

Bathroom Home Modifications

Column By:

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Recently I was asked how a family with a child with special needs could make their main level bathroom as accessible as possible without moving adjacent walls and getting into a major remodel? Or should they build a new house instead?

There is currently a bathtub in the 5' wide x 9' long room. The child has limited use of his legs and uses a wheelchair

To build or not to build a new house? This is a question I hear often.

Safety is a priority in the bathroom so lets take it one step at a time.

Doors: The existing door opening can be widened by 2" by using an offset hinge, You need at least a 2' 10" opening for a wheelchair, so if your door is 2' 8" ,these hinges will work for you.

If you have to replace the door install a 3'-0" wide door or a pocket door. However pocket doors are difficult for people with limited hand use to operate. A swinging door will have to swing out because there will not be enough space in the bathroom for a person in a wheelchair to close the door. Also this will allow you to get in if your assistance is needed in case of an emergency

Replace the door knob with a lever handle. You may also use a rubber lever that slips over the door knob. You may also consider installing an emergency alarm switch no higher than 18" above the floor A telephone with an alarm button can serve the same purpose.

Floor Surface: If you keep your existing floor, apply a slip resistant glaze on the surface. A good product for existing ceramic tile, stone or even agglomerates is called

Slip Tech. Remove or tape down any rugs. If you prefer carpet choose a low pile anti-bacterial , indoor –outdoor type. If it is a new tile floor select a tile with a minimum coefficient of friction for slip resistance (wet .60,dry.70). Even better yet, use an abrasive grain (cof. Wet.70,dry.80) non-slip tile. I like to use an accent boarder around the room and in the shower as well for visual definition.

Sink: You might want to consider a power adjustable sink. ADAS Systems available at Accessible Environments Inc. 800-643-9860. Tell them Mr. Schwab sent you to receive the best deal. If you want to keep a traditional cabinet sink you should replace it with one that is no higher than 34". That will work for seated and standing users. 32" high would be best for your child but may be a strain on the backs of those in the family who are taller and standing.

Choose a shallow sink bowl 6-1/2" deep. A barrier free overhang lav. Features a 3" overhang at the front of the counter and enhances accessibility. Kohler. Replace the hot and cold knobs with a single lever faucet. Consider moving it towards the front at the wall side of the sink. If limited hand strength is a real concern install a motion sensor sink. This will also conserve water. You may want to install a hose type as well so the child could wash her hair without going into the shower.

For the cabinet doors on the vanity, install slide away door glides that allow the door to slide back inside the cabinet, allowing open knee space underneath. A minimum 29" high x 32"- 36" wide clear space should be provided under the sink for access.

Always provide a pipe insulator inside to avoid leg burns. Two good products are Plumberex and Truebro: The countertop should always have rounded or bevel edges edges with color contrasting edging. A product called Kuehn Bevel will help those with limited vision determine the edge of the countertop with contrasting colored edges.

The mirror above the sink should be tilted and lowered to just above the back splash so it can be used while seated. You might want to consider an Anti-Fog mirror, activated with the flip of a switch: "Electric Mirror" or "Clear Mirror". A side swing makeup mirror may be a good solution for close up viewing if anyone in the family has limited eyesight. A unit made by Baci product M-9 is wall mounted next to the vanity and has a integral GFCI grounded outlet.

Install Vanity lighting at both sides of the mirror. Lighting located above only, will cast shadows down on the face. Also install a full-length mirror to allow full body viewing while seated. For storage drawers adjacent the sink use full extension slide hardware, which allows for full viewing and easy reach ability. Linen closets should not be deeper than 2'-0" for the same accessibility reasons.

Toilet: The ideal toilet height varies according to physical capabilities of the family members. A standard toilet may be too low for those with limited leg strength while a toilet seat that is 19" or higher may be awkward for wheelchair users or short people and kids.

. The stool height should be as close to her wheelchair height as much as possible for ease of transfer. Choose a toilet that has the flush control on the open side, it should be able to be used with low effort and minimum finger use. You can install an offset flange underneath the toilet that will let you raise the toilet 2 1/2" - 3" with a product called "Toilevator" or you can use a toilet lift seat that range from 2"-4 1/2" by "Sani-Med" The same Co. makes these toilet seats with integral "sheltering arms" These are handles attached to each side of the seat that allow one to push up or grab onto for transfer. At very least you will want to install fold down grab bars at each side of the toilet. Choose an elongated toilet bowl.

A product for transferring from a wheel chair to a toilet is a fold down transfer seat available at “Access Able Designs, Inc.” These effectively widen the toilet seat and give a person a solid surface to push off of when transferring from the wheelchair to the toilet. With this product you never actually touch the stool itself. Toilet stools typically are not designed for this kind of force and can pull out of their mounts with an unbalanced force causing them to “slide away”.

In new construction, I specify wall board backed by ¾” marine grade ply-wood so you can install grab bars anywhere you choose. The toilet should be located adjacent a side wall in new construction for placement of side grab bars. Since this is a home-modification and you said you do not want to get into a big remodel I would like to recommend a grab bar fastening product originally designed for the space shuttle called “Wingits®”. Another is called Toggler® brand anchors used for steel studs. Wingits hold up to 1000 lbs when installed with ½” wallboard and ceramic tile or in a ¼”-thick fiberglass tub surround. In 5/8” wallboard alone they hold 450 lbs; and in ½” wallboard they hold up to 250lbs. I think these details are important as you did not mention if your Grandmother was of large stature. Whatever methods for grab bar attachment you choose always make sure they hold at least 250 #s. Always follow mfrs. instructions for installation.

Towel racks are not designed to be grab bars. You might want to buy a couple more Wingits® and install a horizontal grab bar to replace the towel bar. When people are falling they will grab anything . The bar can then serve a dual purpose. Grab bars now come in all kinds of colors and finishes If you choose to remodel the bathroom down to the studs use 2x8 blocking which will provide room for adjustments. Always use 16d nails for connection to the wall studs. Or better yet install plywood as mentioned above all around the bathroom.

Tub/Shower . Replace the tub with a roll/walk in shower. There are several prefab units on the market. There are showers that are curb less and have a collapsible water membrane that keeps the water in the shower. Several good Mfrs. Are ”Best –Bath” “Aqua- Bath, “Aqua Glass” ,”Barrier Free Architecturals” ,”Bath Ease Inc.”, “Mustee”,2, “ Kohler” “Lasco”, and “National”, Pre-fabricated units will have integral grab bars.

Install a shower curtain with weights to keep it down .Curtains are less cumbersome than swinging or sliding doors. Avoid dark colored curtains as these block out light and tend to invite mold. Try to find a curtain that has a 2’-0” border across the top that allows light to come through. Install the curtain rod the same as you would a grab bar so that it also can withstand a pulling force of 250#s min. If you prefer a door make sure it is tempered, laminated safety glass or acrylic to avoid injury.

Install a vapor resistant light in the shower . A good product is the Iris Line, made by Cooper lighting. A fold down shower seat should be at least 15” wide. A good product is one with 4 legs that mounts to any roll in shower without the need for wall re-enforcement. The stainless steel frame holds up to 420 lbs. It measures a nice 32” wide x 21”D. Accessable Designs,Inc.

The shower controls should be offset towards the room side of the shower so you don't have to reach or bend over to turn on the controls. The controls should have pressure balancing valves and a scald protection device available from Powers. This shower control has LCD temperature display within 1/10 of a degree and a ergonomic lever handle. It also has a high temperature limit stop. .

Use a slide bar showerhead. This adjusts easily to accommodate a seated or standing bather. "Alsons" has a dual purpose product that combines the features of a hand held shower with the security of a grab bar.. The full spray hand shower has a push button pause control, hoses come up to 70". This is model PB462. Delta also has a model 912A which is chrome while Alsons is white, otherwise similar. You can find the Delta model at your nearest home depot. It also has a pause control and comes with a 5'-0" hose. A 86" hose can also be purchased and is recommended. The Alsons company also has a ADA compliant Shower Spa®body spray system that combines the features of a hand shower and the luxury of a whirlpool. It has two body sprays on the side wall and one single body spray under the seat. Another good shower system is "Jaclo:"

Lighting and Ventilation: A motion sensing light switch may be a good idea. Make sure there is a nightlight in the bathroom and that it is always on, if you do not install a motion detector switch. Good lighting in the bathroom is one of the most important considerations to avoid accidents. This facilitates grooming and helps in finding the correct medicine bottle. You might want to hang a magnifying glass immediately near the medicine cabinet to solve the problem of reading the small print on prescription bottles

. Dimmer switches will cut glare and heat when lights are not being used for close work. Choose lighting fixtures with blue UL labels that denote that the lights have been approved by the Underwriters Laboratory for use close to a water source. Make sure your outlet has a ground fault interrupter(GFI) that is an instantaneous circuit cut-off in emergencies. Make sure a licensed electrician installs these.

Skylights should be made of white opal acrylic that diffuses and softens the light, as opposed to clear glass or plexi-glass that projects a hard light. Since this bathroom is on the first floor this may not be an issue. However I have specified a tubular skylight in the past "Suntunel" by Velux that can stretch 20'-0": through a duct. This can go through the roof down through a shaft in the second floor and end at your bathroom ceiling, and still be very luminous.

Regular skylights should have Ultra-Violet filters or an easily operated louvered shade that prevents sun damage and reduces sun-generated heat, of great concern in warm climates. Check frequently for mold build-up, near and in the sky light.

Motion Sensor Ventilation systems automatically turn on when you enter the room and you can adjust the shut off time from anywhere from 5 to 60 minutes after motion stops. "Braun/ Nutone".

Storage: Accessibility is of utmost concern here. Open shelves are a good idea. You might want to consider lazy Susans in a cabinet. Install them 34-36” above the floor to reduce bending over and back strain.

Drawers should always be the full extension type and linen closets should not be deeper than 24” so you can reach in without strain.

I hope this helps resolve some home improvement concerns in your existing home or things to think about in a new home. My book *Universal Designed homes for the 21st Century*, available through EP magazine has 102 home plans and 20 pages room by room features and benefits for the accessible home.