



Life-Cycle Housing: Evaluate Before Buying, Building, or Remodeling

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Accessible housing is a term developed in the 1960s. The American National Standards Institute (ANSI) published the first voluntary standard on accessible design. These standards recommend fixed features designed primarily to meet the needs of those persons with major disabilities (such as disabled World War II veterans and polio or automobile accident victims).

Adaptable housing provides for flexible accessible design. It works equally well for the able-bodied or the physically disabled. An adaptable housing unit is an accessible dwelling unit. However, it also has features that may eliminate special appearances and/or meet the needs of the individual user by adding or adjusting elements. An adaptable housing unit includes all of the accessible features described by national standards (such as wider doors, clear floor space, accessible routes) while allowing a choice of certain adjustable features or fixed accessible features.

Most people take for granted their ability to live and function easily at home. According to research, four out of five people will eventually have some physical problem that could make it difficult to live independently.

A person with a broken leg or a stroke could need crutches, a walker, or a wheelchair. A heart attack victim or an older person may have limited movement. The design or arrangement of a house can make life difficult or easy for such a person.

Living independently at home is important to most people. People want to be able to have mobility, take care of themselves, cook meals, do laundry, and clean the house. People also want guests to be able to get around easily and comfortably.

Fortunately, people do not have to live with poorly arranged living spaces. New, existing, and adapted homes that use life-cycle or adaptable design ideas can help people live independently. With more people living longer, adaptable housing makes economic sense because it costs less to include these features during the planning stage.

A life-cycle house includes fixed accessible features like wider doors and halls, open floor spaces, and clear traffic patterns. It also provides for adaptable features, such as wall reinforcement for grab bars and removable base cabinets for future knee space.

Everyone hopes that his or her house will be easy to sell in the future. Adaptable features make a housing unit more appealing to all ages, and increase occupant comfort and independence while adding to property value. A life-cycle house can be made attractive through the use of decorator finishes, materials, and modern building and landscaping techniques.

Take a Look at Your Home

Do you want a home that will adjust as your needs change? Use the following checklist to identify possible problems or areas that might need to be changed. Ask yourself this question about your present home or a house you would consider buying, building, or renting: "Could I continue to live in this house if I had a broken leg, arthritis, or were using a walker or a wheelchair?"

Getting Into and Around the House (Figures 1 to 4)

- There is at least one way (a ramp or no steps) to enter the house without climbing steps.
- There is a curb cut from the street level to the sidewalk. (1)
- There is enough entry area space to allow building a ramp at least five-feet wide. The slope is no steeper than five percent with a rise of 12 inches for each 12 feet of distance. Landing space includes 18 to 24 inches on the latch side of the door. (1, 2, 3)
- The clear open space at entries and other doors is a minimum of 32 inches wide (36 inches preferred). (4)

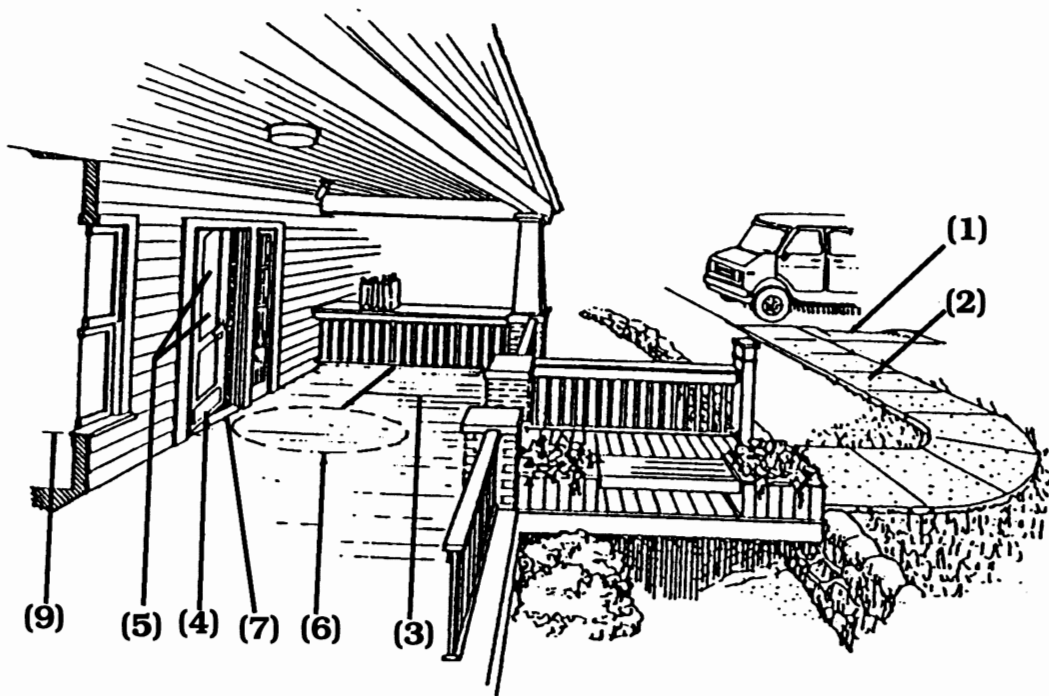


Figure 1.

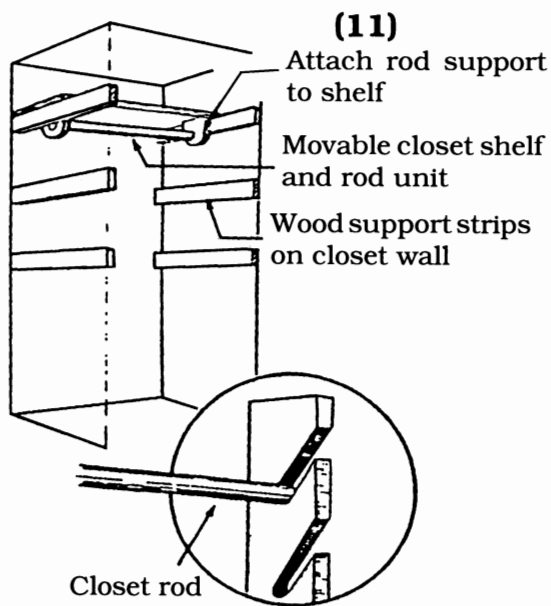


Figure 1a.

- A lowered safety peephole is installed at the proper height for you on exterior doors. (5)
- There is at least one bedroom and one bathroom on the ground or entry level with no steps to climb.
- Kitchen, bathroom, one bedroom, and carport/garage have open space free and clear of obstructions. (6)

- Hallways are 48 inches wide to allow a wheelchair, a person using walker, or two people to pass or turn around.
- Doorways have no or low thresholds. Thresholds should be no higher than one-half inch (three-fourths inch for exterior doors). (7)
- There is storage space in the kitchen, bath, bedroom, workroom/shop, and laundry at reachable heights for short or tall people and wheelchair users. (8)
- Windows are low enough to see out of when sitting. The controls are between 18 to 56 inches above the floor (40 inches is a good average). (9)
- Interior stair risers are no higher than six to seven inches and the treads 11 to 12 inches deep with no open risers. Risers on exterior stairs are no higher than four inches. (10)
- Closet rods are reachable by all people at a rod height of 42 to 72 inches from the floor. (11)
- There is at least one counter in the kitchen, bath, and study or office with clear knee space (30 inches high, 32 inches deep). (12)

Kitchen and Laundry (Figure 2)

- There is refrigerator and freezer space accessible to users of all heights, including wheelchair users. (13)
- Dishwasher, clothes washer, and dryer are front loading. (14)
- Toe space at bottom of kitchen base cabinets is eight and three-fourths to 10 inches high and six to eight inches deep for wheelchair footrest. (15)
- Bottom of oven is 30 inches above kitchen floor surface.
- Range, cook top, oven, dishwasher, garbage disposal, and compactor controls can be reached by a seated person. (16)
- At least one kitchen sink is shallow (five to six and one-half inches deep), with a drain at the rear. The hot water supply and waste pipes under the sink are insulated to protect a seated user from burns on legs. (17)
- Sink faucet is single control (lever or push type) with a long, rounded handle, accompanied by a sprayer hose. (18)

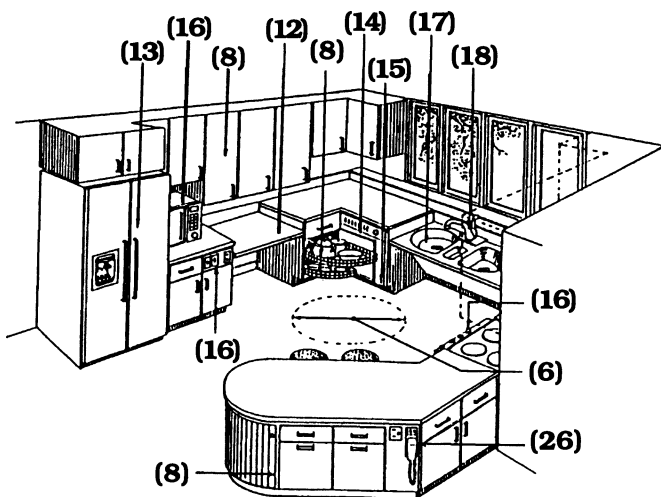


Figure 2.

Bathroom (Figure 3)

- Bathroom is large enough (five by five feet in diameter) for a wheelchair or walker user to use all fixtures (sink, toilet, shower, and tub). (19)
- There is at least 32 inches clear space on one side of the toilet and 42 inches clear space in front. (20)
- Toilet seat height is 15 to 19 inches above the floor. (21)
- Bathroom mirror bottom is no more than 40 inches above the floor, with the top at 74 inches. A full-length mirror hung horizontally over the lavatory counter provides view for any user. (22)
- Bathtub height is 16 to 20 inches, and water controls are 18 inches above the tub rim. The controls are where they can be operated from outside the tub. (23)
- Roll-in shower size is a minimum of 60 inches long by 40 inches wide for wheelchair use.
- Seat in shower is 16 to 19 inches high, 16 inches wide, and 16 inches deep.

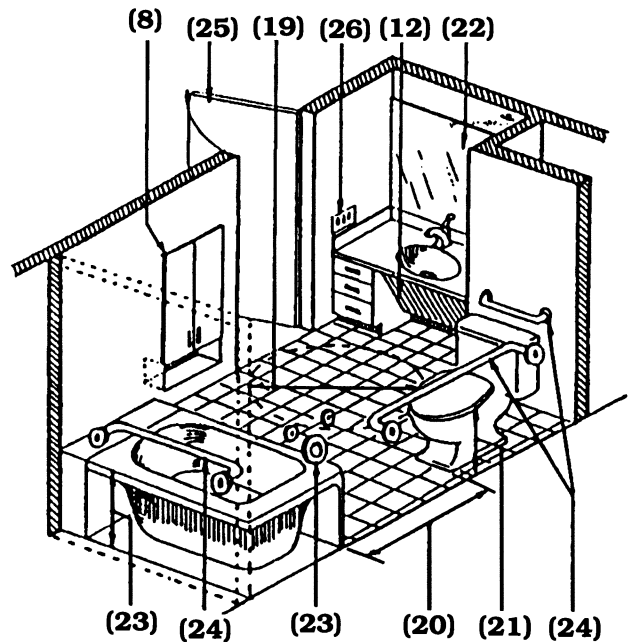


Figure 3.

- An adjustable shower head with a single control faucet is placed 42 to 72 inches above the floor. The spray unit is at least 60 inches long and is usable as a fixed or hand-held shower.
- There are grab bars at the toilet, tub, and shower. (24)
- Bathroom door opens out to allow more space inside the room and to help if someone falls in the bathroom. (25)
- Flooring is slip-resistant, especially when wet.

Safety (Figures 3 and 4)

- Smoke detectors and fire extinguishers are near kitchen and sleeping areas. Fire extinguishers should be mounted about 40 inches above the floor.
- Flooring is slip- and skid-resistant. Carpet, if used, is a low-pile type that allows a wheelchair to roll easily.
- Wall switches, phones, and temperature thermostat can be reached from a wheelchair (40 to 48 inches above floor). (26)
- Doors to stairs or other hazardous areas have ridged, beaded, or roughened door knobs or handles to signal danger. (27)
- Stair handrails are mounted 30 to 34 inches above the floor. They extend 12 to 18 inches beyond the top and bottom step. (10)
- Stairs are well-lighted and the top and bottom steps are marked to show the beginning and end of the steps.

Information Sources

An American Association of Retired Persons booklet, *The DoAble Renewable Home*, provides information on physical limitations people commonly experience as they grow older. In addition, there are excellent sketches of low-cost ideas for adapting an existing home to allow for more independence. You may order this booklet by writing the American Association of Retired Persons, Consumer Affairs Section, 601 E Street, NW, Washington, DC 20077.

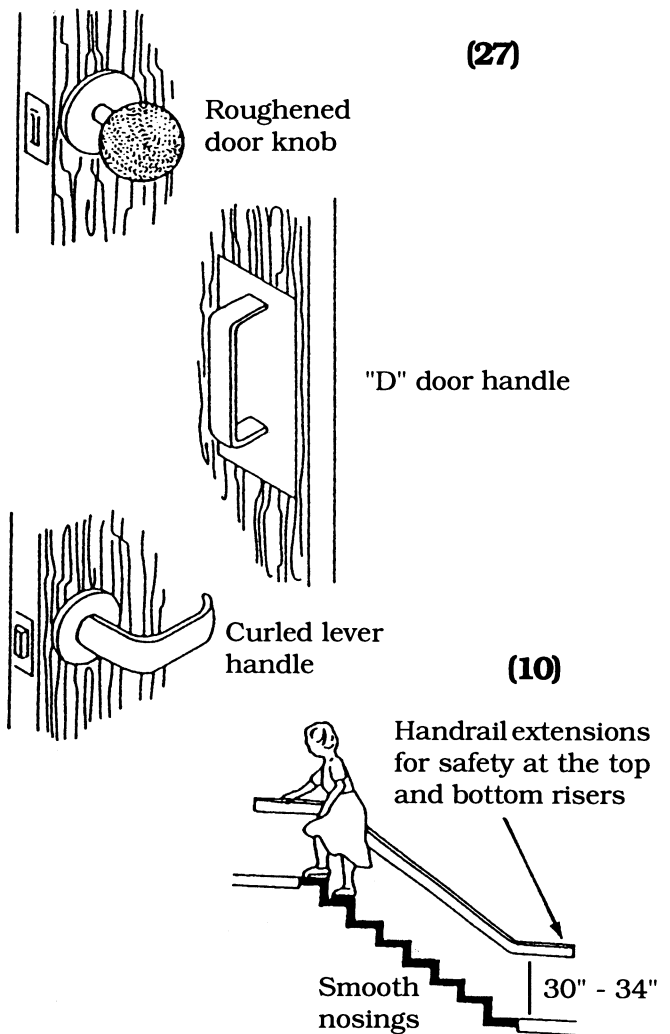


Figure 4.

The Center for Universal Design at North Carolina State University is another source of information. The purposes of this center are to: conduct research on ways to improve accessible housing; involve faculty and students from many areas of the university; and offer training to persons with disabilities, parents with disabled children, and professionals from the building industry and the field of rehabilitation. For information, contact the center at: The Center for Universal Design, North Carolina State University, Box 8613, Raleigh, NC 27695-8613 or call (800) 647-6777.

Summary

Housing planned and constructed to be accessible or adaptable reduces future costs. Communities that provide accessible housing across the life-cycle are more successful in attracting and retaining older residents. Developers and builders who build life-cycle housing find a ready and growing market for their products. Consumers

who build, buy, remodel, or rent life-cycle housing are better able to maintain independence and the self-esteem that goes with independence. In addition, these consumers find that temporary or permanent physical disabilities are much easier to deal with when living in a life-cycle house.

In summary, life-cycle housing is convenient, conserves human energy, and can be as aesthetically pleasing as the imagination allows. While planning for future changes helps keep dollar costs down, the real reward is continued independence!

Resources

A Consumer's Guide to Home Adaptations. 1989. Adaptive Environments Center, 374 Congress Street, Suite 301, Boston, MA 02210.

American National Standard for Buildings and Facilities — Providing Accessible and Usability for Physically Handicapped People (A117.1-1986). American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018, Phone (212) 354-3300.

Bostrom, James A., Mace, Ronald L., and Long, Marion. *Adaptable Housing: A Technical Manual for Implementing Adaptable Dwelling Unit Specifications.* 1987. U.S. Department of Housing and Urban Development - HUD USER, P.O. Box 6091, Rockville, MD 20850, Phone (800) 245-2691. In NC, contact HUD at 415 North Edgeworth St., Greensboro, NC 27401-2107, Phone (919) 333-5361.

Center for Accessible Housing, North Carolina State University, P.O. Box 8613, Raleigh, NC 27695-8613, Phone (919) 515-3082.

Gardner (Mahrer), Linda L. *Kitchen Adaptations for Independent Living.* 1989. Clemson University Cooperative Extension Service, Clemson, SC 29634, Phone (803) 656-3145.

Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped. 1989. The North Carolina Department of Insurance, Volume I-C, North Carolina State Building Code General Construction, P.O. Box 26387, Raleigh, NC 27611, Phone (919) 733-3901.

North Carolina Human Resource Department, Division of Aging, 693 Palmer Drive, Raleigh, NC 27603, Phone (919) 733-3983.

Paralyzed Veterans of America, 801 18th Street, NW, Washington, DC 20006, Phone (202) 872-1300.

Raschko, Bettyann B. *Housing Interiors for the Disabled and Elderly.* 1982. Van Nostrand Reinhold, 7625 Empire Drive, Florence, KY 41041, Phone (800) 926-2665.

The Accessible Design File. 1991. Barrier Free Environments, Inc., Van Nostrand Reinhold, 87625 Empire Drive, Florence, KY 41042, Phone (800) 926-2665.

The DoAble Renewable Home: Making Your Home Fit Your Needs. 1991. American Association of Retired Persons, 601 E Street, NW, Washington, DC 20077, Phone (202) 728-4470.

Uniform Federal Accessibility Standards FED-STD-795. 1988. U.S. Architectural and Transportation Barriers Compliance Board, 1111 18th Street, NW, Suite 501, Washington, DC 20036-3894, Phone (202) 653-7834.

Sources

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The Oklahoma Cooperative Extension Service

Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state and local governments that delivers information to help people help themselves through the land-grant university system.

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- Extension programs are nonpolitical, objective and based on factual information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations and the mass media.
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