls can be purchased with grab bars, benches, shower controls, and minimal curb heights. Before ordering, decide what accessories are needed and their proper location for the user.

Shower curbs can be difficult for people with weak legs, walkers, canes, or wheelchairs to negotiate. By incorporating...
ing a shower “area” into the bathroom, instead of a shower stall, a bather can directly enter the shower without negotiating a curb. In this scheme, the shower floor is merely an extension of the bathroom floor that slopes to a center drain. A maximum curb height of 1/2" can be used for water control.

Sometimes, just placing a portable bench or chair in an ordinary shower stall can make accessible, and the bench can be removed when not needed. An alternative is installing a hinged seat so that an able-bodied bather will have adequate room for showering when the seat is in the upright position.

**WATER CONTROLS**

Water controlling devices are an important part of an accessible bathroom design. Lever-type water controls, single-lever mixing valves, and goose neck faucets are easier for people with limited arm and hand movement to operate. Figure 10. There are even water faucets available with infrared sensors that trigger water flow when an object, such as a hand, enters the beam’s range. When the hand is removed, the valve closes to stop the water flow. Pressure balanced thermostatic faucets are valuable in preventing accidental scalding. These controls should always be used with bathers who have lost feeling in their skin.

Bathtub controls need to be within easy reach of the bather. This can be achieved by installing the controls at the edge of the tub for outside adjustment or on the back wall for adjustment inside the tub.

Shower controls should be located 38-42" above the floor. In a 36" x 36" shower stall, locate the controls on the side wall. In larger showers, center the water controls on the back wall for easy adjustment inside the shower.

An adjustable height shower head unit can be raised for standing bathers and lowered for wheelchair or seated bathers. Figure 11.

**ACCESSORIES**

Place storage compartments, medicine cabinets, towel bars, and light switches within easy reach of the disabled person. The bottom edge of the medicine cabinet and mirror should be no higher than 40" above the floor and be placed on a side wall for easy reach. A tilting mirror will allow either a standing or seated person to view themselves without difficulty. (See Figure 2 and 8). If linen closets or vanity cabinets are used in the bathroom, install slide-out baskets, drawers, or deep shelves for easy access.

**ELECTRICAL/LIGHTING**

A handy location for an outlet/light switch is on the front of the vanity; this eliminates the need to reach. Otherwise,
place light switches and electrical outlets at chair height: 38-42 above the floor. All outlets should be ground-fault circuit interrupters (GFI). People with limited hand and arm control may find rocker-type light switches easier to use than standard toggle switches.

Care should be taken in choosing the type and placement of light fixtures. Because of their seated position, wheelchair users may be affected by glare from lights. It may be necessary to relocate existing fixtures or install new fixtures to reduce glare. Consult Circular G4.1 for more information of lighting.

FLOORS

Bathroom floors need to be strong enough to withstand repeated point pressure from canes or crutches and rolling pressure from wheelchairs.

A low-maintenance flooring with a non-slip surface is a good choice. Textured tiles with a non-slip surface are also available. In addition, grouting between ceramic tiles helps with traction.

Avoid throw rugs, loose-fitting or plush carpets. If carpeting is desired, it should be low pile, well-fitted, and securely fastened to the floor.

CONCLUSION

Remember, since every disability is different, fixtures and accessories need to be chosen with care. Be sure to involve the disabled or elderly person from the beginning so that the end product meets their needs and requirements. By planning ahead for accessibility, the bathroom can continue to be convenient, functional, and usable.