

EASY
LIVING
WITH
UNIVERSAL
DESIGN



Preface

Easy living with **Universal Design** is a concept that can appeal to everyone. A home that is universally designed is a home with features that increase the usability of the home by people of all ages, sizes and abilities, and enhances the ability of all residents to live independently in the home as long as possible.

In universally designed homes shelving, appliances, closets and fixtures are designed to accommodate persons of varying heights, ages and abilities to include individuals in wheelchairs. Doors, doorways and halls are widened to accommodate wheelchairs. Walls in hallways are equipped with railings to facilitate walking. Bathtubs and commodes have grab bars attached for ease of use. Yet, as you will see from examples in this packet, universal design is both practical and beautiful. Existing homes can be modified or retrofitted to become more universally accessible.

This packet is a product of the Prince William Aging in Place Committee, part of whose mission is to promote the concepts of universal design and home modification. The Aging in Place Committee is a sub-committee of the Prince William Long Term Care Coordinating Committee, under the direction of the Prince William Area Agency on Aging. Committee members are listed on page 22.

This packet is a preliminary educational tool. It will educate the consumer on how to begin modifying their existing home into a design that fits every lifestyle, or provide Internet resources to contact, should the consumer wish to build a new home. It includes resources available locally, regionally and nationally. Space limitations prevent the listing of all available resources in the area.

If you cannot find the information you need, or have any questions, do not hesitate to call the Prince William Area Agency on Aging. Inclusion of a specific agency, program, service, or product does not imply a recommendation or endorsement.

The Prince William Area Agency on Aging
7987 Ashton Avenue, Suite 231
Manassas, Virginia 20109
703-792-6400
www.pwcgov.org/aoa

The PWAAA serves older adults, their families and caregivers in the tri-jurisdictional area of Prince William County, the City of Manassas and the City of Manassas Park.

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EASY LIVING – MODIFYING YOUR HOME ENVIRONMENT

Universal Design vs. Traditional Design: *What is Universal Design?*

Universal Design is a design for homes that has features that are relatively easier to use in comparison to the traditional home design. It is a design of products and environments that can be used and experienced by people of all ages and abilities. Universal Design enhances the comfort, safety, and convenience of your home regardless of age, size, or mobility. It doesn't matter if you are a family with young children, an individual with permanent or temporary disability, or an older adult who wants to remain independent at home. Just as its name "universal" implies, this design fits every lifestyle.

What Does It Take to Make a Home Universal?

There are a number of items to consider when remodeling your home to a universal environment. Although your home may not require all of the suggestions listed, it is wise to think progressively as to what may be needed in the future or even for family members with physical limitations who make regular visits to your home.

General Modifications

- Adapt lower floor of home for possible one level living
- Increase incandescent general and specific task lighting
- Easy garage or parking access
- One step or no step entry
- 36" wide doorways with off-set hinges on doors
- Levered door handles instead of knobs
- Electrical outlets at 18" instead of 12"
- Easy to open or lock patio doors and screens
- Light switches at 42" instead of 48"
- Adjustable controls on light switches
- Luminous switches in bedrooms, baths, and hallways
- Strobe light or vibrator-assisted smoke and burglar alarms
- Lower window sills especially for windows on the street
- Programmable thermostats for heating and cooling
- Contrast colors between floor and walls
- Color borders around floor and counter-top edges
- Non-skid flooring
- Matte finish paint, flooring and counter-tops
- Non-glare glass on art work
- Peep hole at a low height
- Incorporation of emergency response system installed or wearable

Bathroom

- Lever faucets and faucet mixers with anti-scald valves
- Temperature controlled shower and tub fixtures
- Stall shower with a low threshold and shower seat
- Grab bars at back and sides of shower, tub, and toilet or wall reinforcement for later installation
- Bathrooms with turn around and transfer space for walker or wheelchair (36" x 36")
- Higher bathroom counters
- Telephone jack
- Installation of medical response device

Kitchen

- Kitchen cabinets with pull-out shelves and lazy susans
- Easy to grasp cabinet knobs or pulls
- Task lighting under counters
- Cook-top with front controls
- Side-by-side refrigerator
- Adjustable upper shelves and pull out lower shelves
- Variety in kitchen counter height – some as low as table height (30")
- Gas sensor near gas cooking, water heater, and gas furnace
- Color or pattern borders at counter edges



Living Room

- Seating at least 18" off the floor
- Chairs with sturdy arms

BEFORE YOU START: Things to Consider Prior to Installing Universal Design Features to Your Home

PRE-CONSTRUCTION PHASE

An advantage to including universal design in the pre-construction phase is that it is cheaper than remodeling and adding these features after the house has been built according to traditional design. Currently, contractors are not required by law to incorporate universal design into their building plans. Therefore, if decisions are not made during the pre-construction phase, homeowners will most likely have to consider the additional expense of remodeling the home in the future.

Another point to consider, especially for young homeowners, is whether or not they will be residing in the home long term. Having the benefits of universal design in the home is advantageous for individuals of all ages. But one must also bear in mind, the fact that if he or she decides to move to another home, there is no guarantee that the next home will have the same features.

REMODIFICATION PHASE

Although it is cheaper to have universal design features added during the home building process, there are still options for homeowners who have not had this opportunity. Achieving the most desirable outcome can be an overwhelming task for the homeowner. An easy solution to relieving some of the stress is to start out in small steps. Some projects are relatively easy and inexpensive such as installing grab bars, levered doorknobs, push/kick plates on doors, stair railings, etc.

FINANCING OPTIONS

Home Equity Loan or Line of Credit – Applying for a home equity loan or line of credit through your bank or mortgage lender would be ideal for larger projects. In general terms, this option allows lenders to use the homeowner's equity that has already accrued as collateral to determine qualifications for loan approval and amounts. Once the owner pays the loan, equity is restored. (Contact your bank, lender, or financial advisor for additional information).

Reverse Mortgages – A reverse mortgage is a special type of loan used by homeowners age 62 and older to convert part of the equity in their homes into tax-free cash without having to sell the home, give up title or take on a new monthly payment. Instead of making monthly payments to a lender, the payments are "reversed" and a lender makes payments to you. Eligible property types include single-family homes, manufactured homes built after 1976, qualified condominiums, and townhouses. For additional information, log onto www.reversemortgage.org

CONSULT THE EXPERTISE OF A CERTIFIED AGING-IN-PLACE SPECIALIST (CAPS)

What is a Certified Aging-In-Place Specialist (CAPS)? The CAPS Program was created by the Remodelers Council of the National Association of Home Builders (NAHB) along with the NAHB Research Center, NAHB Seniors Housing Council and AARP to address the needs of consumers who desire to make their houses a “home for a lifetime” in spite of one’s age or capabilities. A Certified Aging-In-Place Specialist receives training in areas that are specific to:

- the unique needs of the older adult population
- aging-in-place home modifications
- common remodeling projects
- solutions to common barriers

The CAPS program also exceeds the concerns of design to address issues regarding codes and standards, remodeling expenses and projects, product ideas, and helpful resources needed to provide comprehensive solutions. Continuing education programs and participation in community service are required by CAPS graduates in order to remain current on the issues regarding home modification and the needs of its consumers.

How Do I Locate a Certified Aging-In-Place Specialist?

To find a CAPS in the Northern Virginia region, log onto the AARP website www.aarp.org. Type the word “caps” in the search box, click on the “Certified Aging-In-Place” link, then follow the instructions for downloading the CAPS directory, or enter the criteria to display the listings for Northern Virginia. It is important to bear in mind that CAPS are not remodelers, they are essentially hired consultants to guide and assist you according to your needs and desires.



HOW DO I GET STARTED?

If you are unsure about where to begin, the following checklist will assist you in deciding what features are appropriate for your home. The list is quite extensive, therefore do not become overwhelmed in thinking that your home requires everything on the list. Remember, beginning with small projects, then moving on to bigger projects is a reasonable and economical approach. Use this checklist as you walk through your home and check the items that are candidates for change.

UNIVERSAL DESIGN HOME MODIFICATION CHECKLIST

A thorough guide to redefining your home

I. ENTRANCES

- ___ 1. Roof covers
- ___ 2. Exterior surfaces slip resistant (e.g., textured paint, aggregate concrete)
- ___ 3. Ramps with railings
- ___ 4. Railings on steps and porches
- ___ 5. Bench or shelf inside and outside by door (for packages)
- ___ 6. Doorbell lit
- ___ 7. Lighting
 - Additional fixtures and wattage
 - Sensor floodlights

II. DOORS AND DOORWAYS

A. Entrance Doors:

- ___ 1. Thresholds as low and beveled as possible
- ___ 2. Lever handles
- ___ 3. Single locking mechanism (e.g., dead bolt only)
- ___ 4. Peephole(s)
- ___ 5. Push/Kick plates on bottom or side of door
- ___ 6. Mail slot in door instead of outside next to door
- ___ 7. Automatic closures
 - Good, because effort needed to open and keep door open
 - Bad, because effort needed to open and keep door open
- ___ 8. Storm doors removed or with auxiliary handle
- ___ 9. Sidelights next to door (to increase light and add security)
- ___ 10. Garage door opener(s)

B. Interior Doors:

- 1. Pocket doors (need wider wall construction)
- 2. Sliding/Track protrude less into room
- 3. Bifolds protrude less into room
- 4. Folding (accordion) protrude less into room
- 5. Swinging double leaf (western/kitchen style) is pushed from one or both sides

C. Interior Hardware:

- 1. Lever handles
- 2. Auxiliary (extra) loop handles added
- 3. Swing-Away hinges

D. Doorways:

- 1. Doors at least 32" – 36" wide
- 2. Doors eliminated as possible
- 3. Reversed door swings (e.g., swing out of bathroom instead of into)
- 4. Interior thresholds eliminated (to make floor surfaces level)
- 5. Thresholds only ¼" - ½" and beveled as much as possible
- 6. Raised thresholds in contrasting color (to improve visibility)

III. WINDOWS

A. Location:

- 1. 18" – 36" from floor

B. Styles:

- 1. Casement
- 2. Awning
- 3. Sliding

C. Handles:

- 1. Crank
- 2. Single-lever lock
- 3. Auxiliary handle (e.g. added to double-hung windows)

IV. WALLS, CEILINGS AND FLOORS

A. Wall and Ceiling Finishes:

- 1. Light colored (to reflect light)
- 2. Flat, not glossy (to reduce glare)

B. General:

- 1. Smooth transitions between floor types (e.g., carpet and wood)
- 2. Light, bright colors (to improve visibility)
- 3. Contrasting colors or borders (to define areas)
- 4. Contrast floor and upholstery colors

C. Flooring:

- 1. Carpet – short, level (not sculptured), high density pile; static resistant
- 2. Vinyl Flooring – skid resistant
- 3. Wood – non-glare satin, skid resistant finish
- 4. Ceramic tile – skid resistant

V. STAIRWAYS

A. General:

- 1. Lighting increased
- 2. Step heights and depths consistent

B. Stair Coverings:

- 1. Treads non-slip
- 2. Treads have no pattern
- 3. Edges of steps have contrasting color

C. Railings:

- 1. Both sides
- 2. Contrast railing and wall colors

VI. ELECTRICAL

A. Lighting:

- 1. Fixtures with more than one bulb
- 2. Wall sconces
- 3. Indirect lighting (e.g., under cabinets) to reduce glare
- 4. Closet lighting
- 5. Install “Clapper” device
- 6. Remote controls

B. Light Switches:

- 1. 38” – 48” from floor (same as thermostat)
- 2. Located at each doorway
- 3. Large rocker type
- 4. Touch sensitive type
- 5. Contrast plate and wall colors (e.g., not white wall with white plate)

C. Receptacles

- 1. 18” – 27” from floor
- 2. Contrast plate and wall colors

D. Smoke Detectors

- 1. Direct wired with battery back-up
- 2. Linked to Emergency Response Team

E. Telephones

- 1. Multiple phone jacks
- 2. Cordless phones

VII. STORAGE CLOSETS

A. Doors:

- 1. Eliminate as possible
- 2. Bifold or sliding/track

B. Interior:

- 1. Closet organizers adjustable
- 2. Rods and shelving pull out
- 3. Upper and lower hanging rods

VIII. BATHROOMS

A. Tub/Shower:

- 1. Doors trackless
- 2. Shower curtain rod
- 3. Floor non-skid
- 4. Hand-held shower, clipped to wall
- 5. Faucet single-lever
- 6. Seat in tub/shower

B. Sink Area:

- 1. Eliminate cabinet vanity (insulate drain/trap to prevent burns)
- 2. Faucet single-lever
- 3. Medicine cabinet/mirror with bottom 40” from floor or tilted down
- 4. Shelving open
- 5. Other items (towel bars, soap/toothbrush holders) 48” from floor

C. Grab Bars:

- 1. Toilet – behind and to side (33” – 36” or personal height)
- 2. Tub/shower – inside and outside
- 3. Contrasting color (to improve visibility)

IX. KITCHENS

A. Cabinetry:

- 1. Shelving open (for easier access)
- 2. Glass doors (for easier visibility)
- 3. Lower wall cabinets (for easier access)
- 4. Shelving adjustable and pull-out
- 5. Racks and shelves on interior of doors
- 6. Lazy susans
- 7. Handles 1 1/2" x 4" loop type
- 8. Handles contrasting colors

B. Countertops:

- 1. Mobile unit(s)
- 2. Lower and higher in some areas
- 3. Depths decreased (from 24" to 19") in some areas
- 4. Corners rounded or 45 degree angled
- 5. Contrasting edge color

C. Sinks:

- 1. Shallow
- 2. Faucets single-lever, extended handle

D. Appliances:

- 1. Refrigerator – side-by-side with ice and water dispensers
- 2. Range – front controls, touch controls, wall ovens with side-hinge doors
- 3. Microwave – touch controls, on or under counter
- 4. Dishwasher – touch controls, raised
- 5. Garbage Disposal, Trash Compactor – touch controls, to eliminate trips to garbage
- 6. Washer and Dryer – front controls, touch controls, front loading



STILL A LITTLE UNCERTAIN ABOUT UNIVERSAL DESIGN?

You are not alone. According to an interactive survey conducted in September of 2002 by AARP, the biggest barrier to making much needed home improvements was cost (see chart). According to the same study, just over one third of those who participated were homeowners with the desire to make home improvements but had doubts about the process. Other barriers are listed below.

<i>BARRIERS TO MAKING NEEDED HOME IMPROVEMENTS</i>	
You cannot afford these improvements or the improvements cost too much.	69%
You are unable to do it yourself.	10%
You are currently making these modifications, but they are not yet finished.	6%
You are uncertain where to find a contractor.	5%
You are not sure of exact changes needed.	4%
You plan to move to another place with those features.	2%
Other	9%
None	7%

Another incentive to motivate individuals to modify their homes is the possibility to qualify for tax credit on your Virginia income tax. The Virginia Department for the Aging states that accessible homes benefit people of all ages and abilities in that they help people to live independently in their communities for as long as they are able to do so.

You may qualify to claim a tax credit if you install (or hire someone else to install) one or more accessibility features in an existing home to make it accessible to people with limited capabilities. The law cannot otherwise require these features. The following features are acceptable:

- A no-step entrance allowing access into the home
- Interior doors with a 32-inch-wide clear opening
- Reinforcement of bathroom walls and installation of grab bars around the toilet, tub, and shower
- Light switches and electrical outlets placed in accessible locations
- Other “accessibility” features listed in the Virginia Uniform Statewide Building Code

The credit is equal to 25% of the total cost of the accessibility features or \$500, whichever is less. The allowable credit may not exceed your tax liability. Also, unused credits may be carried over for 5 years.

Information provided by the Virginia Department for the Aging. For additional information, contact: **Commonwealth Council on Aging**
c/o Virginia Department for the Aging
1610 Forest Avenue, Suite 100
Richmond, VA 23229
800-552-3402 www.vda.virginia.gov

WHY DO IT NOW?

Traditional homes that are great and functional when you are healthy and active, can and do become safety and access barriers when you are ill or suffer an injury. The reality is that individuals of all ages benefit from home features that blend convenience and safety with user-friendly function. People are also living longer than they used to. More people are interested in universal or “people friendly” housing. People friendly products and “universal design” are aimed at meeting the needs of most people regardless of age and ability. The good news is that there are many products available that offer both style and comfort without having to compromise one for the other, and it is less expensive and better to invest in these products when a house is built or before retirement years.

For more information and community resources to assist you and answer some of your questions, contact the following:

LOCAL AND NATIONAL AGENCIES/BUSINESSES TO ASSIST YOU

Prince William Area Agency on Aging	703-792-6374
Prince William County Office of Housing and Community Development, Community Preservation and Development	703-792-7530
Prince William County Department of Public Works, Building Development Division	703-792-6820
Prince William Disability Services Board	703-792-7649
The National Association of Home Builders	202-266-8400
National Council on Independent Living	703-525-3406

Northern Virginia Building Industry Association	703-817-0154
Association for Safe and Accessible Products	202-347-8200
Disabled/Paralyzed Veterans National Service Headquarters	202-554-3501

WEBSITES

AARP

www.aarp.org

The AARP website provides a wide variety of information for older Americans and caregivers of older family members. More specific information can be obtained by using the built-in search tool provided by the website. By using the search tool, information on a variety of topics such as universal design, reverse mortgages, etc. can be easily obtained by typing the desired keyword and clicking go.

National Resource Center on Supportive Housing and Home Modifications

www.homemods.org

This website provides updates to the current issues surrounding home modifications. The National Resource Center on Home Modification link gives assistance in locating useful resources such as the State Housing Finance Agency, the Department of Housing and Community Development, and Neighborhood Works.

National Reverse Mortgage Lenders Association (NRMLA)

www.reversemortgage.org

This website provides information to consumers who are interested in learning more about reverse mortgages. The information is provided by the NRMLA and includes links that cover topics such as: **1)** what is a reverse mortgage, **2)** types of reverse mortgages, **3)** the process of acquiring a reverse mortgage, and **4)** the typical costs involved.

The National Association of Home Builders

www.nahb.org

This website provides extensive housing industry information for both the public and members. For over 40 years, NAHB has been the nation's leading source for

housing information. Chances are, if you need to learn more about a specific area of home building, NAHB has the information that you need.

The National Association of Home Builders Resource Center

www.nahbrc.org

This website, a wholly-owned subsidiary of the National Association of Home Builders, is the research and development leader in the home building industry. Government agencies, manufacturers, builders, and remodelors rely on the expertise and objectivity that are at the very heart of the Research Center and its activities. Uniquely positioned to facilitate invaluable liaisons – between builders and manufacturers, design professionals and housing research, and government and industry – the Research Center is dedicated to advancing housing technology and enhancing housing affordability for the benefit of all Americans.

UDnet, The Universal Design Network

www.universaldesign.net

The Universal Design Network is the homepage of the Global Universal Design Educator's Network and the Monthly Online News. The Network is a loose coalition of people committed to universal design education.

The site has been developed to invite participation, to provide opportunities for interaction, and to connect you to the outstanding universal design sites around the world.

The site contains a searchable archive of all the previous issues of the Global Universal Design Educator's Online News and links to key international universal design resources

The Center for Universal Design at North Carolina State University

www.design.ncsu.edu/cud/

This well renowned website is for The Center for Universal Design, a national research, information, and technical assistance center that evaluates, develops, and promotes universal design in housing, public and commercial facilities, and related products.

The National Resource Center on Supportive Housing and Home Modification at the University of Southern California

www.usc.edu/dept/gero/nrcshhm/

This is the website for the National Resource Center on Supportive Housing and Home Modification (NRCSHHM) located at the University of Southern California Andrus Gerontology Center. The NRCSHHM promotes aging in place and independent living for the elderly and the disabled with home modification, supportive housing, and elder-friendly communities.

The Center for Inclusive Design and Environmental Access, School of Architecture, University at Buffalo

www.ap.buffalo.edu/sap/research/idea.asp

This is the website for The Center for Inclusive Design and Environmental Access (IDEA). The Center conducts research, provides education and designs projects on universal design and environmental access. In 1999, the center was awarded a \$3 million grant from the National Institute for Disability and Rehabilitation Research, and was designated a Rehabilitation Engineering Research Center. Under the directorship of Professor Edward Steinfeld, the IDEA Center has become the nation's leader in developing, testing and propagating ideas and standards for universal design.

United Design Associates

www.uniteddesign.com/accessible_plans.html

This is the website for United Design Associates (UDA). As a pioneer in the Universal Design arena for more than a decade, UDA now offers alternate Accessible Versions of 77 Ideal Home Plans, all designed for comfort and livability. Alternate Accessible Plan Versions are provided in addition to a full set of conventional plans and are designed with open living areas, comfortable 42" wide hallways for easy mobility, first-floor master suites with separate showers and accessible baths, plus appropriate details, notes and specifications for: alternate bath layouts, ramps, handrails, accessible cabinetry, blocking details, hardware, roll-in showers, plumbing fixtures, and alternate door schedules.

The Universal Design Alliance

www.universaldesign.org

The Universal Design Alliance, Inc., is a non-profit corporation founded in March of 2003. It's mission is to create awareness and expand the public's knowledge of universal design, which is design for all ages, sizes, and abilities.

The American Occupational Therapists Association
www.aota.org

The American Occupational Therapy Association (AOTA) is the nationally recognized professional association of approximately 35,000 occupational therapists, occupational therapy assistants, and students of occupational therapy.

Practitioners work with people experiencing health problems such as stroke, spinal cord injuries, cancer, congenital conditions, developmental problems, and mental illness. Occupational therapy helps people regain, develop, and build skills that are essential for independent functioning, health, and well-being.

[RESOURCES FOR THE DESIGN OF ACCESSIBLE HOMES](#) (provided by *Universal Designers & Consultants, Inc. Takoma Park, MD 20912*
www.UniversalDesign.com)

DESIGN GUIDES

[Accessible Stock House Plans](#), by the Center of Accessible Housing NCSU. October 1993, 8 pages, Box 8613 Raleigh, NC 27695-8613.

[Beautiful Barrier-Free – A Visual Guide to Accessibility](#), by Cynthia Leibrock and Susan Behar. December 1997, \$64.95, 192 pages, Van Nostrand Reinhold 115 Fifth Avenue, New York NY 10003. (available through amazon.com)

[Building for a Lifetime – The Design and Construction of Fully Accessible Homes](#), by Margaret Wylde, Adrian Baron-Robbins and Sam Clark. January 1994, \$44.95, 304 pages, Taunton Press, 63 South Main Street, Box 5506, Newtown, CT 06470-5506. (available through amazon.com)

[A Comprehensive Approach to Retrofitting Homes for a Lifetime](#), by Lenny Rickman. December 1991, \$13.00, 82 pages, The NAHB Research Center, 400 Prince Georges's Boulevard, Upper Marlboro, MD 20772-8731, 301-249-4000. (available through amazon.com)

[A Consumer's Guide to Home Adaptation](#), by The Massachusetts Housing Partnership and The Adaptive Environments Center. February 1989, \$16.00, 52 pages, Adaptive Environments Center, 621 Huntington Avenue, Boston, MA 02115, 617-695-1225 (voice/tty). (available through amazon.com)

[Design for Dignity – Accessible Environments for People with Disabilities](#), by William Lebovich. September 1993, \$49.95, 250 pages, John Wiley & Sons, 605 Third Avenue, New York NY 10158, 212-850-6172 or 1-800-879-4539.

[The Do-Able Renewable Home](#), by John P.S. Salmen. 1991, Free, 36 pages, AARP, 601 East Street, NW, Washington, D.C. 20049, 1-800-424-AARP.

Homes for Everyone – Universal Design Principles in Practice, by Steven Winter Associates, Inc. September 1996, \$15.00, 87 pages, HUD USER, P.O. Box 6091, Rockville, MD 20849, 1-800-245-2691 (voice) or 1-800-483-2209 (tty). (available through www.HUDUSER.org)

Housing Interiors for the Disabled & Elderly, by Bettyann Boetticher Raschko. 1982, \$49.95, 360 pages, Van Nostrand Reingold 115 Fifth Avenue, New York, NY 10003. (available at amazon.com)

Residential Remodeling and Universal Design, by NAHB Research Center, Inc. May 1996, \$5.00, 124 pages, HUD USER, P.O. Box 6091 Rockville, MD 20849, 1-800-245-2691 (voice) or 1-800-483-2209 (tty). (available through www.HUDUSER.org).

Universal Kitchen and Bathroom Planning – Design that Adapts to People, by Mary Jo Peterson, CKD, CBD. September 1998, \$69.95, 500 pages, McGraw-Hill, Director of Special Sales, 11 West 19th Street, New York, NY 10011. (available on amazon.com)

PRODUCT GUIDES

The 1995 Accessible Building Product Guide, by John P.S. Salmen, AIA and Julee Quarve-Peterson. January 1995, \$69.95, 335 pages, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158, 1-800-879-4539. (available on amazon.com)

Beyond Barriers – A Catalog of Innovative Products to Enhance Freedom, Personal Dignity, and Independent Living, by Access One, Inc. October 1998, \$5.00, 128 pages, Access One, Inc., 25679 Gramford Avenue, Wyoming, MN 55092, 1-800-561-2223.

Directory of Accessible Building Products 1998, by NAHB Research Center, Inc. January 1998, \$5.00, NAHB Research Center, 400 Prince Georges Boulevard, Upper Marlboro, MD 20772-8731, 301-249-4000.

RESOURCE GUIDES

A Blueprint for Action – A Resource for Promoting Home Modifications, by The National Home Modifications Action Coalition. August 1997, \$7.50, 56 pages, The Center for Universal Design, School of Design, North Carolina State University, Box 27695-8613, 1-800-647-6777.

Universal Design Newsletter, by Universal Designers & Consultants, Inc. Quarterly publication, 12 pages, Annual subscription (4 issues), \$75.00, Universal Designers & Consultants, Inc., 6 Grant Avenue, Takoma, MD 20912, 1-888-631-7192 (voice/tty).

Photo Examples of Universal Design: *Practical and Beautiful*

Easy Entry: Try new ways to simplify getting into your house. Create a graceful transition from driveway to doorway by removing steps. Reduce trip hazards by installing a low threshold, and lever handles as opposed to the traditional doorknob offer easier access when your hands are full with groceries, children, etc.



Bathroom Elegance: Enhance your style and taste with contemporary handheld showers, grab bars, door handles, etc. that are pleasing to the eye. Ensure your safety with a low step or no step shower entrance.



Kitchen Convenience: Open the view with widened walkways. Also, varying the height of the cabinets and adding rollout shelves (bottom picture) makes their contents more accessible to a wide range of people.



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E-Loan Website. Retrieved 11/22/2004 from <http://www.eloan.com>

National Resource Center on Supportive Housing and Home Modifications
<http://homemods.org>

National Reverse Mortgage Lenders Association
<http://www.reversemortgage.org>

Remodelers Council, The NAHB University of Housing, and The National Association Home Builders

Special Needs Checklist for Home Design. Retrieved 11/01/2004 from http://www.aarp.org/life/homedesign/Articles/a2004-03-23-special_needs.html

Virginia Department for the Aging

Photos retrieved from:

<http://www.accessiblehousing.net>

<http://www.tndhomes.com/tndandud.html>

<http://www.aarp.org/life/homedesign/>

Leon Harper and Associates Housing Consultants
14811 Downey Ct.
Dale City, Virginia 22193

Committee Members

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Julian Bermudez	Prince William Office of Housing and Community Development
Shawn Cody, Consultant	Northern Virginia Builders' Association, Prince William Chapter
Diane Davis	Livin' Rite Home Health
Barbara Diehl	Prince William Senior Center at Woodbridge
Lorraine Eckhardt	Prince William Area Agency on Aging
Steve Griffin	Prince William County Planning Office
Peg Hamil	Prince William County Building Development Division
Leon Harper	Leon Harper and Associates Housing Consultants
Dorothy Herman	Legal Services of Northern Virginia, Prince William Office
Bill Lake	Prince William Office of Housing and Community Development
Inger McDaniel	Prince William Area Agency on Aging
Michelle Monk	George Mason University
Nancy O'Grince	Prince William County Attorney's Office
Brenda Rarick	Prince William County Disability Services Board
John Salmen, Consultant	Universal Design and Consultants
Mary Shufelt	Prince William Commission on Aging
Karen Smith	The ARC of Greater Prince William
Yolanda Thompson	George Mason University
Daphne Van Tiem	Prince William Area Agency on Aging
Lin Wagener	Prince William Area Agency on Aging
Barbara Watts	Capital Hospice