

Originally Processed With FOIA(s):

S

FOIA Number:

S

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
Library Staff.**

Record Group/Collection: Donated Historical Materials

Collection/Office of Origin: Frieden, Lex, Collection

Series: Printed Materials

Subseries: Manuals

OA/ID Number: 52097

Folder ID Number: 52097-010

Folder Title:

"The Center for Universal Design" [1997-1998]

Stack:

Row:

Section:

Shelf:

Position:

UD

THE CENTER FOR UNIVERSAL DESIGN

VISIT

<http://www2.ncsu.edu/ncsu/design/cud>

THE CENTER FOR **UNIVERSAL DESIGN** WEB SITE

THE CENTER FOR UNIVERSAL DESIGN

Organizational Chart

North Carolina State University

L. Monteith, *Chancellor*

School of Design

M. Malecha, *Dean*

M Scotford, *Associate Dean*

THE CENTER FOR UNIVERSAL DESIGN

R. Mace, *Program Director*

L. Trachtman, *Executive Director*

Constituent Advisory Groups

National Advisory Council

Academic Advisory Committee

Support Staff

R. Tavalacci, *Administrative Assistant*

J. Yoder

C. McConnel

Materials Development

Vacant, *Coordinator*

B. Rock

Resource Collections

J. Reagan

Research

B.R. Connell, *Director*

Evaluation Studies

J. Sanford

Product Design

M. Story, *Coordinator*

D. Ringholz

J. Mueller

Training + Policy Initiatives

D. Duncan, *Director*

Post Secondary Education

E. Ostroff

Design Assistance

L. Young, *Director*

Technical Assistance

R. Pace

Dissemination + Outreach

J. Reagan, *Director*

Information + Referral

N. Hitchcock

Publication Sales

C. Snelling

The Center for Universal Design
National Advisory Council Meeting
Saturday September 20, 1997
Work Group Assignments (10:00 - 12:00)

Group 1 - Park Boardroom

Facilitator: Jim Mueller
Recorder: Molly Story

June Kailes
Debbie Kaplan
Julie Kirschbaum (for Peter Axelson)
Joe Lane
Brian Sherry
Gregg Vanderheiden
Margaret Wylde

Group 2 - Capital City Boardroom

Facilitator: Elaine Ostroff
Recorder: Dick Duncan

Alexandra Enders
David Gray
Richard Hunnicut
John Kemp
Anne Long Morris
Mary Jo Peterson
Cynthia Stuen
Polly Welch

Group 3 - Imperial III

Facilitator: Leslie Young
Recorder: Rex Pace

Alberto Barrera
Bill Carmichael
Speed Davis
Andy Gianino
Susan Goltsman
Paul Grayson
Beth Marcus
Bill Mitchell
Jon Pynoos
John Salmen
Colleen and Max Starkloff

The Center for Universal Design
National Advisory Council Meeting

Charge to Work Groups

The purpose of Saturday's work groups is to help the Center begin to operationalize its 3-year strategic plan. Many of the Center's advisors commented on the draft plan that was mailed in the spring and, as a result, some changes have been made. Attached is our final plan for 1997-1999.

The plan includes three broad-based goals, overarching strategies for pursuing the goals, and specific objectives related to each goal. We would like to move forward by identifying the activities and resources that will help the Center accomplish these objectives. For example, activities might include current projects, new projects, or collaborations with others pursuing similar objectives. Resources can include existing funding or pursuing new funding opportunities. Along with key activities and resources, we would like each group to also address time lines, possible collaborations, outputs or products, expected outcomes, and evaluation measures. A planning form is attached and will serve as the basis for group discussion.

Work group 1 will address Center goal 1: Increasing adoption of universal design by product manufacturers.

Work group 2 will address Center goal 2: Improving knowledge and awareness of universal design.

Work group 3 will address Center goal 3: Increasing adoption of universal design by the building industry.

A list of work group assignments is also attached. Preliminary assignments were made based on your interests and background. We are more than willing to change these assignments if you find your interests are better matched to another group.

Finally, we have also included bios of the Advisory Council members so that you can read about the others in your group and begin thinking of ways to make the most of your time together.

Thank you again for your assistance, and we look forward to a productive meeting.

**Center for Universal Design
Planning Form**

Goal:

Objective:

Key Activities	Time Table	Lead/ Collaborators	Funding Sources: Current/Future	Outputs/ Products	Expected Outcomes	Evaluation Measures

Last Updated:

**The Center for Universal Design
Strategic Plan: 1997-1999**

Our Vision

The Center's work manifests the belief that the built environment and products should be usable, to the greatest extent possible, by everyone regardless of their age or ability.

Mission Statement

To improve the built environment and related products for all users by impacting change in policies and procedures through research, information, training, and design assistance.

Goal 1: To increase adoption of universal design by product manufacturers

Primary Strategies

- A. Transfer new product design concepts (based on user needs) to industry
- B. Work with industry to improve the design and marketing of new and current products

Objectives

- 1.1 Two Center-developed product design concepts will be transferred to industry
- 1.2 Five companies will adopt a universal design approach to their products
- 1.3 A universal design "seal" will be used by industry and recognized by consumers

Goal 2: To improve knowledge and awareness of universal design

Primary Strategies

- A. Impact undergraduate and graduate education in related disciplines
- B. Provide continuing education and training opportunities for practitioners
- C. Increase public awareness and demand for universal design

Objectives

- 2.1 Universal design curricula will be incorporated in all disciplines at NCSU School of Design and shared nationally
- 2.2 Three professional organizations will support universal design education
- 2.3 The Center will facilitate dissemination of universal design information to the general public

Goal 3: To increase adoption of universal design by the building industry

Primary Strategies

- A. Impact availability of universal design in new construction (including modular housing), home modifications, and in nonresidential facilities
- B. Demonstrate efficacy of universal design solutions

Objectives

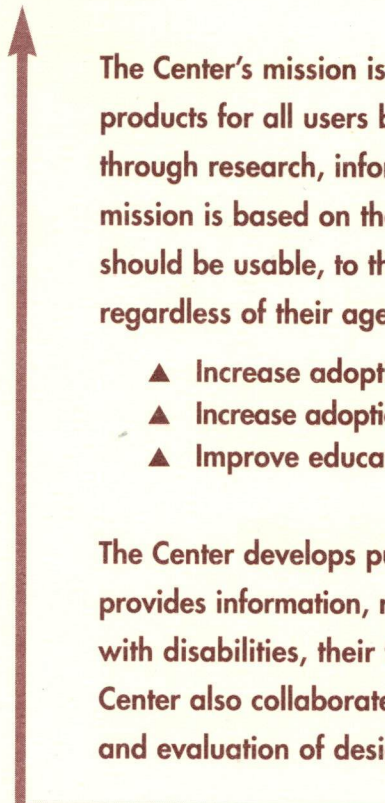
- 3.1 Two major corporations will adopt universal design practices in new construction, renovation, and leasing
- 3.2 Three professional organizations will adopt certification criteria
- 3.3 Three insurance companies will promote safer and more usable home environments for their subscribers

THE CENTER FOR UNIVERSAL DESIGN

ENVIRONMENTS AND PRODUCTS FOR ALL PEOPLE



UNIVERSAL



DESIGN

The Center's mission is to improve the built environment and related products for all users by impacting policy and procedural change through research, information, training, and design assistance. This mission is based on the belief that the built environment and products should be usable, to the greatest extent possible, by everyone regardless of their age or ability. *The Center's goals are to*

- ▲ Increase adoption of universal design by the building industry
- ▲ Increase adoption of universal design by product manufacturers
- ▲ Improve education in universal design

The Center develops publications and instructional materials, and provides information, referrals, and technical assistance to individuals with disabilities, their families, and professionals nationwide. The Center also collaborates with business and industry on the development and evaluation of design solutions and marketing strategies.

THE CENTER FOR UNIVERSAL DESIGN

School of Design

NC State University

Box 8613

Raleigh, NC 27695.8613

919.515.3082 V/TTY

919.515.3023 FAX

800.647.6777 V/TTY Information Request Line

cud@ncsu.edu

<http://www2.ncsu.edu/ncsu/design/cud>

Program Director: Ronald L. Mace, FAIA

Executive Director: Lawrence H. Trachtman

Major funding provided by the National Institute on Disability and Rehabilitation Research,
United States Department of Education

THE CENTER FOR **UNIVERSAL DESIGN** offers the following services:

RESEARCH AND DESIGN DEVELOPMENT

- RESEARCH** Applied research studies on human factors and user needs, usability of accessible and universally designed products and environments, and impact of universal design. **The Center**
- ▲ advances knowledge of universal design principles
 - ▲ advises on standards and codes
 - ▲ provides input on relevant legislation and policy
 - ▲ evaluates the efficacy of universal design solutions

- DESIGN DEVELOPMENT** Design development services for universally usable products, building components, and spaces. **The Center**
- ▲ identifies user needs
 - ▲ conducts design and market research
 - ▲ provides concept development for new products
 - ▲ conducts architectural and product evaluations
 - ▲ provides design and marketing assistance to business and industry

DISSEMINATION AND OUTREACH

- Collection, development, and dissemination of information on all aspects of accessibility and universal design for end-users and professionals. **The Center**
- ▲ develops materials and publications
 - ▲ provides telephone information and referral services
 - ▲ maintains a library and referral data base
 - ▲ maintains a World Wide Web site
 - ▲ provides informational presentations

TRAINING AND POLICY INITIATIVES

- TRAINING** Teaching and training on accessible and universal design for all audiences. **The Center**
- ▲ develops post-secondary curricula
 - ▲ conducts seminars and workshops
 - ▲ develops and conducts training programs
 - ▲ assists in certification development

- POLICY INITIATIVES** Analysis of policies and procedures affecting home modification and the adoption of universal design by government and industry. **The Center**
- ▲ analyzes user needs
 - ▲ conducts expert workshops
 - ▲ prepares policy papers
 - ▲ develops design criteria
 - ▲ participates in national consortia

DESIGN ASSISTANCE

- Consulting and design assistance for accessible environments including residential and commercial new construction and renovation projects. **The Center**
- ▲ provides assistance for universal design solutions
 - ▲ conducts plan reviews
 - ▲ evaluates building accessibility and recommends access solutions
 - ▲ provides design assistance in meeting Fair Housing Accessibility Guidelines
 - ▲ evaluates and recommends building products and fixtures

Some Center products and services are fee-based. Materials are available in alternate formats upon request.

PUBLICATIONS

The Center for Universal Design - Voice and TDD (919) 515-3082 FAX (919) 515-3023



Center for Accessible Housing
North Carolina State University
School of Design
Box 8613
Raleigh, NC 27695-8613

PUBLICATIONS

Accessibility in Assembly Areas: Technical Article

\$15.00 50 pp. 1995 AATA.8.97

This technical paper provides recommendations that will assist designers and facility managers enhance accessibility in assembly areas. The recommendations are based on research and post-occupancy evaluations conducted by the Center at 24 sports and performing arts facilities.

Accessibility Standards for Children's Environments, Technical Report

\$12.00 51 pp. 1992 KDPS.12.92

A summary of the final technical report of a project in which recommendations for accessibility standards for children's environments were developed, this publication contains an overview of the research and the set of recommendations.

Accessible Cabinetry

\$8.00 32 pp. 1996 ACCB.11.96

This technical report published by the IDEA Center, University at Buffalo presents the results of a Special Interest Forum on accessible cabinetry held in June 1995. The report describes the state-of-the-art in cabinetry designed to facilitate use by people with disabilities and includes case studies of available products.

Accessible Environments: Toward Universal Design

\$4.00 44 pp. 1996 AEUD.9.96

A good overview of the concept of universal design in everyday environments, this booklet includes descriptions of universal design solutions, design illustrations, photographs, and a brief history of the disability rights movement, and recent legal developments.

Accessible Plumbing

\$8.00 29 pp. 1996 ACPL.11.96

This technical report published by the IDEA Center, University at Buffalo presents the results of a Special Interest Forum on accessible plumbing held in October 1995. The report describes the state-of-the-art in accessible plumbing fixtures and accessories and includes case studies of available products.

Accessible Stock House Plans Catalog

\$1.50 10 pp. 1993 ASHP.10.93

This catalog of floor plans and perspectives for six accessible homes includes accessible features and ordering information for the plan sets.

A Blueprint for Action

\$7.50 56 pp. 1997 BLPR.9.97

The report from the Second National Invitational Working Conference on Home Modifications Policy that includes background information and action plans for promoting the development of home modifications policies and programs nationally and locally.

A Consumer's Guide to Home Adaptation

\$12.00 52 pp. 1991 CGHA.7.91

Published by the Adaptive Environments Center in Boston, this workbook includes worksheets for evaluating needs in the home, illustrated construction plans for grab bars, ramps and other accessible elements, and resource listings.

Emerging Technologies for Independent Living: Technical Article

\$3.50 12 pp. 1995 ETTA.11.95

This article is the report of a working conference held in November 1994 that brought people with disabilities together with leading technology experts in the areas of robotics, home electronic controls, telecommunications, computers, and voice recognition to evaluate emerging technologies for independent living.

The Fair Housing Accessibility Guidelines - Requirement 1: Analyzing Site Impracticality on Difficult Sites

\$10.00 45 pp. 1992 DADS.9.97

This technical design bulletin provides designers, developers, builders, and interested users with a detailed explanation of Requirement 1 - guidelines for accessible entrances on accessible routes. The site-impracticality tests are discussed in detail and case examples are presented. Text is illustrated with line drawings.

The Fair Housing Accessibility Requirements: How to Make Them a Marketing Advantage

\$3.00 15 pp. 1995 FHMK.8.95

This booklet discusses how incorporating universal design features into multifamily housing can expand markets for builders and developers.

Financing Home Accessibility Modifications

\$20.00 36 pp. 1993 FHAM.3.93

A reference source that identifies potential sources of financial assistance for renters and homeowners, this book offers guidance and direction for locating assistance at the state and local level.

Housing Accessibility for Individuals with Visual Impairment or Blindness: Final Report

\$10.00 27pp. 1993 HAVI.3.93

This summary report of a study conducted to identify characteristics of housing environments that enhance or limit the independence and safety of individuals with blindness or low vision includes research methodology, results, and a summary list of useful home modifications.

The New Fair Multifamily Housing: A Design Primer to Assist in Understanding the Accessibility Guidelines of the Fair Housing Act

\$5.00 36 pp. 1996 NFMH.1.97

This report provides technical support and assistance to those seeking a basic understanding of the accessibility requirements of the Fair Housing Act. It includes illustrated solutions and examples from built multifamily housing projects across the country and anecdotal reports from the field.

Rights and Responsibilities of Tenants and Landlords under the Fair Housing Amendments Act

\$3.00 12 pp. 1995 RRTL.8.95

This booklet outlines the rights and responsibilities of tenants with disabilities and landlords under the FHAA. It also includes explanations of reasonable accommodations, modifications of existing units, and enforcement provisions under the Act.

Tenant's Guide to Apartment Modifications: An Idea Source Pamphlet to Simple, Low-cost Modifications to Increase Accessibility in Apartments

\$3.00 18 pp. 1996 TGAP.1.97

This booklet presents illustrated ideas for low-cost modifications that are commonly made to rental dwellings. It focuses on the three areas where most accessibility problems occur: entrances, bathrooms, and kitchens.

Universal Design: Housing for the Lifespan of All People

\$2.50 15 pp. 1988, reprint 1994 HSUD.8.97

This pamphlet provides an introduction to the concept of universal design and its application in the home. Universal design features, applications, and design solutions for the home are included. Pamphlet originally published by HUD.

SLIDE SHOWS (SS)

Accessible Home Modifications Slide Show and Script

\$75.00 1995 HMSS.1.95

This 80-slide show provides an overview of problem areas in the home and possible solutions for greater accessibility. Includes sections on entrances, doors and doorways, windows, kitchens, bathrooms, housing controls, and level changes. A script describing each slide accompanies the show.

Fair Housing Amendments Act Accessibility Guidelines Slide Show

\$120.00 (nonprofits / educational) 1997 FASS.9.97

\$150.00 (businesses / commercial)

This 120-slide show and accompanying script illustrates the Seven Accessibility Requirements of the Fair Housing Amendments Act of 1988 and the final Fair Housing Accessibility Guidelines as issued by HUD in 1991.

POSTER

The Principles of Universal Design Poster

\$5.00 22 1/2" x 33" 1997 PUDP.8.97

This glossy, 4-color poster defines and illustrates the seven Principles of Universal Design developed by a team of experts through The Center for Universal Design. The Principles are applicable to all design disciplines.

VIDEOS (VO)

ADA Standards for Accessible Design: A Series of Videotapes

This series of nine videotapes presents the requirements of the ADA Standards by topic, condensing them into a graphic format that is easy to review and understand. Each videotape is 15 to 20 minutes in length. Each combines live footage with detailed computer-generated illustrations to explain how people with disabilities use the built environment and how the Standards provide a framework to design for accessibility.

Three videotapes are currently available (9/97):

#2: Accessible Route and Protruding Objects

\$20 (nonprofit or educational) 17 mins. 1997 RPVO.8.97

\$35 (business or commercial)

#4: Accessible Parking and Curb Ramps

\$20 (nonprofit or educational) 19:10 mins. 1997 PCVO.8.97

\$35 (business or commercial)

#6: Accessible Doors and Entrances

\$20 (nonprofit or educational) 15:40 mins. 1997 DEVO.8.97

\$35 (business or commercial)

Fair Housing Means Universal Design

\$35.00 26-minutes, closed-captioned, 1996 FHVO.11.96

This video produced by the IDEA Center, University at Buffalo, illustrates the value of the Fair Housing Accessibility Guidelines and how universal design helps make housing desirable for a wide audience. Included with the video is a presentation guide.

Toward Universal Design: Universal Design Initiative (video)

\$15.00 15 mins. 1993 UDV0.9.97

Universal design is defined through the viewpoints of design critics, educators, professionals, and students as they discuss the issues driving universal design.

INFO PACKS (IP)

The Center's InfoPacks provide resource listings for a variety of topics related to accessible housing and universal design. Each InfoPack covers a specific topic and includes references to books, articles, directories, videos, slide shows, and organizations relevant to the topic. Annotations and contact/ordering information are provided for each entry.

IP#1 Accessible and Universal Design

\$1.50 12 pp. 1996 AUIP.11.96

IP#2 Housing Design and Modifications for Older People

\$2.50 16 pp. 1996 OPIR.11.96

IP#3 Product and Assistive Technology Resources

\$1.50 10 pp. 1996 PRIP.11.96

IP#4 Accessible Housing Design and Modifications

\$2.50 16 pp. 1996 AHIP.11.96

IP#5 Accessibility Standards and Regulations

\$1.50 6 pp. 1996 SRIP.11.96

TECH PACKS (TP)

TP #1.10 Grab Bars

\$3.00 8 pp. 1993 GBTP.2.93

This technical assistance booklet contains descriptions of different types of grab bars and details on reinforcing walls for grab bar installation.

TP #2.05 Universal Design for Decks, Patios, Porches, and Balconies

\$5.00 16 pp. 1994 DPTP.2.94

Information for making outdoor living areas accessible to all is provided through text and illustrations.

TP #4.10 The Housemate Agreement

\$3.00 12 pp. 1992 HATP.3.92

This introduction to a housemate agreement allows people to share their housing without violating zoning laws. It includes legal considerations, advantages to both the owner/provider and the housemate, and a copy of the agreement.

TP #4.32 Reading Architectural Drawings

\$5.00 16 pp. 1993 ADTP.10.93

The technical aspects of construction drawings are introduced here to provide non-designers with skills for reading and interpreting plans.

TP Individual Accessible Housing Design File Chapters

These chapters from *The Accessible Housing Design File*, by Barrier Free Environments, Inc., Van Nostrand Reinhold Publishers, 1991, have been reprinted with permission from the publisher for exclusive distribution through The Center for Universal Design.

TP #1.00 Bathrooms

\$9.00 43 pp. 1991 BATP.2.94

TP #2.00 Entrances & Site Design

\$9.00 40 pp. 1991 ESTP.2.94

TP #3.00 Doors & Doorways

\$7.00 21 pp. 1991 DDTP.2.94

TP #5.00 Kitchens

\$9.00 41 pp. 1991 KNTP.2.94

TP #6.00 Bedrooms

\$7.00 22 pp. 1991 BDTP.3.94

TP #7.00 Windows

\$7.00 12 pp. 1991 WNTP.3.94

TP #8.00 Vehicular Transportation and Parking

\$7.00 26 pp. 1991 VTTP.3.94

FACT SHEETS (FS)

FS #1 Fair Housing Amendments Act: Provisions Relating to Discrimination Based on Disability

\$1.00 3 pp. 1991 DDFS.4.91

FS #2 Fair Housing Amendments Act: Reasonable Modification of Existing Premises

\$1.00 2 pp. 1991 RMFS.4.91

FS #3 Fair Housing Amendments Act: Design Requirements: Questions and Answers

\$1.00 3 pp. 1991 SEFS.4.91

FS #4 Fair Housing Amendments Act: Substantial Equivalency

\$1.00 2 pp. 1991 QAFS.4.91

FS #5 Home Financing for Older People

\$1.00 2 pp. 1991 OPFS.4.91

FS #6 Housing Definitions: Accessible, Adaptable, and Universal Design

\$1.00 3 pp. 1991 HDFS.4.91

FS #7 Benefits of Accessory Unit Housing for Elderly Persons and Persons with Disabilities

\$1.00 2 pp. 1992 AUFS.2.92

FS #8 Financing Accessibility Modifications

\$1.00 4 pp. 1992 FAFS.2.92

PRODUCT

EVALUATION GUIDES (PE)

The Center's product evaluation guides for consumer products are the result of research conducted by the Center. In the research, various consumer products have been evaluated by focus groups that include people with diverse abilities. These guides are useful to consumers, designers, design educators, and product manufacturers.

Door Hardware: A Guide for Buyers, Manufacturers, and Designers

\$4.50 18 pp. 1995 DHPE.3.95

Fire Extinguishers: A Guide for Buyers, Manufacturers, and Designers

\$5.50 34 pp. 1996 FEPE.11.96

Microwave Ovens: A Guide for Buyers, Manufacturers, and Designers

\$4.50 18 pp. 1994 MOPE.12.94

Outside Watering Products: A Guide for Buyers, Manufacturers, and Designers

\$5.50 30 pp. 1996 OWPE.1.96

Vacuum Cleaners: A Guide for Buyers, Manufacturers, and Designers

\$4.50 13 pp. 1995 VCPE.5.95

This Publications List is available in the following alternative formats:

Computer Diskettes
Text format / ASCII
(IBM or Macintosh)

Large Print

To obtain the list in an alternative format,

call **1.800.647.6777**

ORDER FORM pg.1 of 3

The order form consists of 3 pages. Please make sure you fill out and return all three of these pages.

Complete all 3 pages of this form and mail it with your remittance to: **The Center for Universal Design**
NC State University
Box 8613
Raleigh, NC 27695-8613
800-647-6777

Name _____

Organization/Affiliation _____

Address _____

City _____ St _____ Zip _____

Daytime Phone _____

Prepayment required. Please indicate your method of payment. A check, voucher, or purchase order (PO) must be enclosed, payable to **The Center for Universal Design** (No credit cards accepted).

Amount \$ _____ Check enclosed. _____ PO# or Voucher # _____

Publications

Accessibility in Assembly Areas: Technical Article	AATA.8.97	_____ @	\$15.00 _____
Accessibility Standards for Children's Environments	KDPS.12.92	_____ @	\$12.00 _____
Accessible Cabinetry	ACCB.11.96	_____ @	\$8.00 _____
Accessible Environments: Toward Universal Design	AEUD.9.96	_____ @	\$4.00 _____
Accessible Plumbing	ACPL.11.96	_____ @	\$8.00 _____
Accessible Stock House Plans Catalog	ASHP.10.93	_____ @	\$1.50 _____
A Blueprint for Action	BLPR.9.97	_____ @	\$7.50 _____
A Consumer's Guide to Home Adaptation	CGHA.7.91	_____ @	\$12.00 _____
Emerging Technologies for Independent Living	ETTA.11.95	_____ @	\$3.50 _____
The Fair Housing Accessibility Guidelines - Requirement 1	DADS.9.97	_____ @	\$10.00 _____
The Fair Housing Accessibility Requirements: Marketing Advantage	FHMK.8.95	_____ @	\$3.00 _____
Financing Home Accessibility Modifications	FHAM.3.93	_____ @	\$20.00 _____
Housing Accessibility Visual Impairment or Blindness	HAVI.3.93	_____ @	\$10.00 _____
The New Fair Multifamily Housing: A Design Primer	NFMH.1.97	_____ @	\$5.00 _____
Rights and Responsibilities of Tenants & Landlords under the FHAA	RRTL.8.95	_____ @	\$3.00 _____
Tenant's Guide to Apartment Modifications	TGAP.1.97	_____ @	\$3.00 _____
Universal Design: Housing for the Lifespan of All People	HSUD.8.97	_____ @	\$2.50 _____

SUBTOTAL SIDE 1: _____

continued on page 2 

ORDER FORM

pg. 2 of 3

Slide Shows (SS)

Accessible Home Modifications (slide show)	HMSS.1.95	_____	@	\$75.00	_____
Fair Housing Amendments Act Accessibility Guidelines (SS)					
nonprofit or educational institutions	FASS.9.97NP	_____	@	\$120.00	_____
businesses and commercial orgs	FASS.9.97PR	_____	@	\$150.00	_____

Poster

The Principles of Universal Design Poster	PUDP.8.97	_____	@	\$5.00	_____
---	-----------	-------	---	--------	-------

Videos (VO)

ADA #2: Accessible Route and Protruding Objects (video)					
nonprofit or educational institutions	RPVO.8.97NP	_____	@	\$20.00	_____
businesses and commercial orgs	RPVO.8.97PR	_____	@	\$35.00	_____
ADA #4: Accessible Parking and Curb Ramps (video)					
nonprofit or educational institutions	PCVO.8.97NP	_____	@	\$20.00	_____
businesses and commercial orgs	PCVO.8.97PR	_____	@	\$35.00	_____
ADA #6: Accessible Doors and Entrances (video)					
nonprofit or educational institutions	DEVO.8.97NP	_____	@	\$20.00	_____
businesses and commercial orgs	DEVO.8.97PR	_____	@	\$35.00	_____
Fair Housing Means Universal Design (video)	FHVO.11.96	_____	@	\$35.00	_____
Toward Universal Design: Universal Design Initiative (video)	UDVO.9.97	_____	@	\$15.00	_____

InfoPacks (IP)

IP#1 Accessible and Universal Design	AUIP.11.96	_____	@	\$1.50	_____
IP#2 Housing Design and Modifications for Older People	OPIP.11.96	_____	@	\$2.50	_____
IP#3 Product and Assistive Technology Resources	PRIP.11.96	_____	@	\$1.50	_____
IP#4 Accessible Housing Design and Modifications	AHIP.11.96	_____	@	\$2.50	_____
IP#5 Accessibility Standards and Regulations	SRIP.11.96	_____	@	\$1.50	_____

SUBTOTAL SIDE 2: _____

continued on page 3 

ORDER FORM pg. 3 of 3

TechPacks (TP)

TP #1.10 Grab Bars	.GBTP.2.93	_____ @	\$3.00 _____
TP #2.05 Universal Design for Decks, Patios, Porches, and Balconies	.DPTP.2.94	_____ @	\$5.00 _____
TP #4.10 The Housemate Agreement	.HATP.3.92	_____ @	\$3.00 _____
TP #4.32 Reading Architectural Drawings	.ADTP.10.93	_____ @	\$5.00 _____
TP #1.00 Bathrooms	.BATP.2.94	_____ @	\$9.00 _____
TP #2.00 Entrances and Site Design	.ESTP.2.94	_____ @	\$9.00 _____
TP #3.00 Doors and Doorways	.DDTP.2.94	_____ @	\$7.00 _____
TP #5.00 Kitchens	.KNTP.2.94	_____ @	\$9.00 _____
TP #6.00 Bedrooms	.BDTP.3.94	_____ @	\$7.00 _____
TP #7.00 Windows	.WNTP.3.94	_____ @	\$7.00 _____
TP #8.00 Vehicular Transportation and Parking	.VTP.3.94	_____ @	\$7.00 _____

Fact Sheets (FS)

FS #1 FHAA: Provisions Relating to Discrimination Based on Disability	.DDFS.4.91	_____ @	\$1.00 _____
FS #2 FHAA: Reasonable Modification of Existing Premises	.RMFS.4.91	_____ @	\$1.00 _____
FS #3 FHAA: Design Requirements: Questions and Answers	.SEFS.4.91	_____ @	\$1.00 _____
FS #4 FHAA: Substantial Equivalency	.QAFS.4.91	_____ @	\$1.00 _____
FS #5 Home Financing for Older People	.OPFS.4.91	_____ @	\$1.00 _____
FS #6 Housing Definitions: Accessible, Adaptable, & Universal Design	.HDFS.4.91	_____ @	\$1.00 _____
FS #7 Benefits of Accessory Unit Housing	.AUFS.2.92	_____ @	\$1.00 _____
FS #8 Financing Accessibility Modifications	.FAFS.2.92	_____ @	\$1.00 _____

Product Evaluation Guides (PE)

Door Hardware: A Guide for Buyers, Manufacturers, & Designers	.DHPE.3.95	_____ @	\$4.50 _____
Fire Extinguishers: A Guide for Buyers, Manufacturers, & Designers	.FEPE.11.96	_____ @	\$5.50 _____
Microwave Ovens: A Guide for Buyers, Manufacturers, & Designers	.MOPE.12.94	_____ @	\$4.50 _____
Outside Watering Products: A Guide for Buyers, Manufacturers, & Designers	.OWPE.1.96	_____ @	\$5.50 _____
Vacuum Cleaners: A Guide for Buyers, Manufacturers, & Designers	.VCP.5.95	_____ @	\$4.50 _____

SUBTOTAL SIDE 3: _____

TOTAL (all 3 sides): _____

THE PRINCIPLES OF UNIVERSAL DESIGN

Version 2.0-4/1/97

THE CENTER FOR UNIVERSAL DESIGN

NC State University

Compiled by advocates of universal design, listed in alphabetical order:

Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick,
Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, & Gregg Vanderheiden

UNIVERSAL DESIGN

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

The authors, a working group of architects, product designers, engineers and environmental design researchers, collaborated to establish the following Principles of Universal Design to guide a wide range of design disciplines including environments, products and communications. These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

The Principles of Universal Design are presented in the following format: name of the principle, intended to be a concise and easily remembered statement of the key concept embodied in the principle; definition of the principle, a brief description of the principle's primary directive for design; and guidelines, a list of the key elements that should be present in a design which adheres to the principle.
(Note: all guidelines may not be relevant to all designs.)

PRINCIPLE ONE: *Equitable Use*

The design is useful and marketable to people with diverse abilities.

GUIDELINES:

- 1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Make provisions for privacy, security, and safety equally available to all users.
- 1d. Make the design appealing to all users.

PRINCIPLE TWO: *Flexibility in Use*

The design accommodates a wide range of individual preferences and abilities.

GUIDELINES:

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

PRINCIPLE THREE: *Simple and Intuitive Use*

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

GUIDELINES:

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

PRINCIPLE FOUR: *Perceptible Information*

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

GUIDELINES:

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Maximize "legibility" of essential information.
- 4c. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4d. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

PRINCIPLE FIVE: *Tolerance for Error*

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

GUIDELINES:

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

PRINCIPLE SIX: *Low Physical Effort*

The design can be used efficiently and comfortably and with a minimum of fatigue.

GUIDELINES:

- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

PRINCIPLE SEVEN: *Size and Space for Approach and Use*

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

GUIDELINES:

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

Please note that these Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations such as economic, engineering, cultural, gender, and environmental concerns in their design processes. These Principles offer designers guidance to better integrate features that meet the needs of as many users as possible.

© 1997 NC State University, The Center for Universal Design

NC STATE UNIVERSITY

The Center for Universal Design
School of Design
North Carolina State University
Box 8613
Raleigh, NC 27695-8613
919.515.3082 Voice and TTY
919.515.3023 FAX
800.647.6777 Information Request Line
cud@ncsu.edu
<http://www2.ncsu.edu/ncsu/design/cud>

Major funding provided by the National Institute
on Disability and Rehabilitation Research,
United States Department of Education

Complimentary Issue

Subscription card enclosed

Home Modifications: The Need for Systems Change

The following article is excerpted from *A Blueprint for Action: A Resource for Promoting Home Modifications*, the final report of The Second National Working Conference on Home Modifications Policy, compiled and published by The Center for Universal Design, 1997.

Our society's changing demographics include the aging of our population and a greater number of persons with disabling conditions. As a result, many people experience obstacles in their homes that are inconvenient, limiting, and dangerous. They are beginning to realize their homes can better support their needs through home modifications; that they can remain in their homes and neighborhoods rather than move to more institutional settings.

The number and types of individuals who need home modifications will grow dramatically over the next 20 years – families with children with disabilities,

adults with disabilities, middle-aged couples planning for the future, families who accept aging parents into their homes, and an increasingly older population that is aging in place. All are seeking homes that are attractive and offer them convenience, safety, ease-of-use, continued independence, and retained value.

The ability to meet this growing need for home modifications is hampered by lack of information, limited funding, and inadequate services. Because these barriers are interlinked, a complex scenario evolves that negatively affects the availability of home modifications.

In response to these issues, the "First National Conference on Home Modification Policy" was convened in November 1993. This conference, sponsored by The Center for Universal Design, Adaptive Environments, and the NC Assistive Technology Project, addressed the growing gap between the need and available assistance for home accessibility. It brought together policy makers, professionals, and consumers with a common interest in bridging this gap.

Continued on page 3



FROM THE EDITOR

Independence and freedom of choice are highly valued in our society. Most of us, regardless of age or ability, desire to live independently in a home of our own choosing. The lack of usable, accessible housing, however, prohibits freedom of choice for many people.

This lack of usable housing and our country's changing demographics are significantly impacting the demand for accessible home modifications to single-family houses, multi-family units, and mobile homes.

Modifications range from large structural changes, such as bathroom remodeling, to low-tech adaptations, such as door hardware. Current systems for providing and financing such modifications are not sufficient and, as a result, changes at national, state, and local levels are imperative.

All of us – consumers and service providers – play important roles in bringing about this change. In order to be effective, we must become more aware and knowledgeable about home modifications issues and options. This issue of *UD Newsline* is devoted to home modifications, offering an introduction to the current issues and providing resources for further education and involvement. We encourage you to make use of the information presented and share it with others.

Jan Reagan, Editor
Director of Outreach and Dissemination

UD Newsline is published quarterly by The Center for Universal Design in a variety of formats – print, large print, audio cassette, and computer diskettes (DOS/MAC). The annual subscription fee for four issues (Spring, Summer, Fall, Winter) is \$25 for each format. Send subscription orders, indicating format preferred, and payment to: **The Center for Universal Design, UDNewsline**, at the address below. **Prepayment required. Checks and purchase orders only.**

The Center for Universal Design
NC State University
School of Design, Box 8613
Raleigh, NC 27695-8613
919-515-3082 (V/TTY)
919-515-3023 (FAX)
800-647-6777 (Information Line)
cud@ncsu.edu
www.design.ncsu.edu/cud(new address as of 1/1/98)

Major funding provided by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education under grant # H133E40003.

© 1998 NC State University, The Center for Universal Design

THE CENTER FOR UNIVERSAL DESIGN National Advisory Council

The Center for Universal Design's National Advisory Council consists of experts in the field of universal design and other key technical areas who have important linkages to consumers, advocacy groups, service providers, product manufacturers, and the housing industry on a national and state level. The Council serves to advise the Center on its role, direction, and strategies for research, design development, and information dissemination.

The Center convened a two-day meeting of the National Advisory Council in Raleigh, NC, September 19-20, 1997. At this meeting, the Council reviewed the Center's mission and project plans and provided input and counsel on the Center's role in developing and promoting universal design nationally and internationally with other organizations and individuals.

A list of the Advisory Council members and the Center's mission and goals are available on the Center's Web page at www.design.ncsu.edu/cud.

Designing for the 21st Century: An International Conference on Universal Design

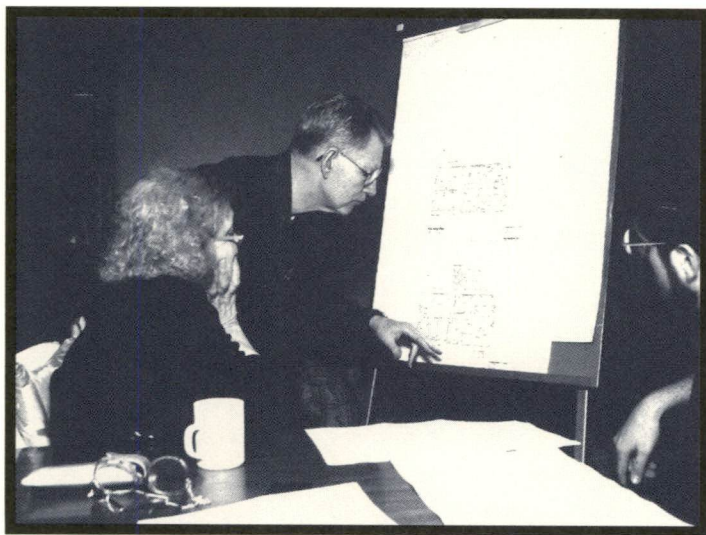
An international conference on universal design of information, products, and environments, sponsored by Adaptive Environments Center, The Center for Universal Design, Hofstra University, and the *Universal Design Newsletter* will be held June 18-21, 1998 at Hofstra University, Long Island, New York.

The conference will involve experts from around the world who are creatively responding to the challenges of universal design including architects, design educators, engineers, facility managers, industrial designers, graphic designers, housing developers, interior designers, landscape architects, product manufacturers, and rehabilitation engineers.

For more information about the conference and registration details, visit the conference Web site at www.adaptenv.org/21century or call Adaptive Environments at **617-695-1225 x0** or The Center for Universal Design at **800-647-6777**.

The conference resulted in the formation of the National Home Modifications Action Coalition, a vehicle for promoting a national agenda for increasing the availability and funding for home modification services.

A second conference, "A Blueprint for Action: The Second National Working Conference on Home Modifications Policy," took place on April 22-23, 1996. Over 60 of the nation's leading experts in disability, aging, housing finance, remodeling, design and construction, community development, and long-term care participated. Coordinated by the National Home Modifications Action Coalition, this conference provided the opportunity to address the need for systems change and develop home modification agendas at community, state, and national levels. Recommendations for systems change in five critical areas resulted from this conference and were published in a final report titled *A Blueprint for Action*. Below is a summary of these recommendations.



Recommendations for Change

1. Leadership and Collaboration

Forming a national, state, or local coalition with specific goals and objectives is an effective way to promote the availability of home modifications. A critical first step is the presence of an organization(s) willing to provide leadership. Coalition members should include representatives from the housing sector, financial institutions, the aging network, the disability community, and the medical system.

2. Research

Coalitions should assess needs, determine the status of services and resources, and demonstrate effectiveness of home modifications. Results of this research should be brought to policy makers and program developers to shape future legislation, regulations, and certification rules. Research should indicate the best methods of service delivery. Evaluation studies can detail how home modifications are cost effective and how they positively affect quality.

3. Education and Awareness

Information and referral centers should be established as central places for consumers, service providers, and policy makers to get timely research and home modifications information. These centers should publish annually-updated materials; establish a toll-free information line; establish housing design awards programs linked with industry awards; document and publicize notable success stories; and develop Internet Web sites. High impact training programs and materials should be developed to cross-train social service, health care, and building professionals, as well as consumers. These training programs can help professions adopt continuing education requirements in universal design.

4. Funding

Funding and financing efforts should focus on developing new sources and reshaping and fully accessing existing sources. Coalitions should encourage health care payers, including Medicare, to continue paying for existing equipment and assistive devices and cover additional home modifications. They should also advocate for private insurers to allow medical insurance payments or reimbursements for home modifications. Existing expenditure caps and restrictions in the Medicaid Waiver program should be lifted. Coalitions should guard against over reliance on federal funds. As needs grow, additional funding streams from states' general revenues should be tapped.

5. Service Delivery

Service delivery efforts should concentrate on developing practitioner expertise by promoting uniform and accurate assessments and producing successful home modification projects that demonstrate quality and efficacy.

Continued on page 4

Coalitions should target and educate health care professionals, social service personnel, and workers in the building industry to become more aware of how to assess problems that environments present for their clients. Consumers, remodelers, medical staff, and professionals in the housing sector need to be convinced that modifications can add and retain value to homes, and reduce the need for future remodeling. Successful models illustrating best practices make it easier for other programs to avoid pitfalls and develop more rapidly.

Conclusion

Modifying existing homes, building new universally designed homes, producing more usable products, and providing a variety of home-directed services all enhance our ability to live and remain in our homes as long as possible. Until our supply of universally-designed homes increases, however, home modifications will occupy a unique position in the mix of approaches for the next several decades.

If you are involved in home modifications, *A Blueprint for Action*, the 56-page final report of the Second National Working Conference on Home Modifications Policy, will be useful to you. The report contains discussions from the conference on the need for home modifications, barriers to effectively meeting this need, and current policies for funding and service delivery. It also contains a full presentation of the recommendations for change summarized in this article.

To obtain a free copy of *A Blueprint for Action*, contact Leon Harper at the American Association of Retired Persons (AARP) Consumer Issues, 601 E. St. NW, Room B4-211, Washington, DC 20049, or e-mail him at lharp@AARP.org. A limited number of free copies are available from AARP. Copies are also available from HUD User (800-245-2691) and The Center for Universal Design for \$5 apiece.



This successful home modification was a collaborative effort involving the homeowners, universal design experts, and a knowledgeable remodeling contractor.

The master bedroom and bath were enlarged. A roll-in shower, grab bars, and an accessible lavatory were added. A no-step entrance was created by constructing an attractive deck and walkway/bridge from the front door to the street.



The National Home Modifications Action Coalition

The National Home Modifications Action Coalition is an association of public and private sector experts, advocates, practitioners, policy makers, and others interested in the lack of support to children, adults, and seniors with disabilities offered by most existing housing. Coalition leaders include The Center for Universal Design, The American Association of Retired Persons (AARP) and the Andrus Gerontology Center. Currently, there are 120 members nationwide and an 18-member steering committee.

The Coalition's mission is to increase the awareness of the need for and the benefits of home modifications; to stimulate the creation and utilization of funding, financing, and other resources that can be used for home modifications; and to stimulate productive and coordinated efforts in the areas of research, product development, and public and private sector home modifications services.

In order to achieve this mission, the Coalition works to establish collaborations among public, non-profit, and industry organizations including the disability community, the aging network, affordable housing advocates, and the health care system. It strives to increase consumer knowledge and demand for quality services and products, expertise within the service delivery system, and awareness and availability of funding and financing sources. It also aims to strengthen the delivery of home support services.

The Coalition carries out its mission by disseminating information to consumers, providers of products and services, and policy makers through the press, print materials, the Internet, education programs, and conference participation. It also develops and supports initiatives to answer key research questions, establish demonstration and pilot programs, promote adoption of universal design by the housing industry, increase availability of universal products, and promote involvement of allied industries (e.g., insurance).

Membership and the Home Modifications Listserv

The Coalition has open membership. Members are kept abreast of new activities, initiatives, and resources through mailings, listservs, Web site bulletin boards, and newsletters. The Coalition also convenes conferences to facilitate the exchange of the latest information and technology.

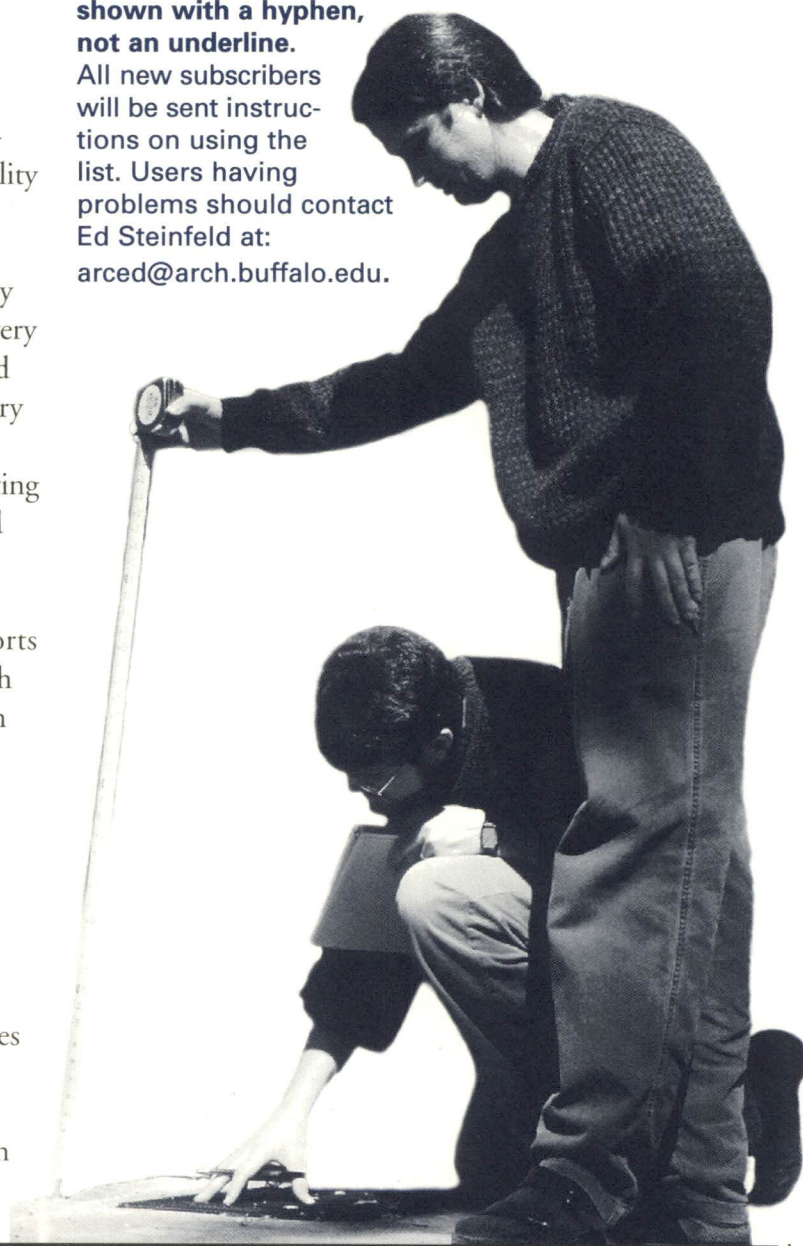
Communication among Coalition members is through the Home Modifications Listserv, operated by Ed Steinfeld at the IDEA Center at the School of Architecture and Planning, SUNY Buffalo.

Announcements of conferences and new resource materials, along with discussions of funding, product, and design issues are included. Searchable archives for the list are now available on the Web at www.reference.com.

To become a member of the coalition, contact Dick Duncan, Coalition Chair, at The Center for Universal Design at 800-647-6777.

To subscribe to the Home Modifications Listserv, send e-mail addressed to: listserv@listserv.acsu.buffalo.edu. In the body of the message, type the following: SUB HOMEMODIFICATIONS-LIST your real name (first name first). The name of the list must be typed exactly as shown with a hyphen, not an underline.

All new subscribers will be sent instructions on using the list. Users having problems should contact Ed Steinfeld at: arced@arch.buffalo.edu.



Promoting Successful Aging in Place: The Home Modification Action Project

In January 1997, the Andrus Gerontology Center at the University of Southern California (USC) received funding from The Archstone Foundation for "Successful Aging in Place: The Home Modification Action Project" (HMAP). The project's goal is to increase the availability of home modifications so frail older and disabled persons have the choice to age in place and care giving can take place in a supportive environment.

The HMAP has a three-year, multi-faceted approach that includes the following activities: sustaining and expanding the efforts of the National Home Modifications Action Coalition, including a Third National Conference on Home Modifications; promoting information sharing among consumers and professionals via "The Accessible Home Page," a World Wide Web site (see below); developing an inventory of state home modification policies and programs; and developing a model local home modification coalition in Southern California to be replicated elsewhere.

The HMAP Web site, "The Accessible Home Page" at www.usc.edu/go/hmap, is the premier Web site on home modifications. It includes excerpts and full-text publications on home modifications, safety assessment tools and checklists, links to other Web sites, a bulletin board for information exchange, and an interactive chat room. The site is an excellent source for builders, remodelers, consumers, rehabilitation specialists, and eldercare professionals.

If you have questions about the Web site or the Home Modification Action Project, contact: Julie Overton, Project Manager, USC Andrus Gerontology Center, at 213-740-1364 (phone), 213-740-8241 (fax), or hmap@usc.edu (e-mail).

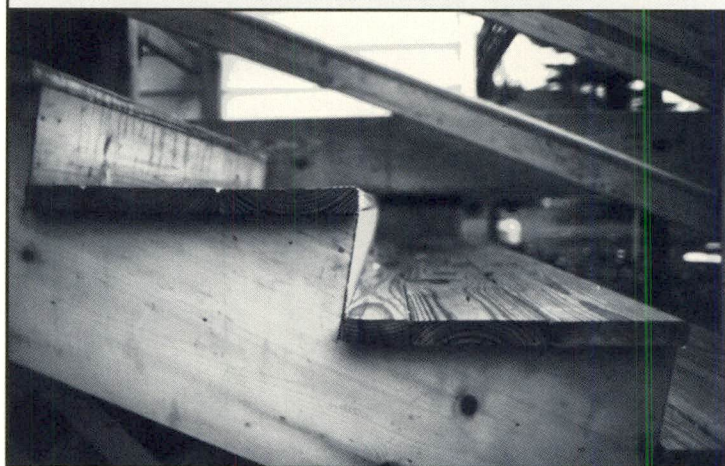


HOME MODIFICATIONS SOLUTIONS

Below is a summary of modifications that can be made to make a home safer and more usable. For more information on design and products, or how to find a knowledgeable contractor to do the work, consult the resources listed in the "Home Modifications: Resources" article on pages 8 & 9 of this newsletter.

Entrances

Stairs: repair or improve; add hand rails and lighting, fill in open risers; eliminate projecting nosings



Short, inclined risers with no projecting nosings and longer treads make stair climbing easier.

Ramps/Lifts: add ramps (max. slope=1:12) or a vertical platform wheelchair lift

Doorways: widen doorway or add offset-hinges to provide clearance of minimum 32 inches wide; change latches and locksets; add lever handles

Lighting: add motion detection; security lighting

General Interior

Level Changes: add easily gripped railings to stairs; add a chair-lift or platform lift to stairs; add a residential elevator

Doors/Doorways: widen doorways or add offset-hinges to provide clearance of minimum 32 inches wide; add lever handles

Widened doorways and lever door handles provide greater access for everyone.

Space: increase space by removing extra furniture and objects in hallways and rooms; reverse the swing of the door to create more floor space in room; add or expand rooms

Lighting: increase light levels; add rocker-type light switches; add remote access or automated control of lighting; improve control of lighting to reduce glare

Flooring: apply non-skid surfaces; remove and/or secure floor covering (e.g., rugs, carpets); replace thick, soft carpet with a denser, lower pile

Assistive Devices: add alarm and alerting devices for hearing impaired or visually impaired as needed; install assistive listening devices for small room amplification, personal listening, TV listening; install smoke alarms with carbon monoxide detection that have audio and visual indicator (strobe light) or tactile indicator (bed shaker)

Security: install a Personal Emergency Response System; install a home security system; install a home monitoring system

Bathroom

Bathtub: add a tub seat or bench; convert bathtub to shower; replace standard shower head with an adjustable height one with hand-held spray; mount grab bars around tub or shower on reinforced walls; replace knob controls with lever handles; add an anti-scald mixing valve



A tub seat with a transfer bench is a simple adaptation for people who have difficulty getting in and out of the tub.

Toilet: add an elevated toilet seat or replace conventional height toilet with one 17 to 18 inches high; mount grab bars around toilet on reinforced walls

Lifts: install portable, floor-mounted, or ceiling-mounted lift for transfers to toilet and tub or shower

Sink: provide seated access by removing base cabinet and concealing or insulating pipes; replace vanity cabinet and sink with countertop or wall-hung sink (32 inches recommended height); replace faucet controls with lever-type handles

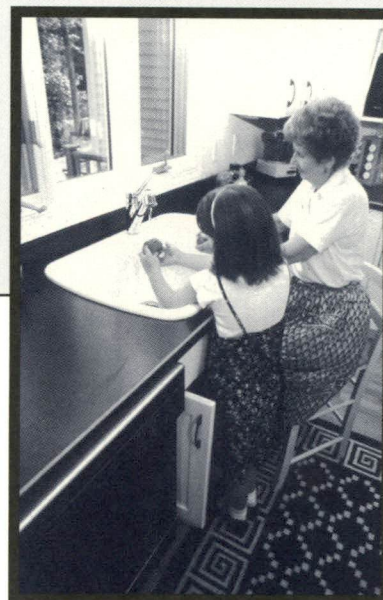
Kitchen

Cabinets: lower or raise to comfortable height; replace shelves with drawers or pull-out components; lower or add work surfaces; remove base cabinets to allow seated access; replace knobs on drawers and cabinet doors with loop handles.

Appliances: place small appliances on lowered cabinets for easier access; if replacing stove or oven, select units with front-mounted controls; add knob adapters on appliances that have difficult-to-use controls

Sink: provide seated access by removing base cabinet and concealing or insulating pipes; replace faucet controls with lever-type handles

Removing base cabinets under the kitchen sink allows seated access. Retractable cabinet doors under the sink can be closed when seated access is not required.



Design Guides and Manuals

The Accessible Housing Design File, Barrier Free Environments, Inc., Van Nostrand Reinhold, 1991, 213 pp. Now available from: John Wiley & Sons, 1 Wiley Street, Somerset, NJ 08875, 800-225-5945, **\$54.95 + sales tax + \$2.50 s/h**, ISBN 0471 284 36X

Building a Ramp: Consumer Manual on Accessibility, John Henson, Independent Living Resource Center, Inc., 1988, 57 pp. Order from: RIDAC Program, Rehabilitation Services, 720 W. 3rd Street, Little Rock, AR 72201, **\$10**

Building for a Lifetime: The Design and Construction of Fully Accessible Homes, Margaret Wylde, Adrian Baron-Robins, and Sam Clark, Taunton Press, 1994, 295 pp. Order from: The Taunton Press, 63 South Main Street, P.O. Box 5507, Newtown, CT 06470-5507, 800-926-8776, **\$44.95 + \$4 s/h**, ISBN 1-56158-036-8

A Consumer's Guide to Home Adaptation, Adaptive Environments Center, 1989, 52 pp. Order from: Adaptive Environments Center, 374 Congress Street, Suite 301, Boston, MA 02210, 617-695-1225 (V/TTY), **\$12**

The Do-Able Renewable Home: Making Your Home Fit Your Needs, John Salmen, American Association of Retired Persons, rev. 1994, 36 pp. Order from: AARP, 601 E Street, NW, Washington, DC 20049, (Stock#D12470), **Free**

Elder Design: Designing and Furnishing Your Home for Later Years, Rosemary Bakker, Penguin Books, 1997, 228 pp. Order from: Penguin Books, 375 Hudson Street, New York, NY 10014, 800-526-0275, **\$14.95**, ISBN 0 14 02.5809 4

Home Planning for Your Later Years, William K. Wasch, Beverly Cracom Publishers, 1996, 181 pp. Order from: Beverly Cracom Publishers, 12131 Dorsett Road, Suite 109, St. Louis, MO 63043, **\$19.95**, ISBN 1-886657-07-6

Home Safety Guide for Older People: Check It Out/Fix It Up, Jon Pynoos and Evelyn Cohen, Serif Press, 1990, 66 pp. Order from: Center for the Study of Aging, Serif Press, Inc., 1331 H Street, NW, Washington, DC 20005, 800-221-4272, **\$13.95** ISBN 0-914-125-01X

How to Build Ramps for Home Accessibility, Metropolitan Center for Independent Living, Inc., 1992, 63 pp. Order from: MCIL, 1600 University Avenue West, St. Paul, MN 55104-3825, 612-646-8342 (V) or 612-603-2001 (TDD), **Free**

Making Life More Livable: Simple Adaptations for the Homes of the Blind and Visually Impaired Older People, Irving R. Dickman, American Foundation for the Blind, 1983, 92 pp. Order from: AFB, Inc., 11 Penn Plaza, Suite 300, New York, NY 10001, 800-232-3044, **\$19.95 + s/h**

Residential Remodeling and Universal Design: Making Homes More Comfortable and Accessible, NAHB Research Center and Barrier Free Environments, Inc., HUD, 1996, 114 pp. Order from: HUD USER, P.O. Box 6091, Rockville, MD 20850, 800-245-2691, (Pub #HUD-1604-PDR), **\$5**

Staying Put: Adapting the Places Instead of the People Susan Lanspery and Joan Hyde, eds., Baywood Publishing, 1997, 295 pp. Order from: Baywood Publishing Co., Inc., 26 Austin Avenue, Amityville, NY 11701, 516-691-1270, **\$39.95 + \$4 s/h**, ISBN 0-89503-133-7

Videos and Slide Shows

Accessible Home Modifications Slide Show and Script, Center for Accessible Housing, NCSU, 1995, 80-slide show and script. Order from: The Center for Universal Design, NCSU, Box 8613, Raleigh, NC 27695-8613, **\$75**

Building and Remodeling for Accessibility, Hometime, 1993, 35+-minute video. Order from: Hometime, 4275 Norex Drive, Chaska, MN 55318, 800-489-9955 (Order No. 4056), **\$11.95 + s/h**

Changing Needs, Changing Homes: Adapting Your Home to Fit You, American Occupational Therapy Foundation, 1996, 15-minute video. Order from: AOTF, 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220, 301-652-2682, **\$25.00 for AOTA members; \$35.00 for non-members + s/h**

Home Access Solutions: Ramps and Stairs, Metropolitan Center on Independent Living. Order from: MCIL, 1600 University Avenue West, St. Paul, MN 55104-3825, 612-646-8342 (V) or 612-603-2001 (TDD), **Free**

A Vision of Independence, Atlanta Research and Education Foundation, 1991, 26-minute video. Order from: AREF, 1670 Clairmont Road, Decatur, GA 30033, 404-728-5064, **\$75 + s/h**

HOME MODIFICATIONS: *Resources*

Why Move? Improve!! Lifelong Comfort in Your Home,
American Association of Retired Persons, 1996, 13:27-
minute video. Order from: AARP, 601 E Street, NW.,
Washington, DC 20049, 202-434-6030, **\$4.50 s/h only**

Web Sites

HMAP - The Accessible Home Page

www.usc.edu/go/hmap

The premier site on home modifications, this page includes articles, publications, reports, a bulletin board, and an interactive chat room.

Hometime® Home Page

www.pbs.org/hometime

Information and excerpts from the home remodeling show, Hometime®, appear on this site. A segment on accessibility is included under the "How to Center" in the "Homewise" category.

IDEA Center

www.arch.buffalo.edu/~idea

"Home Modifications" are featured as a "Special Interest Site." Information on the Home Modifications Discussion List is included here.

Remodeling Online

www.remodeling.hw.net

This site provides articles and photographs of universal design ideas for kitchens and baths in its "Design" section, "The Library." It also includes a guide to 1000+ remodelers under its "Find a Pro" page.

Team Rehab Online

www.teamrehab.com

Articles on home accessibility from Team Rehab Report are available at this site in the "Magazine" category under "Archives." See issues: 4/96, 5/97, 8/97.

Universal Design & Home Accessibility

www.exnet.iastate.edu/Pages/housing/universal-design.html (hyphen is part of this address)

Maintained by Mary Yearns, professor at Iowa State University, this page includes universal design information, home assessment assistance, remodeling tips, and resources.

Universal Design in Housing and the Built Environment

www.design.ncsu.edu/cud/h&be/h&beindex.html

Links to resources and other Web sites on universal design in housing, products, and the built environment are provided on this gateway site.

Professional Associations

AOTA - American Occupational Therapy Association

301-652-2682(V)/800-377-8555 (TTY)

www.AOTA.org

Many OTs specialize in home assessments for accessibility. Tips for locating OTs are provided under "Consumer Information" on the Web page. A "Consumer Fact Sheet" on bathroom modifications is also included.

NAHB - National Association of Home Builders

800-368-5242

www.nahb.com

The NAHB Remodelers Council provides information on choosing a remodeler. Information is also available on the Web site under "Especially for Consumers, Guide to Remodeling." You may also check with your local home builders association.

NARI - National Association of the Remodeling Industry 800-966-7601

www.nari.org

NARI provides a guide for hiring a remodeler and lists of certified remodelers for any region of the U.S. The Web site includes universal design articles under "Design Ideas" and assistance for selecting a remodeler under "Find a NARI Pro."

NKBA - National Kitchen and Bath Association

800-843-6522

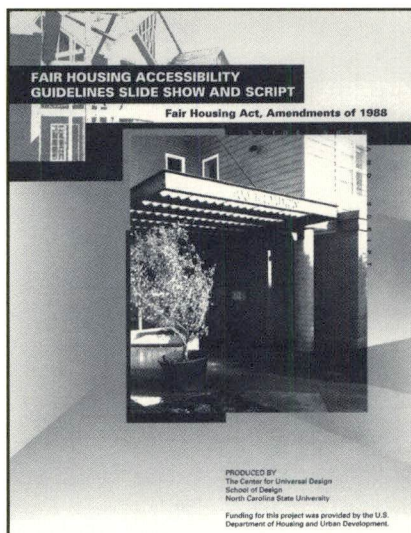
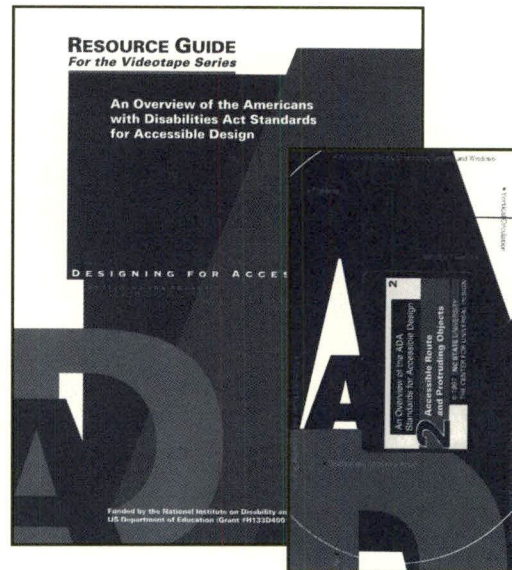
www.nkba.org

Summaries of the universal kitchen and bath planning checklists and guidelines are available on the Web site under "Consumer Information - Design Guides and Safety Tips." Assistance for selecting a designer is available under "Find a Design Professional."

New Materials from the Center (order form p. 11)

ADA Standards for Accessible Design: A Videotape Series

An excellent resource for those responsible for physical and communications accessibility in public accommodations and commercial, state, and local government facilities, this series of nine videotapes presents the requirements of the *ADA Standards for Accessible Design* by topic. Each videotape is 15 to 20 minutes in length and contains closed-and open-captioned versions. Four of the nine videotapes are currently available. For a brochure listing the complete series and scheduled release dates, contact the Center. **\$20.00 per video (non-profits); \$35.00 per video (businesses)**

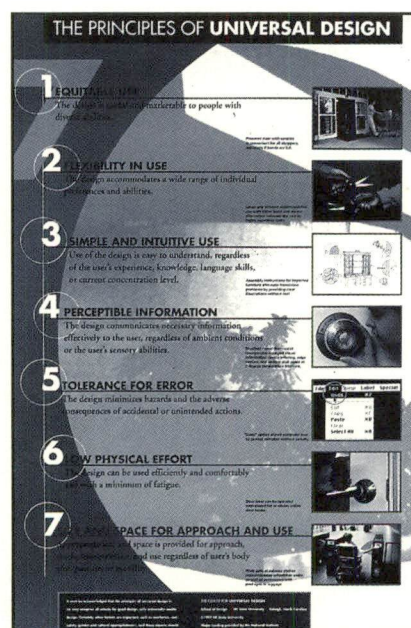


Fair Housing Accessibility Guidelines Slide Show and Script

This 120-slide show and script presents an overview of the accessible design and construction requirements for new multifamily dwellings covered by the Fair Housing Act. It communicates the intent of the requirements described in the Accessibility Guidelines issued by HUD in 1991 and presents richly illustrated design solutions for more usable housing. The show is a valuable resource for anyone involved in multifamily housing design, development, or construction. (Note: Revision of the Center's 1992 *FHAA Slide Show*) **\$120.00 (non-profits); \$150.00 (businesses)**

Universal Design Poster

The seven Principles of Universal Design, developed at The Center for Universal Design, apply to the design of environments, products, and communications. They are intended as a guide for new designs and the evaluation of existing ones. This 22 1/2" x 33", four-color poster is an illustrative presentation of the seven Principles that is well-suited for offices, classrooms, and design studios **\$5.00**



ORDER FORM for New Materials

To order the materials listed on page 10, complete this order form and return it with a check or purchase order to **The Center for Universal Design, Box 8613, NC State University, Raleigh, NC 27695-8613**. Prepayment required. No credit cards accepted.

Checks and POs payable to: THE CENTER FOR UNIVERSAL DESIGN

Name _____

Affiliation _____

Address _____

City _____ State _____ Zip _____

Country _____ Telephone _____

TITLE	# COPIES	TOTAL
-------	----------	-------

ADA Video #2 Accessible Route & Protruding Objects

\$20 per videotape (non-profit or educational institutions price) _____ @ \$20 = _____

\$35 per videotape (businesses or commercial entities price) _____ @ \$35 = _____

ADA Video #4 Accessible Parking & Curb Ramps

\$20 per videotape (non-profit or educational institutions price) _____ @ \$20 = _____

\$35 per videotape (businesses or commercial entities price) _____ @ \$35 = _____

ADA Video #6 Accessible Doors & Entrances

\$20 per videotape (non-profit or educational institutions price) _____ @ \$20 = _____

\$35 per videotape (businesses or commercial entities price) _____ @ \$35 = _____

ADA Video #8 Communications

\$20 per videotape (non-profit or educational institutions price) _____ @ \$20 = _____

\$35 per videotape (businesses or commercial entities price) _____ @ \$35 = _____

Fair Housing Accessibility Guidelines Slide Show and Script

\$120.00 (non-profits or educational institutions price) _____ @ \$120 = _____

\$150.00 (businesses or commercial entities price) _____ @ \$150 = _____

Universal Design Poster

\$5.00 _____ @ \$5 = _____

Total Enclosed

Updates

The Center for Universal Design Web site has a new address. The new address is www.design.ncsu.edu/cud. If you have bookmarked our site or provide a link, please change the address. Also, the Center's site will be restructured within the next few months to provide better access to resources.

"Designing for the 21st Century: An International Conference on Universal Design" will take place at Hofstra University, June 18-21, 1998. On-line registration information is available on the Adaptive Environments Web site at www.adaptenv.org/21century (See related article p. 2).

Universal Designers & Consultants, Inc., publisher of *Universal Design Newsletter*, has a Web site at www.UniversalDesign.com. The site offers resources, links to other universal design sites, and an interactive chat room.

Universal Kitchen and Bath Planning Guidelines can be found on the Web on the National Kitchen and Bath Association (NKBA) site at www.nkba.org/consumerguidelines.html.

There is now a **Forum on Universal Design** available on **The IDEA Center** Web site at www.arch.buffalo.edu/~idea. The Forum, a Web-based bulletin board for the discussion of universal design, accessibility, and other topics, is an IDEA Center Special Interest Site.

"Designing A More Usable World" on the **Trace Center's** Web site at www.trace.wisc.edu/world/ provides links to other sites on universal design in telecommunications, computers and software, consumer products, web page design, housing and the built environment, and outdoor environments.

THE CENTER FOR UNIVERSAL DESIGN new Web site address:

www.design.ncsu.edu/cud

THE CENTER FOR UNIVERSAL DESIGN
NC State University
School of Design
Box 8613
Raleigh, NC 27695-8613

Address Service Requested

NONPROFIT ORG. US POSTAGE PAID RALEIGH, NC PERMIT NO. 2353
--

**ACHIEVING
UNIVERSAL DESIGN***by Molly Follette Story*

Universal Design is design for people of all ages and abilities and is applicable to all design disciplines including architecture, landscape architecture, industrial design, and graphic design. Universal design accommodates people with disabilities, older people, children, and others who are "non-average," in a way that is not stigmatizing and benefits all users. Universal design results in easier use for everyone while reducing the need for modifications later when abilities change.

Throughout its history, the universal design concept has suffered from a lack of established criteria to define what makes a design most usable. Traditionally, universal design has been communicated through presentation of good examples that embody aspects of the concept. Until now, the only usability criteria available have been provided by accessibility guidelines such as the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

As part of a research and demonstration project to further the development of universal design, sponsored by the U.S. Department of Education's National Institute on Disability and Rehabilitation Research (NIDRR), The Center for Universal Design assembled a team of universal design experts to generate a list of principles of universal design.

This team identified seven principles that apply to the design of environments, products, and communications. These principles are intended to guide the design process, allow the systematic evaluation of existing designs, and assist in educating both designers and consumers about the characteristics of more usable products and environments.

It is important to understand that these principles of universal design in no way comprise all criteria for good design, only universally usable design. Other factors such as aesthetics, cost, safety, gender, and cultural appropriateness must also be taken into consideration. Also, achieving an absolute universal design for any product or space may not always be possible. The needs of different users often conflict with one another, making it difficult for one design to satisfy everyone. Even so, these principles can facilitate designing to maximize usability for the largest number of people possible.

Definitions and guidelines for the seven Principles of Universal Design begin on page 4 of this newsletter.



FROM THE EDITOR

We hope you find this debut issue of *UD Newsline* useful and informative. We are delighted to be able to share news of the Center, universal design, and accessible housing with you once again.

We published the last issue of the Center for Accessible Housing's *NEWS* in August 1995. We welcome back previous readers of *NEWS* and thank all of you who responded to our newsletter survey. Your positive comments and expression of need for this information greatly influenced the publication of *UD Newsline*. We also welcome new readers and encourage each of you to share this newsletter with friends, family, colleagues, and even strangers!

We will publish four issues of *UD Newsline* annually, with each issue containing articles on universal design research and applications, housing issues, activities of the Center and other organizations, technical design tips, and updates on new materials and resources. In order to support production and distribution, we are implementing a subscription fee of \$25 for four issues. (subscription order form included in this issue)

Universal design is an essential element of good design. The Center is dedicated to providing the best information and technical assistance possible to advance this concept. We hope you will subscribe to the newsletter and help spread the word.

Thank you,

Jan Reagan
Editor, *UD Newsline*
Director of Outreach and Dissemination

UD Newsline is published quarterly by The Center for Universal Design in a variety of formats – print, large print, audio cassette, and computer diskettes (DOS/MAC). The annual subscription fee for four issues (Summer, Fall, Winter, Spring) is \$25 for each format. Send subscription orders, indicating format preferred, and payment to: **The Center for Universal Design, UDNewsline** at the address below. **Prepayment required. Checks and purchase orders only.**

The Center for Universal Design
NC State University
School of Design, Box 8613
Raleigh, NC 27695-8613
919-515-3082 (V/TTY)
919-515-3023 (FAX)
800-647-6777 (Information Line)
cud@ncsu.edu
www2.ncsu.edu/ncsu/design/cud

Major funding provided by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education under grant # H133E40003.

MOVING FORWARD

This has been an exciting and busy time at the Center. Many changes have occurred since you last heard from us. You likely have already noticed our name change to The Center for Universal Design. This new name reflects our vision that the built environment and products should be usable, to the greatest extent possible, by everyone regardless of their age or ability. We will, of course, still focus on housing as one important component of the built environment along with public facilities and products that people use.

As the Center's new executive director, I hope to build on our strengths while also looking for new opportunities to expand and enhance what the Center does. We have recently completed a strategic planning process to better define the Center's mission, goals, and objectives for the next 3 years. While I see us maintaining our core programs – research, training, information, and design assistance – I also see the Center emphasizing more the outcomes and changes that result from our work.

Let me explain. In the past, we may have conducted training for occupational therapists on how to make low-cost, low-technology home modifications. The "product" of our effort was the training event and instructional materials. In our new framework, this training becomes part of a larger, long-term goal to include universal design in allied health education. Knowing the desired outcome, we can then develop strategies and determine appropriate measures to tell us how well we are meeting our goal. Similarly, most if not all of the Center's programs and services will be considered part of targeted, long-term systems change objectives.

As public demand increases for better designed homes, facilities, and consumer products, I want The Center for Universal Design to be recognized as the leader in its field. Moving forward must be a partnership with you, Center staff, and our national collaborators. I welcome your comments and suggestions on making all aspects of the Center more responsive to your needs.

Larry Trachtman
Executive Director

UNIVERSAL DESIGN ON THE WEB

You can't watch TV, read a magazine, or listen to the radio without seeing or hearing some reference to the Internet or the World Wide Web. It's "e-mail" this "dot.com" that. So, what's so special about this brave new world of communications? Just about everything!

The Web affords opportunities for visual, verbal, and written exchanges never before realized. It opens doors to global interactions and information sharing for people of all ages and abilities. And, because the Web supports varying levels of presentation including text, graphics, and multimedia, universal access to all information can be a reality.

Universal design information including principles, guidelines, and solutions is now available on the Web at a variety of sites. Information on designing accessible/universal Web pages is also available. Listed here are a few of the gateway sites for universal design information. Bookmark these sites and visit them often to keep updated and informed.

Universal Design

The Center for Universal Design

www2.ncsu.edu/ncsu/design/cud

Adaptive Environments Center, Boston

<http://www.adaptenv.org>

IDEA - Center for Inclusive Design and Environmental Access

School of Architecture and Planning
University at Buffalo

<http://www.arch.buffalo.edu/~idea>

Trace Center, University of Wisconsin

<http://trace.wisc.edu/>

Designing Accessible Web Pages

CPB/WGBH National Center for Accessible Media (NCAM)

<http://www.boston.com/wgbh/pages/ncam/ncamhome.html>

Trace Center, University of Wisconsin

<http://trace.wisc.edu/>

WebABLE!

<http://www.yuri.org/webable>

National Center for the Dissemination of Disability Research

<http://www.ncddr.org>

Universal Web Design

Crystal Waters, New Riders Publishing, 1997,
305 pp., ISBN 1-56205-738-3
Cost: \$39.99

Available from: New Riders Publishing,
201 West 103rd Street, Indianapolis, IN 46290

http://

THE PRINCIPLES OF UNIVERSAL DESIGN - Version 2.0 (4/1/97)

© 1997 NC STATE UNIVERSITY THE CENTER FOR UNIVERSAL DESIGN

PRINCIPLE ONE

Equitable Use



Definition

The design is useful and marketable to people with diverse abilities.

Guidelines

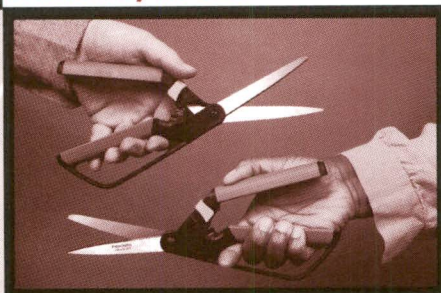
- 1a.** Provide the same means of use for all users:
identical whenever possible; equivalent when not.
- 1b.** Avoid segregating or stigmatizing any users.
- 1c.** Make provisions for privacy, security,
and safety equally available to all users.
- 1d.** Make the design appealing to all users.

Examples

- Power doors with sensors at entrances that are convenient for all users
- Integrated, dispersed, and adaptable seating in assembly areas such as sports arenas and theaters

PRINCIPLE TWO

Flexibility in Use



Definition

The design accommodates a wide range of individual preferences and abilities.

Guidelines

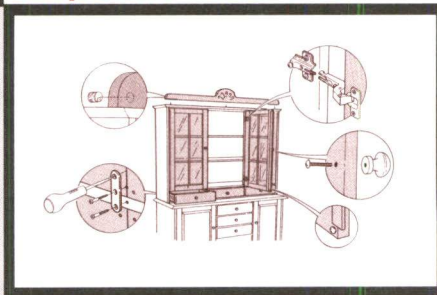
- 2a.** Provide choice in methods of use.
- 2b.** Accommodate right-or left-handed access and use.
- 2c.** Facilitate the user's accuracy and precision.
- 2d.** Provide adaptability to the user's pace.

Examples

- Scissors designed for right-or left-handed users
- An automated teller machine (ATM) that has visual, tactile, and audible feedback, a tapered card opening, and a palm rest

PRINCIPLE THREE

Simple and Intuitive Use



Definition

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines

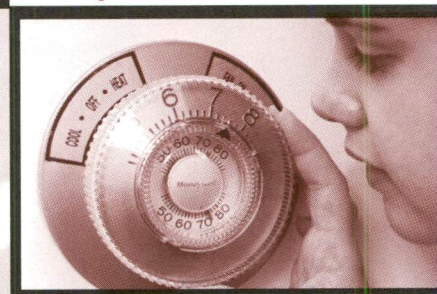
- 3a.** Eliminate unnecessary complexity.
- 3b.** Be consistent with user expectations and intuition.
- 3c.** Accommodate wide range of literacy and language skills.
- 3d.** Arrange information consistent with its importance.
- 3e.** Provide effective prompting and feedback during and after task completion.

Examples

- A moving sidewalk or escalator in a public space
- An instruction manual with drawings and no text

PRINCIPLE FOUR

Perceptible Information



Definition

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines

- 4a.** Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b.** Maximize "legibility" of essential information
- 4c.** Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4d.** Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Examples

- Tactile, visual, and audible cues and instructions on a thermostat
- Redundant cueing (e.g., voice communications and signage) in airports, train stations, and subway cars

PRINCIPLE FIVE

Tolerance for Error



Definition

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines

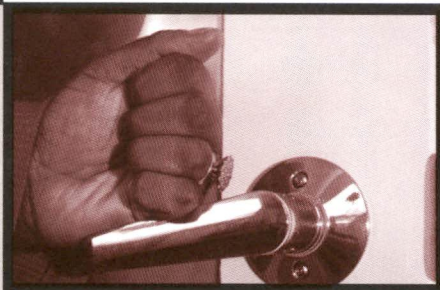
- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

Examples

- A double-cut car key easily inserted into a recessed keyhole in either of two ways
- An "undo" feature in computer software that allows the user to correct mistakes without penalty

PRINCIPLE SIX

Low Physical Effort



Definition

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines

- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

Examples

- Lever or loop handles on doors and faucets
- Touch lamps operated without a switch

PRINCIPLE SEVEN

Size and Space for Approach and Use



Definition

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

Examples

- Controls on the front and clear floor space around appliances, mailboxes, garbage dumpsters, and other building elements
- Wide gates at subway stations that accommodate all users

The Principles were compiled by advocates of universal design, in alphabetical order:

Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden.

A four-color, illustrated poster of the seven Principles of Universal Design is now available. To order, send a check or purchase order for \$5 to:

THE CENTER FOR UNIVERSAL DESIGN
North Carolina State University
Box 8613, Raleigh, NC 27695-8613

MULTIFAMILY HOUSING

- The Design of Fair Housing *by Jan Reagan and Phill Zook*

In any given area of the United States today, the quest for accessible housing is definitely a challenge. Whether looking for an apartment, a condominium, or a single family dwelling, you will find most housing is inaccessible for people with disabilities, particularly those with mobility disabilities. There is currently no legal requirement for new single family housing to be accessible; however, there is a federal law that mandates accessibility in new multifamily housing.

In 1988, the Fair Housing Amendments Act (FHAA) was enacted by Congress, extending coverage of Title VIII of the Civil Rights Act of 1968 commonly known as The Fair Housing Act (the Act). The Fair Housing Act prohibits discrimination in the sale, rental, and financing of dwellings based on race, color, religion, sex, or national origin. The FHAA expands coverage of the Fair Housing Act to prohibit discriminatory housing practices based on family status or disability. It also recognizes that the built environment can be discriminatory and obligates all new multifamily housing built for first occupancy after March 13, 1991 to comply with seven specific accessible design requirements. Enforcement of the Act is primarily the responsibility of the U.S. Department of Housing and Urban Development (HUD).

In March 1991, HUD issued its final Fair Housing Accessibility Guidelines that provide technical guidance for meeting the seven requirements of the FHAA. However, many new multifamily projects being built fail to meet these requirements. Reasons for non-compliance range from complete ignorance of the law to technical misinterpretations of the requirements. Many developers and designers lack awareness of the

needs of people with disabilities to live independent lives. Although these reasons explain non-compliance, none will protect developers from complaints filed against their properties and potential lawsuits. Quite simply, non-compliance is unacceptable.

In order to increase understanding of the Act and facilitate compliance with the accessibility requirements, HUD has funded numerous training initiatives, technical assistance, and materials development projects through its Fair Housing Initiatives Program (FHIP). Because of FHIP and other HUD efforts, there are now design resources and technical assistance to assist multifamily housing specialists. The following list contains many of these resources including the *Fair Housing Act Design Manual*, a fully illustrated technical design manual. These resources are essential tools for architects, developers, builders, planners, landscape architects, property managers, and advocacy organizations involved in multifamily housing.

If you have questions about enforcement of the Fair Housing Act or wish to file a complaint, you may contact HUD at 800-669-9777 or 800-927-9275 (TTY).

If you require technical assistance on the accessibility requirements of the Fair Housing Act, you may contact The Center for Universal Design at 800-647-6777 (V/TTY).

FAIR HOUSING RESOURCES

G Fair Housing Accessibility Guidelines
Final Design Guidelines for Accessible/Adaptable Dwellings 56 Federal Register 9472-9515, March 6, 1991, 24CFR Ch.I, Subch. A, App II
Cost: **\$5.00**

Fair Housing Accessibility Guidelines; Questions and Answers; Supplement to Notice
59 Federal Register 33362-33368, June 28, 1994
Cost: **\$5.00**

Both available from: Fair Housing Information Clearinghouse, P.O. Box 9146, McLean, VA 22102
800-343-3442 or on the Web at
www.hud.gov/fhefhasp.html



D Design Manual

Fair Housing Act Design Manual

Barrier Free Environments, Inc., U.S. Department of HUD, 1996, 242+ pp. + appendices

Cost: **\$10.00**

Available from: Fair Housing Information Clearinghouse, P.O. Box 9146, McLean, VA 22102 800-343-3442

B Books and Pamphlets

Adaptable Housing: Marketable Accessible Housing for Everyone

Barrier Free Environments, Inc., U. S. Department of HUD, 1987, 77 pp.

Cost: **\$5.00**

Cost of Accessible Housing: An Analysis of the Estimated Cost of Compliance with the Fair Housing Accessibility Guidelines and ANSI A117.1

Steven Winter Associates, Inc., Tourbier & Walmsley, Inc., Edward Steinfeld, and Building Technology, Inc., U.S. Department of HUD, 1993, 175+ pp.

Cost: **\$5.00**

Both available from: HUD USER, P.O. Box 6091, Rockville, MD 20850, 800-245-2691

The Fair Housing Accessibility Requirements: How to Make Them a Marketing Advantage

The Center for Universal Design, 1995, 15 pp.

Cost: **\$3.00**

The New Fair Multifamily Housing: A Design Primer to Assist in Understanding the Accessibility Requirements of the Fair Housing Act

The Center for Universal Design, 1996, 36 pp.

Cost: **\$5.00**

Rights and Responsibilities of Tenants and Landlords Under the Fair Housing Amendments Act

The Center for Universal Design, 1995, 12 pp.

Cost: **\$3.00**

Tenant's Guide to Apartment Modifications: An Idea Source Pamphlet to Simple, Low-cost Modifications to Increase Accessibility in Apartments

The Center for Universal Design, 1996, 18 pp.

Cost: **\$3.00**

Four booklets available from: The Center for Universal Design, NC State University, Box 8613, Raleigh, NC 27695-8613, 800-647-6777 (V/TTY)

What Does Fair Housing Mean to People with Disabilities?

Bazon Center for Mental Health Law, 1994, 27 pp.

Cost: **\$3.00**

Available from: Bazon Center for Mental Health Law, Publications Desk, 1101 15th Street, NW, Suite 1212, Washington, DC 20005-5002

S Slide Shows and Videos

The Fair Housing Amendments Act Accessibility Guidelines

The Center for Universal Design, slide show and script, 1997 revision

Cost: **\$120.00** nonprofits and educational institutions; **\$150.00** businesses and commercial organizations

Available from: The Center for Universal Design, NC State University, Box 8613, Raleigh, NC 27695-8613, 800-647-6777 (V/TTY)

HUD Fair Housing Accessibility Guidelines

U.S. Department of HUD, 1996, 28-minute video, open captioned

Cost: **\$15.00**

Available from: Fair Housing Information Clearinghouse, P.O. Box 9146, McLean, VA 22102, 800-343-3442

Internet

Many regional, state, and local fair housing organizations and HUD fair housing offices have Web sites. To obtain fair housing information, visit the sites listed below or search the web using an Internet search engine such as Yahoo!, Hotbot, or Altavista. Search for "fair housing" and "disability."

U.S. Department of Housing and Urban Development, Office of Fair Housing and Equal Opportunity

www.hud.gov/prgfhoeo.html

Fair Housing Legal Support Center at John Marshall Law School

www.jmls.edu/housing/fhcenter.html

National Fair Housing Advocate

www.fairhousing.com

DESIGNING FOR THE 21ST CENTURY

An International Conference on Universal Design

An international conference on Universal Design, sponsored by Adaptive Environments Center, The Center for Universal Design, Hofstra University, and the *Universal Design Newsletter* will be held June 18-21, 1998 at Hofstra University in New York. The conference is being held concurrently with the Fourth Annual Universal Design Education Project Forum.

The conference will involve experts from around the world who are creatively responding to the challenges of universal design including architects, design educators, engineers, facility managers, industrial designers, graphic designers, housing developers, interior designers, landscape architects, product manufacturers, and rehabilitation engineers. It will include plenary sessions, seminars, workshops, papers, poster presentations, exhibits of professional design work, and a juried student design competition.

Call for Participation

The conference planners invite proposals for varied formats including CEU or AIA Learning Unit seminars related to the conference topic areas:

- ▲ **Universal Design Practice:** including posters of indoor/outdoor environments or marketing materials/strategies, displays of products, and seminars or workshops.

- ▲ **Universal Design Education:** including posters of student projects, extracurricular activities, teaching strategies, displays of educational materials, and papers or workshops.
- ▲ Design Faculty are encouraged to plan studio projects for the student design competition: **Universal Design for the 21st Century.**

You may obtain the Conference Participation Package with guidelines for submissions on the World Wide Web at www.adaptenv.org/21century/ or from:

Adaptive Environments

374 Congress Street, Suite 301
Boston, MA 02210, USA
Phone: 617-695-1225, ext. 0
Fax: 617-482-8099
E-Mail: costroff@adaptenv.org

Deadline for submission of proposals: **10/1/97**

Deadline for submission of student projects: **1/16/98**

Questions concerning submissions should be directed to **Adaptive Environments at 617-695-1225, ext. 0.**

THE CENTER FOR UNIVERSAL DESIGN
NC State University
School of Design
Box 8613
Raleigh, NC 27695-8613

Address Service Requested

NONPROFIT ORG.
US POSTAGE
PAID
RALEIGH, NC
PERMIT NO. 2353

HOUSING FOR THE LIFESPAN OF ALL PEOPLE



UNIVERSAL DESIGN

"Too often older or disabled people live limited lives or give up their homes and neighborhoods prematurely because standard housing of the past cannot meet their needs. While a truly universally usable house is a goal for the future, many features in houses today already are or easily can be made universally usable. The universal design concept increases the supply of usable housing by including universal features in as many houses as possible, and allows people to remain in their homes as long as they like."

Ronald L. Mace, FAIA

Architect and Product Designer

A Definition

UNIVERSAL: applicable or common to all purposes, conditions, and situations

The intent of the universal design concept is to simplify life for everyone by making more housing usable by more people at little or no extra cost. Universal design is an approach to design that incorporates products as well as building features and elements which, to the greatest extent possible, can be used by everyone. While accessible or adaptable design requirements are specified by codes or standards for only *some* buildings and are aimed at benefiting only *some* people (those with mobility limitations), the universal design concept targets *all* people of *all* ages, sizes, and abilities and is applied to *all* buildings.

What is a universal feature? Any component of a house that can be used by everyone regardless of their level of ability or disability. Universal features are generally standard building products or features that have been placed differently, selected carefully, or omitted. For example, standard electrical receptacles can be placed higher than usual above the floor, standard but wider doors can be selected, and steps at entrances can be eliminated to make housing more universally usable. Examples of other universal features in housing are:

- handles for doors and drawers that require no gripping or twisting to operate—such as louver or loop handles;
- living space on one floor or stair landings big enough to accept lifts;
- audible and visual alarm systems
- storage space within reach of both short and tall people.

Some products and design elements are already universal. Others can be made so. Manufacturers and builders who use the universal design concept will design their products and buildings to be as usable as possible by a larger population including children, older people, and people with disabilities.



"The universal design concept considers those changes that are experienced by everyone as they grow from infancy to old age. Problems related to temporary or permanent disabilities are incorporated into the concept as well. Because all groups are placed within the context of normal expectations of the human condition, trying to justify the importance of each vulnerable population group becomes unnecessary."

Leon A. Pastalan, Ph.D.

Gerontologist and Urban Planner

"The
universal
design
concept
considers
those
changes
that are
experi-
enced by
everyone
as they
grow
from
infancy
to old
age."

UNIVERSAL DESIGN

The Rationale

Living spaces have long been designed for use by one “average” physical type – young, fit, male, and adult. The fact is that only some of us fit that description, and none of us can be described that way for a lifetime. As children, as older adults, or as physically disabled people, millions are never average. Many millions more, because of a broken limb, serious illness, or pregnancy, know how unsettling it is to try to function in an environment that no longer meets their needs.

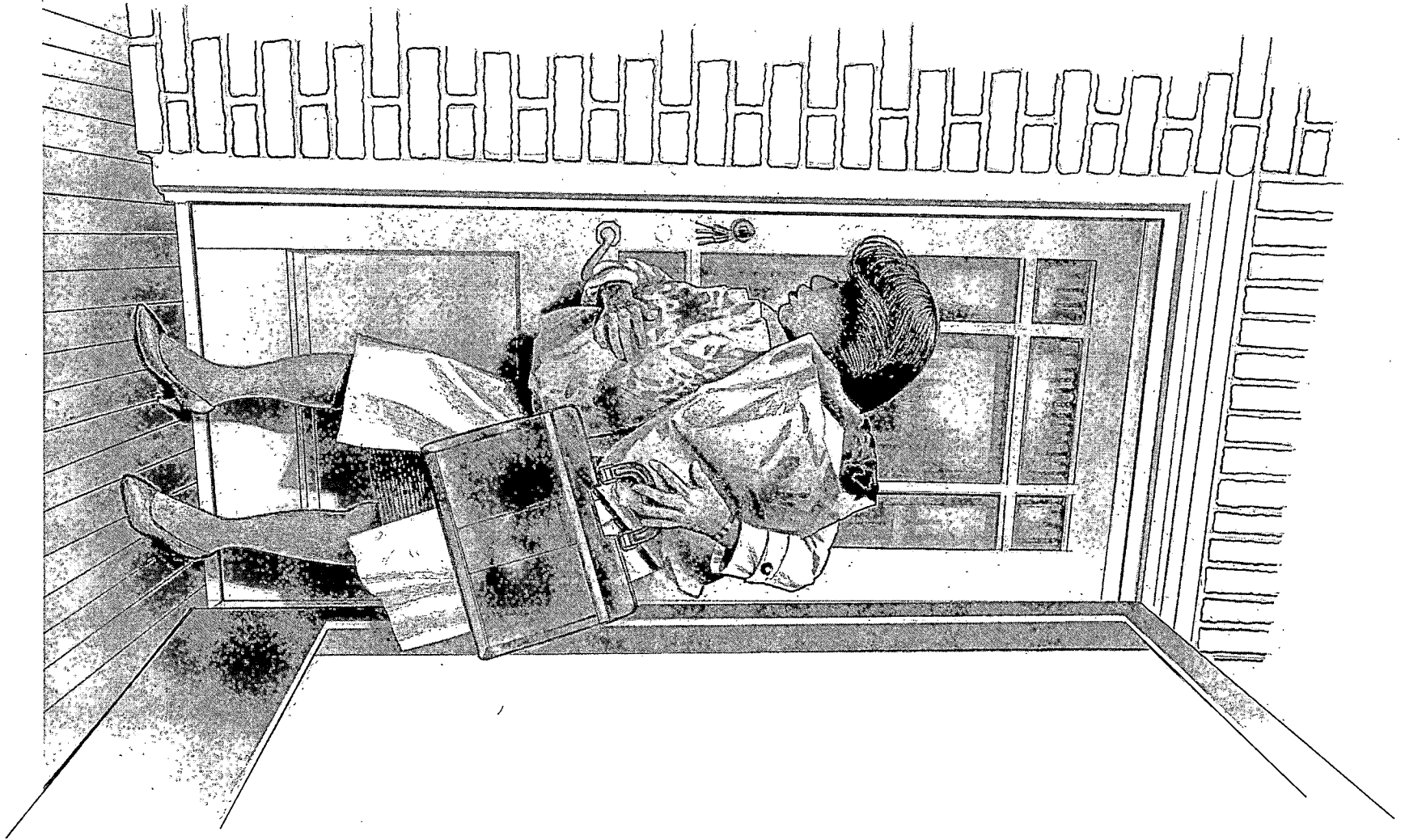
The point is, no “average” actually represents the majority because too many people have vastly differing requirements. The composition of our population is changing. Many people are surviving permanently disabling accidents and illness and even more are living longer. It would seem logical that the spaces built to accommodate this population must, by necessity, change also.

The building and design industries have responded to this need for change by producing special products and spaces for special groups. But “special” is often synonymous with “expensive”. Specialization leads to complicated building standards and products which, in the end, seldom meet the needs of more than a fraction of those they were meant to help and often seem to stigmatize and separate them further from other people.

Universal design succeeds because it goes beyond specialization. The concept promotes designing every product and building so that everyone can use them to the greatest extent possible – every faucet, light fixture, shower stall, public telephone, or entrance. Universal design is a revolutionary but practical leap forward in the evolution of building and design procedures. When designers and manufacturers seize this concept, universal design will become common, convenient, and profitable.



THE FRONT DOOR



T H E F R O N T D O O R

Invisible Solutions

A walk through a house with universally designed features shows that they are simple and often almost invisible.

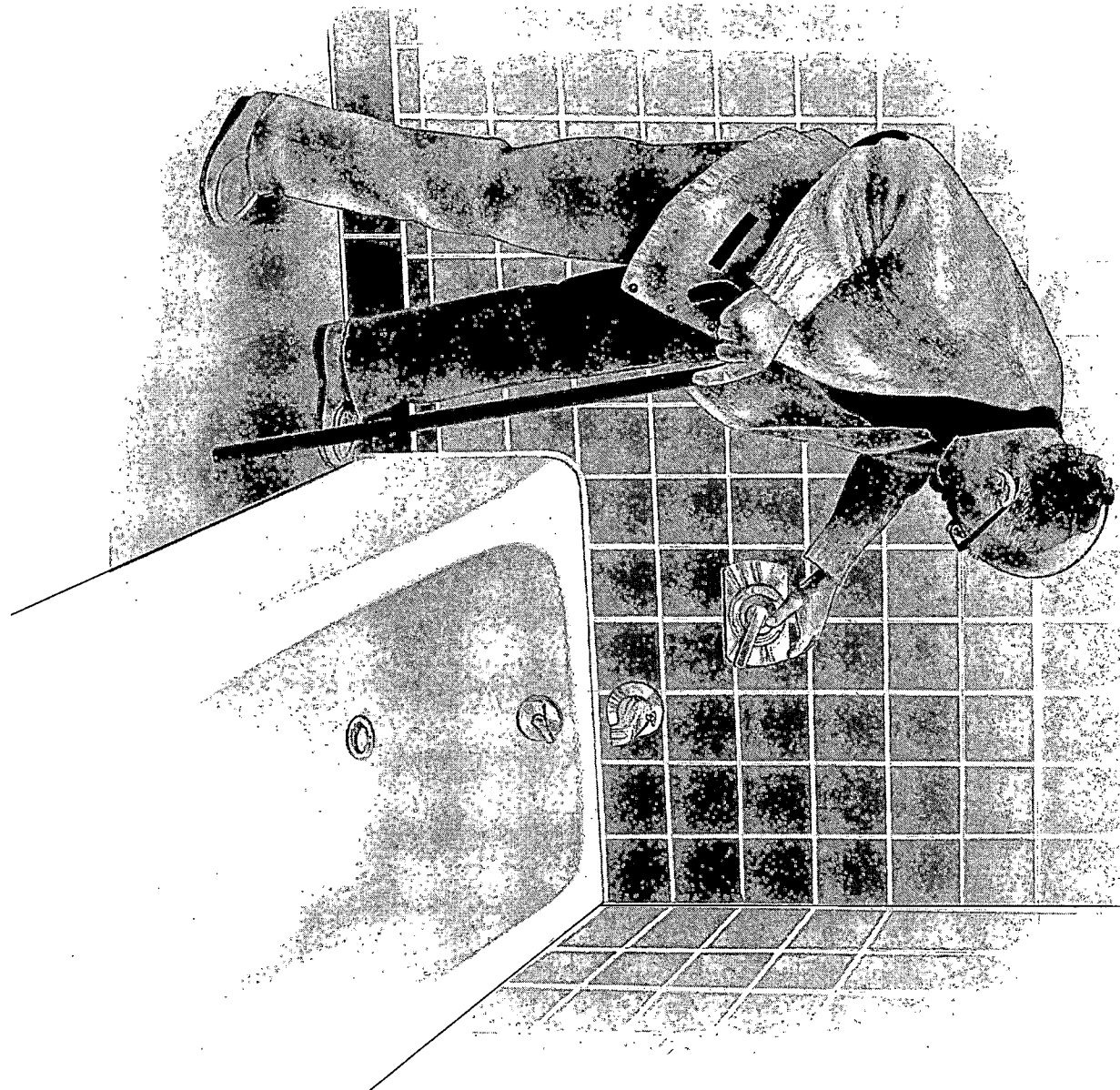
The front door to the house is made easier for everyone to open by one simple change – a lever handle in place of the traditional knob. This is appreciated by anyone returning home with hands and arms full of parcels, a briefcase, grocery bags, a baby and a diaper bag, or a cane. Small children can manipulate a lever more easily than a knob, as can those with arthritis or other physical disabilities that limit a full range of movement.

COST

While commonly available in Europe, lever handles were once used in this country as expensive hospital hardware to benefit busy people moving quickly from room to room with trays and medicines. Today, levers are popular and stylish. Available from local hardware stores and building supply houses in a variety of materials, colors, and prices, they can be used anywhere. For no additional cost, in new construction, lever handles with locksets and other safety features can replace less usable hardware of the same quality. In fact, an inexpensive non-locking lever hardware set for a passage door may cost as little as \$15.



THE BATHROOM



T H E B A T H R O O M

Invisible Solutions

The bathroom wall above the tub appears conventional, but it is actually reinforced with blocking. Built into the wall itself, blocking allows the wall to accept grab bars when, and if, they are needed by the residents.

The bathtub faucet is located close to the outside rim of the tub making it easy for everyone to reach. Wheel-chair users and other mobility impaired people need to have the controls in this offset position. Non-disabled people will discover that what is a necessity for some can be an added convenience for others.

The universally designed bathroom is slightly larger than a conventional bathroom to accommodate wheelchair users. The extra space allows more than one person to occupy the bathroom at the same time so that, for example, a parent can help a child brush his teeth, or provides space for furniture or additional storage.

COST

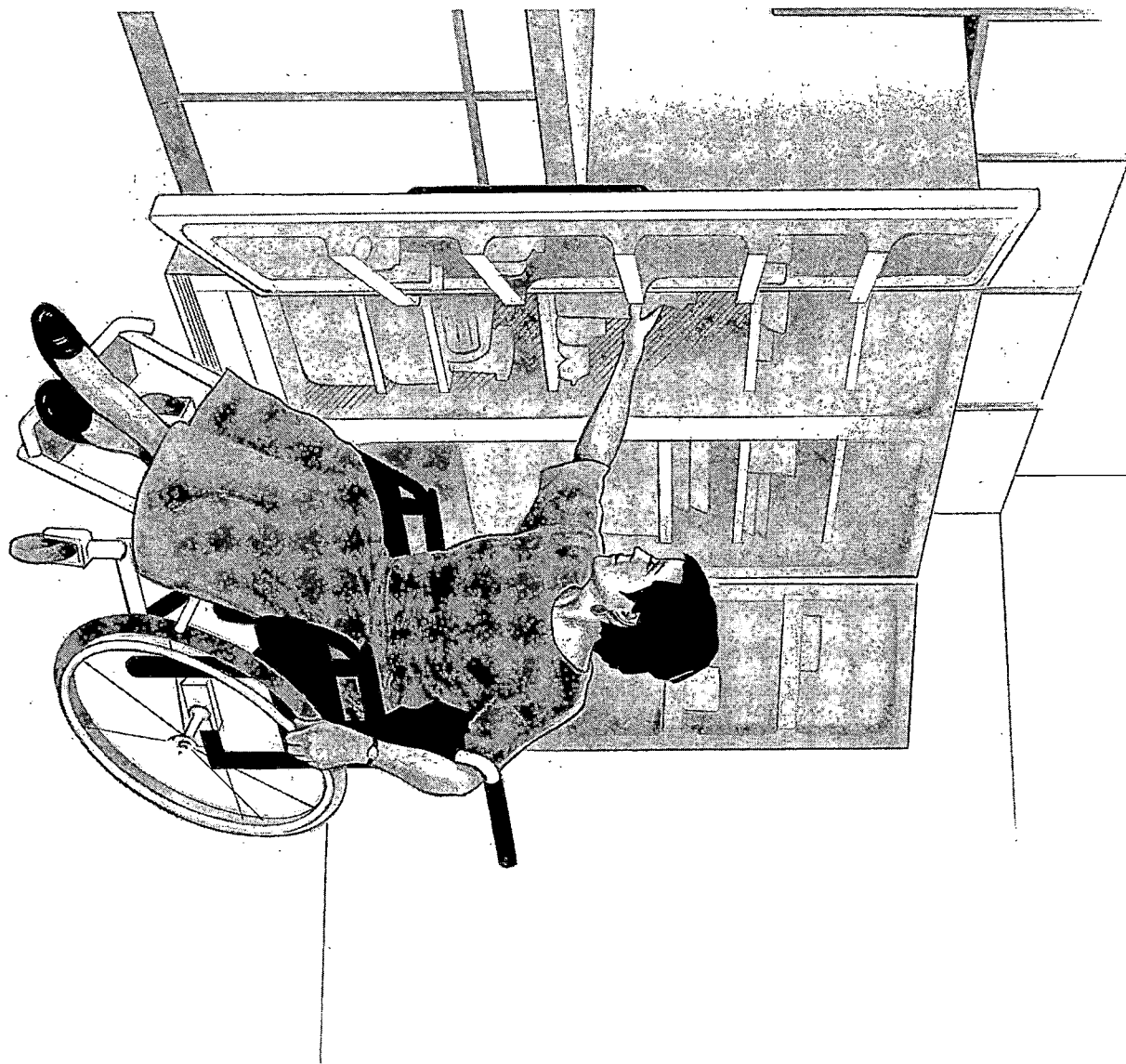
The offset tub control requires only about six inches of additional supply pipe. Since the additional cost of materials and labor should not be any more than \$5 to \$20 per tub, offset tub controls could easily become standard features in all housing.

The extra space in a larger bathroom need not increase the overall square footage of the house. The required inches can usually be "borrowed" from a closet or utility space. Although it is not always possible to increase the bathroom size without increasing the overall square footage, any additional cost could be balanced by the greater market for the universal home and its extended lifetime occupancy for older owners.

"The overwhelming preference of older persons is to age in place; that is, to remain in their homes as they grow older. It is essential that residences be designed to be safe, comfortable, and accommodating to persons of all ages but particularly to those who are faced with diminishing physical abilities which make daily domestic routines difficult to manage. Universal design is a concept that will enable older people to remain in their homes as they would wish."

Cyril F. Brickfield
Former Executive Director of AARP

THE KITCHEN



T H E K I T C H E N

Invisible Solutions

The kitchen has the usual appliances – oven, stove, and refrigerator. However, the refrigerator is a standard side-by-side refrigerator/freezer and the stove has front or side mounted controls; both can be used by a greater number of people. The advantage of the side-by-side refrigerator/freezer is that it places both the freezer and refrigerator compartments within reach of everyone, even children.

The cabinets also look and function like conventional cabinets. The difference is that the counters can be adjusted to any level to suit users of different heights.

COST

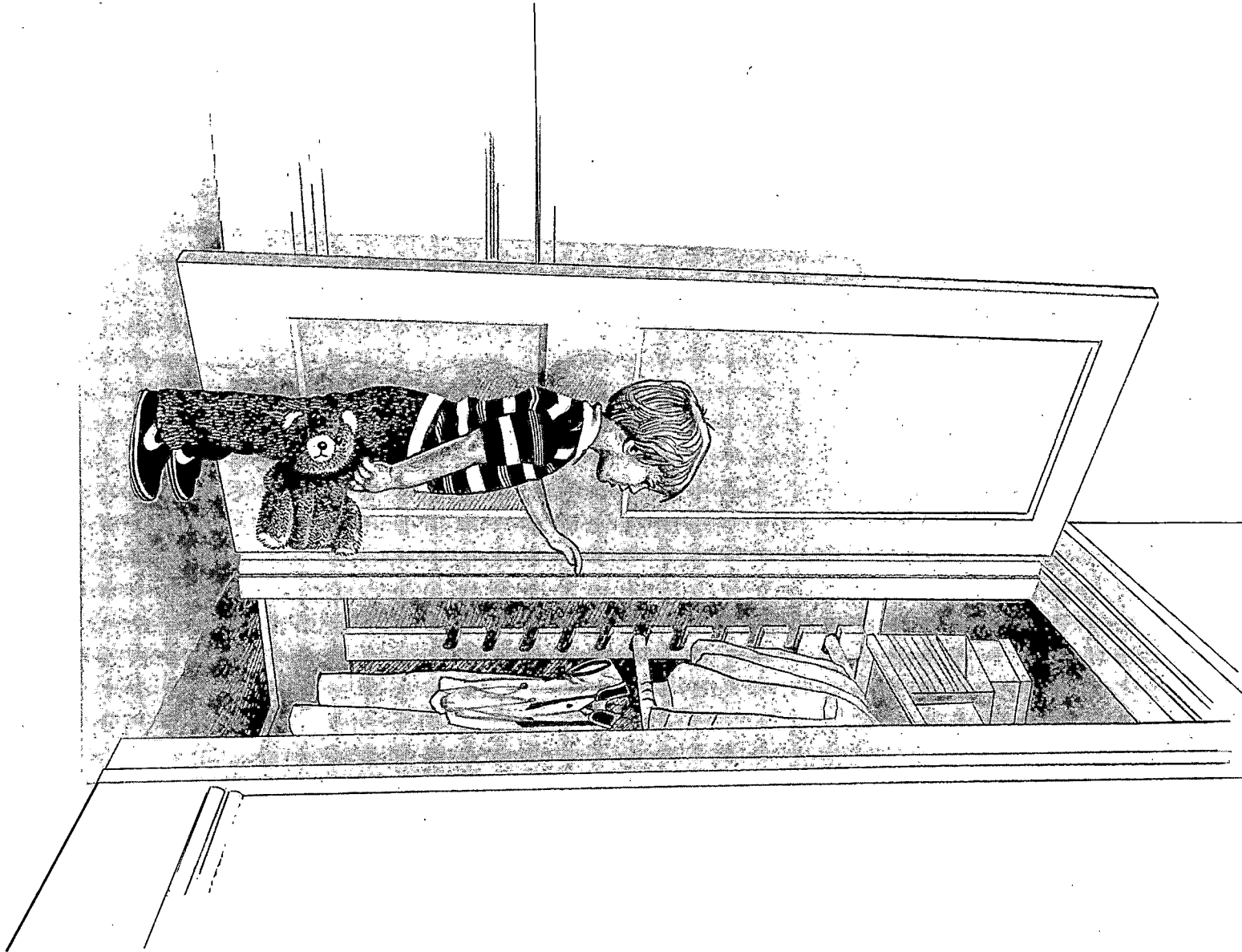
Although more expensive than other models, the side-by-side refrigerator/freezer is a universally usable product that is already on the market. A medium priced side-by-side refrigerator/freezer will cost approximately \$150 more than a medium priced over-under refrigerator/freezer*. For those who can afford it, the side-by-side expands the universality of a home which already has other universal features that are no-cost or low-cost.

Adjustable height counters could become a universal feature. While in most states they are only required in accessible housing for disabled people, New York and California have incorporated them as adaptable features in multi-family housing. Although innovative, low-technology approaches exist for providing adjustable height counters, no manufacturer has yet mass produced them. The manufacturer who chooses to do so could reduce the cost of the counters, and find a growing and profitable market for this product.

*Prices will vary regionally. The price quoted here is valid only in the southeastern United States.



THE BEDROOM



T H E B E D R O O M

Invisible Solutions

The bedroom clothes closet rods appear to be standard. The difference is in the way rods are mounted. Notched mounting blocks on either wall allow the rods to be lowered or raised to accommodate people of all heights and ages. Children's closets can "grow" with them. People temporarily restricted to wheelchairs can lower rods to be within their reach.

A wider passageway door leading from the hallway to the bedroom is another universal feature that is invisible until furniture movers or wheelchair users discover its advantage.

COST

The adjustable closet rod detail may cost the price of two pieces of 1" x 4" and the time it would take a carpenter to cut the notches in each. If individually custom made by a competent carpenter, they should cost no more than \$20 to \$30 a pair, much less if mass produced. Manufactured and sold through building suppliers these brackets and rods would cost no more than fixed hardware and could be a profitable item to the manufacturer. Clearly, this universal feature could be made standard in all housing.

Wider doors do not increase construction costs because the extra cost of the wider door is offset by the higher cost of the wall area it replaces. Introducing the one-size door by making 2'-10" wide passage doors standard also eliminates the additional costs of planning, ordering, stocking, and coordinating numerous door sizes for every job.



UNIVERSAL DESIGN

A Low-cost Solution

Many universal features are no-cost options. Others are low-cost solutions that can become no-cost with widespread use. In our society, mass production is used to keep costs low and to produce products that are widely marketable. Because universally designed products make as little as possible "special", make as much as possible "standard", mass producing design that is both usable and attractive to everyone can become a practical reality.

"Today's architects address the life cycle of buildings.

It is time that they began to address the life cycle of people as well. Universal design is considerate of the human lifespan and the continuum of abilities of all individuals."

Ruth Hall Lusher, D. Arch. Candidate

"Specifying different features for different groups of people will always cost more and require massive coordination and selective judgment about who should be accommodated and where. All of these impossible issues are eliminated by the universal design concept."

Edward Steinfeld, D. Arch.
Architect and Gerontologist

UNIVERSAL DESIGN

UNIVERSAL DESIGN

Universal design benefits the public and the entire building industry. For builders, the benefits are less construction coordination, lower costs, and manufactured rather than custom-built features; for designers, less design time, fewer compliance and liability problems, and features that can become standardized. For manufacturers and suppliers, the advantages are larger volumes of fewer products. For building owners, the benefits are rentable units that are attractive to everyone. Finally, the advantage to the consumer is comfortable surroundings that suit a lifetime of changing needs.

Statistics derived from such benefit programs as social security, disability payments, and Medicaid suggest a disabled population of 46 million. Since most affluent disabled people are not listed on the rolls of government programs, many industry people place this number much higher. For example, the manufacturers of support devices and medical equipment estimate that there are 80 million disabled people. Researchers in the disability field include the families and friends of disabled and elderly people among those who benefit from accessibility (and therefore universal design) and arrive at a figure just over 100 million people involved in, or directly affected by, disability issues.

No matter which figure is used, it is clear there is a growing market for universal design in housing and an increasing body of how-to-do-it information. The simplicity of the concept, the subtle, non-obtrusive, almost invisible features required, and the potential profits are generating opportunities for creative innovation among those who produce and market housing.

For more information, contact the people and organizations listed on the back of this brochure.

Include universal features in your home for easier living throughout your lifetime. Include universal design features in speculative housing for increased profits, expanded markets, and better housing for all.



Originally printed in 1988 by the U.S.
Department of Housing and Urban Affairs
Office of Public Affairs
Publication HUD-1156-PA

Reprinted in 1994 by the Center for Accessible
Housing, North Carolina State University, Box 8613,
Raleigh, North Carolina 27695-8613 with updates
only to the resources listed below.

Adaptive Environments Center

374 Congress Street, Suite 301
Boston, MA 02210
617-695-1225 (V/TT)
Elaine Ostroff

**American Association of
Retired Persons**

601 E Street, N.W.
Washington, DC 20049
Katrinka Smith Sloan

U.S. Department of Justice

Public Access Section
Civil Rights Division
P.O. Box 66738
202-307-0819
Ruth Hall Lusher

Barrier Free Environments, Inc.

P.O. Box 30632
Raleigh, NC 27622
and

The Center for Universal Design

North Carolina State University
Box 8613
Raleigh, NC 27695-8613
800-647-6777
Ronald Mace, FAIA

HUD User

P.O. Box 6091
Rockville, MD 20850
1-800-245-2691

**U.S. Department of Housing
and Urban Development**

Office of Fair Housing
Office of Policy Development and Research
Washington, DC 20410
Alan Rothman, Cheryl Kent

J.L. Mueller, Inc.

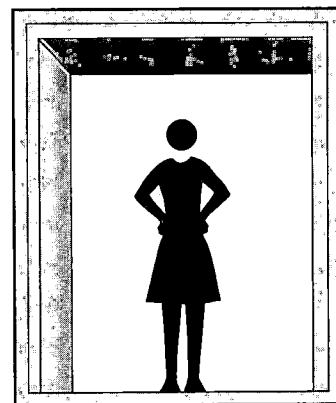
4717 Walney Knoll Court
Chantilly, VA 22301-2301
703-549-2466
Jim Mueller

University of Michigan

2224 Art & Architecture Building
2000 Bonistreel Avenue
Ann Arbor, MI 48109-2069
313-763-1275

**State University of New
York at Buffalo**

Department of Architecture
112 Hayes Hall
Buffalo, NY 14214
716-829-3483
Ed Steinfeld, D. Arch.



A Blueprint for ACTION

A Resource for
Promoting Home Modifications



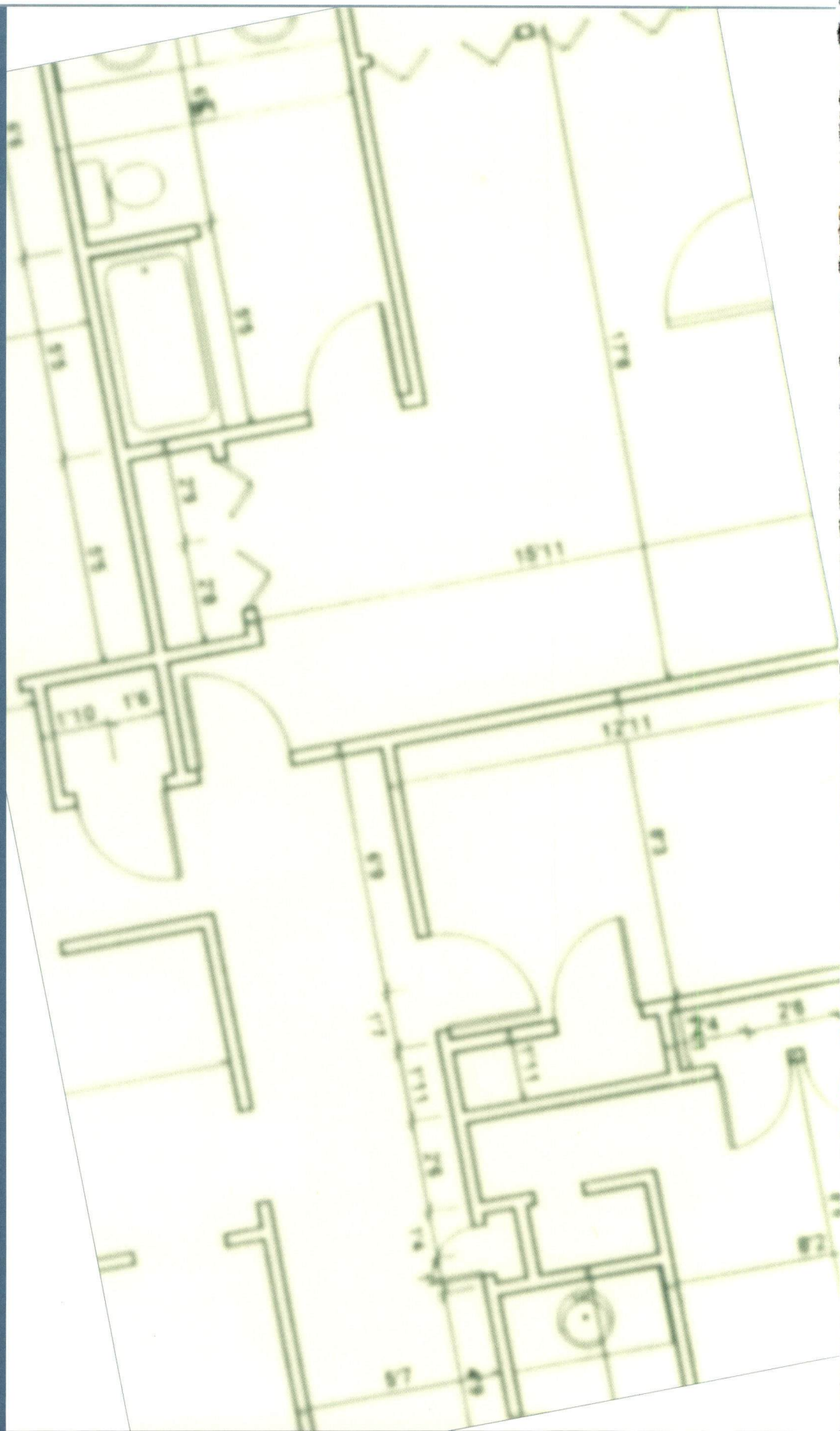
Developed
by The
National Home
Modifications
Action Coalition

August 1997



The authors of this report are grateful for the participation and guidance of The National Home Modifications Action Coalition Steering Committee. The authors have neither sought nor received endorsement from individual members of the committee, their agencies, or organizations.

This is a publication of The Center for Universal Design which is primarily funded by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education under grant number H133E40003. The opinions contained in this publication are those of the authors and contributors and do not necessarily reflect those of the U.S. Department of Education.



A Blueprint for Action

A Resource for Promoting Home Modifications

This report was compiled by:

The Center for Universal Design

School of Design

North Carolina State University

Box 8613

Raleigh, NC 27695-8613

(919) 515-3082

<http://www2.ncsu.edu/ncsu/design/cud>

© 1997, North Carolina State University
The Center for Universal Design

National Home Modifications Action

Bill Carmichael

National Association of the Remodeling Industry

Carol Cohen

National Institute on
Disability and Rehabilitation Research

Richard Duncan

The Center for Universal Design

Jane Gay

Iowa Assistive Technology Project

Jim Geletka

RESNA

Deborah Greenstein

United States Department of
Housing and Urban Development

Leon Harper

American Association of Retired Persons

Susan Klein

Philadelphia Corporation for Aging, Inc.

Bill Mitchell

Bill Mitchell Associates

Coalition Steering Committee

Anne Morris

American Occupational Therapy Association

Elaine Ostroff

Adaptive Environments Center

Julie Overton

University of Southern California

Andrus Gerontology Center

Mary Jo Peterson

National Kitchen and Bath Association

Jon Pynoos

University of Southern California

Andrus Gerontology Center

Carol Schaake

National Association of Home Builders

Diane Sprague

Minnesota Housing Finance Agency

Ed Steinfeld

State University of New York, Buffalo

Irma Tetzloff

Administration on Aging

The vision and efforts of several people need to be specially noted. Elaine Ostroff of the Adaptive Environments Center and Mike Jones of The Shepherd Center created and supported the First National Conference on Home Modifications Policy and the National Home Modifications Policy Task Force, the predecessor to the National Home Modifications Action Coalition Steering Committee. Katie Smith Sloan and Leon Harper at The American Association of Retired Persons contributed enormous personal resources and lent the immense organizational and personnel resources of AARP to sustain the Task Force and to produce the Second Conference. Julie Overton and Jon Pynoos of the Andrus Gerontology Center played a crucial role in crafting the Second Conference agenda, stimulating the creation of the papers, and helping this report become a reality.

acknowledgments

Primary support provided by:

National Institute on
Disability and Rehabilitation Research

U.S. Department of Housing and Urban Development

Lowe's Home Safety Council

Administration on Aging,
U.S. Department of Health and Human Services



GE Appliances

Additional support provided by:



The Home Depot

North Carolina Assistive Technology Project



KraftMaid Cabinetry, Inc.

Design by: Hilda Dawson, Stillpath Design Inc.

acknowledgments

PROJECT COORDINATION

Richard Duncan
The Center for Universal Design

Leon Harper
American Association of Retired Persons

Julie Overton
University of Southern California,
Andrus Gerontology Center

Jon Pynoos
University of Southern California,
Andrus Gerontology Center

The Center for Universal Design
Bobby Rock
Cheryl McConnell

Andrus Gerontology Center
Maria Henke
Hannah Knapp

PAPER AUTHORS

Consumer Knowledge

Margaret Wylde
ProMatura Group

Service Delivery

Jon Pynoos, Melissa Tabarrach,
Marian DeMeire, Joe Angelli
University of Southern California
Andrus Gerontology Center

Funding

Richard Duncan
The Center for Universal Design

Systems Change

Jane Gay
Iowa Program on Assistive Technology

PAPER REVIEWERS

Bettye Rose Connell
The Center for Universal Design

Laura Gitlin
Thomas Jefferson University

Lee Norgard
American Association of Retired Persons

Elaine Ostroff
Adaptive Environments Center

Katie Smith Sloan
American Association of Retired Persons

Lisa Sloane
Sloane Associates

The papers are available from:

National Resource and Policy Center on
Housing and Long Term Care
University of Southern California
Andrus Gerontology Center
Los Angeles, CA 90089-0191
Phone: 213-740-1364
<http://www.usc.edu/go/hmap>

acknowledgments

A BLUEPRINT FOR ACTION REVIEWERS

Jane Gay

Iowa Program on Assistive Technology

Deborah Greenstein

U.S. Department of Housing and Urban Development

Julie Overton

University of Southern California

Andrus Gerontology Center

Jon Pynoos

University of Southern California

Andrus Gerontology Center

Larry Trachtman

The Center for Universal Design

A Blueprint for Action is available from:

The Center for Universal Design

School of Design

North Carolina State University

Box 8613

Raleigh, NC 27695-8613

Phone: 800-647-6777

Cost: \$7.50

HUD USER

P.O. Box 6091

Rockville, MD 20850

Phone: 800-245-2691

Table of Contents

EXECUTIVE SUMMARY	ix
INTRODUCTION	i
 IMPORTANCE OF HOME MODIFICATIONS	 7
The Status of Home Modifications	7
The Need for Home Modifications	8
Supply	9
Demand	10
 KEY ISSUES	 13
Consumer Knowledge	13
Funding/Resources	16
Service Delivery	18
 SYSTEMS CHANGE ACTION PLAN	 21
Leadership and Coalition Building	21
Research	24
Education	25
Funding	28
Service Delivery	31
 APPENDICES:	 35
A. Information Resources	37
B. Summary of Home Modifications	43
C. <i>A Blueprint for Action: Conference Overview</i>	45
D. <i>A Blueprint for Action: Conference Participants</i>	47

A Blueprint for Action

EXECUTIVE SUMMARY

Our society's changing demographics include the aging of our population and a greater number of persons with disabling conditions. As a result, many people experience obstacles in their homes that are inconvenient, limiting, and dangerous. They are beginning to realize that their homes can better support their needs through home modifications; that they can remain in their homes and neighborhoods rather than move to more institutional settings.

The number and types of individuals who need home modifications will grow dramatically over the next 20 years—families with children with disabilities, adults with disabilities, middle-aged couples planning for the future, families who accept aging parents into their homes, and an increasingly older population aging in place. All are seeking homes that are attractive and offer them convenience, safety, ease-of-use, continued independence, and retained value.

The ability to meet this growing need for home modifications is hampered by lack of information, limited funding, and inadequate services. Because these barriers are interlinked, a complex scenario evolves that negatively affects the availability of home modifications.

In response to these issues, The Center for Universal Design convened the "First National Conference on Home Modification Policy" in November 1993. This conference addressed the growing gap between the need and available assistance for home accessibility. The confer-

"Too often older or disabled people live limited lives or give up their homes and neighborhoods prematurely because standard housing of the past cannot meet their needs."

—Ronald L. Mace, FAIA,
Architect and Product Designer,
The Center for Universal Design

ence brought together policy makers, professionals, and consumers with a common interest in bridging this gap. The conference resulted in a commitment to continue exchanges among the participants and work toward a national agenda for increasing the availability and funding for home modification services.

A second national conference, "A Blueprint for Action: The Second National Working Conference on Home Modifications Policy," took place on April 22-23, 1996 in Washington

D.C. Over 60 of the nation's leading experts in disability, aging, housing finance, remodeling, design and construction, community development, and long term care participated. Planned by the National Home Modifications Action Coalition, this conference provided the opportunity to develop home modification agendas at community, state, and national levels. Participants shared service delivery strategies and models that have proven successful in diverse communities.

The conference was organized around four key themes—Consumer Knowledge, Funding, Service Delivery, and Systems Change. This report, *A Blueprint for Action*, was developed from the background papers written on the four themes, discussions, and working groups at this second conference. Portions of the papers are excerpted. This report includes a discussion of barriers and recommendations for national, state, and community change. Its use is intended to increase the availability and affordability

of home modifications for individuals of all ages. *A Blueprint for Action* reflects the diverse perspectives and approaches of the many experts who have contributed to the conference and the papers. Most importantly, *A Blueprint for Action* is an action plan for promoting home modifications through coalition building and sustained and coordinated activities.

RECOMMENDATIONS

The major recommendations fall into five areas. Initiatives can be established at the national, state, and community levels.

I. Leadership and Coalition Building

Forming a national, state, or local coalition with specific goals and objectives is an effective way to promote the availability of home modifications.

A critical first step is the presence of an organization(s) willing to lead a coalition whose priority is increasing the availability of home modifications.

A small working group should be formed that can share leadership and costs and give credibility to the coalition.

This leadership group should conduct research and draft a status report of needs and barriers to home modifications in the geographic area.

Finally, an action plan that includes both a 5- to 10-year time frame and shorter term objectives should be developed.

II. Research

Coalitions should assess needs, determine the status of services and resources, and demonstrate effective-

ness of home modifications. Results of this research should be brought to policy makers and program developers to shape future legislation, regulations, and certification rules.

Research should identify:

- ♦ Consumer characteristics and needs
- ♦ Resource gaps
- ♦ Level of consumer knowledge
- ♦ Remodeler, health, or social service worker expertise
- ♦ Awareness on the part of elected officials
- ♦ Level of inter-agency coordination

Research should indicate the best methods of service delivery. Evaluation studies can detail how home modifications are cost effective and how they positively affect quality. The added value of universal design needs to be demonstrated if remodelers and consumers are to get more involved in increasing home modifications.



III. Education

Education, marketing, and promotional efforts should:

- ♦ Stimulate educated consumers to demand quality products and home modifications;
- ♦ Allow remodelers, program staff, medical personnel, and aging advocates to provide effective advice and services; and
- ♦ Inform policymakers such as funders, program managers, lenders, medical insurers, and legislators about the need, broad constituency, and the cost effectiveness of home modifications.

Information and referral centers should be established as central places for consumers, service providers, and policymakers to get timely research and home modifications information. These centers should:

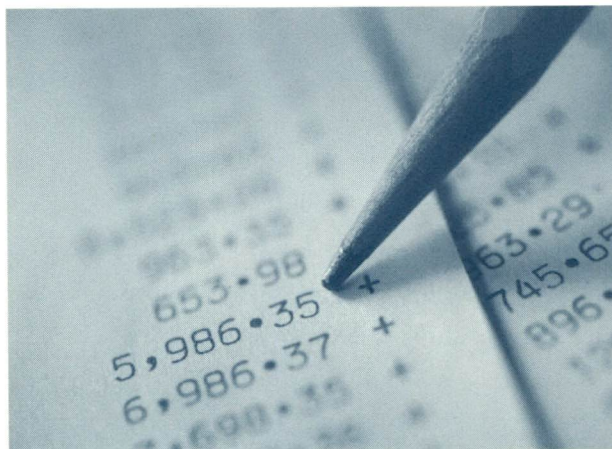
- ♦ Publish an annually-updated funding, finance, resource, and organization directory for both professionals and consumers;
- ♦ Establish a toll-free information and referral service;
- ♦ Establish housing design awards programs, linked with industry awards, and document and publicize notable success stories; and
- ♦ Develop Internet websites to disseminate information.

High impact training programs and materials should be developed to cross-train social service, health care, and building professionals, as well as consumers. These training programs can help professions adopt continuing education requirements in home modifications and universal design.

IV. Funding

Funding and financing efforts should focus on developing new sources and reshaping and fully accessing existing sources.

Representatives from funding and financing agencies and organizations should be part of the coalition, such as banks, housing finance agencies, and public and private medical insurers.



Coalitions should encourage health care payers, including Medicare, to continue paying for existing equipment and assistive devices and cover additional home modifications that help prevent accidents or forestall institutionalization. Existing expenditure caps and restrictions in the Medicaid Waiver program should be lifted.

Coalitions should advocate for private insurers to allow medical insurance payments or reimbursements for home modifications. Research data should be collected to determine cost effectiveness.

State housing agencies should add accessibility as a contributing feature to the application criteria of competitive funding programs. This will encourage communities who wish to access block grant funds from the U.S. Department of Housing and Urban Development or the U.S.

Department of Health and Human Services to add modification features to their programs.

Members of the Federal Home Loan Bank (which includes most commercial banks, Savings and Loans, and others) should partner with non-profits to obtain funding for special financing for accessible housing projects.

The Community Reinvestment Act (CRA) requires most banks to make loans to underserved members of their community which can include persons in need of home modifications. Organizational rather than individual approaches to banks can help take advantage of the CRA.

Housing Finance Agencies may be in a good position to promote home modification programs for low- and moderate-income households. The number and variety of their possible funding sources and the flexibility in their use holds great promise.

Coalitions should guard against over reliance on federal funds. As needs grow, additional funding streams from states' general revenues should be tapped. A few states, notably Massachusetts and Kansas, currently have pending legislation to promote home modifications through state tax allocations and tax incentives.

Approach organizations such as Habitat for Humanity and Christmas in April chapters to have them add home modifications to their activities.

Create Community Housing Development Organizations (CHDO) with a home modification/home repair focus. The CHDO can seek funding from a variety of sources including designated HOME funds from the U.S. Department of Housing and Urban Development.

V. Service Delivery

Service delivery efforts should concentrate on developing practitioner expertise by promoting uniform and accurate assessments and producing successful home modification projects that demonstrate quality and efficacy.

Coalitions should target and educate health care professionals (e.g., physicians, nurses, hospital discharge planners, home health workers), social service personnel (e.g., case managers), and workers in the building industry (e.g., remodelers) to become more aware of how to assess problems environments present for their clients.

Consumers, remodelers, medical staff, and professionals in the housing sector need to be convinced that modifications can add and retain value to homes and reduce the need for future remodeling. Successful models illustrating best practices make it easier for other programs to avoid pitfalls and develop more rapidly. If cost-effectiveness can be proven, health plans would be encouraged to form contractual alliances with product suppliers and home modification service programs, potentially leading to reduced prices for adaptations.

Both challenges and possibilities lie ahead for home modifications. The National Home Modifications Action Coalition has developed *A Blueprint for Action* to stimulate the thinking and activities of professionals and organizations to take action; to increase the availability and affordability of home modifications for individuals of all ages.

INTRODUCTION

Our society's changing demographics include the aging of our population and an increase in the number of persons with disabling conditions. As a result, many people experience obstacles in their homes that are inconvenient, limiting, and dangerous. They are beginning to realize that their homes can better support their needs through home modifications; that they can remain in their homes and neighborhoods rather than move to more institutional settings. While most people can benefit from small scale modifications, the range of changes is broad—from simple assistive technology to home additions. Inexpensive devices include door hardware, hand held showers, added lighting, hand rails, and grab bars. Ramps, powered lifts, and remodeled bathrooms and kitchens are more expensive and complicated projects.

The number and types of individuals who need home modifications will grow dramatically over the next 20 years; families with children with disabilities, adults with disabilities, middle-aged couples planning for the future, families who accept aging parents into their homes, and an increasingly older population aging in place. All are seeking homes that are attractive and that offer them convenience, safety, ease-of-use, continued independence, and retained value.

BARRIERS TO HOME MODIFICATIONS

The ability to meet this growing need for home modifications is hampered by several barriers: lack of information, limited funding, and inadequate services.

The number and types of individuals who need home modifications will grow dramatically over the next 20 years.

Lack of Information

Many households can benefit from home modifications that improve safety and accessibility. However, many consumers don't seek help because they have a limited awareness of the benefits of home modifications and a lack of understanding of the low cost of most modifications. Some households also

perceive a stigma associated with disability "accommodations." Consumers are not yet demanding modifications in sufficient numbers to command the attention of policymakers, manufacturers, retailers, and remodelers.



Limited Funding

The many resources for home modifications are hard to locate, limited, and increasingly threatened. There is especially limited funding to provide assistance to low-income households, which have a disproportionately high level of need for modifications. The situation has become more complex with changes in the federal government's role. Over the past 30 years, the federal government has aided home modifications with programs in seven cabinet-level federal departments. While many see the value in modifications, federal dollars continue to shrink. The changing scene is demonstrated by

HUD's Reinvention, announced in 1995. It offers both hope and concern. This plan for change, *HUD Reinvention: From Blueprint to Action*, reveals a commitment to low- and moderate-income families, choice for households, community discretion, community participation, compliance with fair housing laws, and program consolidation. With the best of intentions, but against a background of shrinking allocations, consolidated programs will result in tougher competition for scarce funds within HUD. Federal funding for home modifications is likely to diminish further and block grants will make state level decision-making more crucial.

Inadequate Services

In most communities, coordination of home modification services is limited or nonexistent even among professionals who are aware of the need for assistance: health care, rehabilitation, housing, and social service professionals. There is no effective service delivery system to connect those who need home modifications with experienced remodeling and other professionals who can make adaptations. Fortunately, more non-profit and for-profit providers are gaining experience as training and service delivery models emerge.

These three major issues are linked; limited information contributes to a lack of consumer demand; limited demand for home modification services results in few experienced providers and remodelers; inexperienced providers and

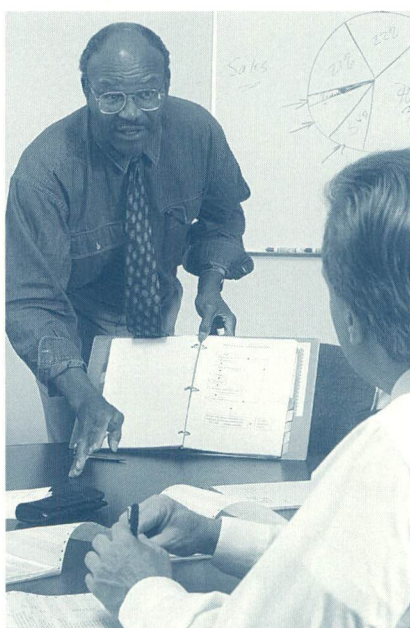
remodelers produce poorly crafted, ill-suited modifications; small, scattered, little known, and underutilized funding sources produce a patchwork of public service programs and make it hard for low-income households to undertake projects. Consumers are often frustrated by the process of obtaining and making home modifications and discouraged by the results.

THE RESPONSE

In response to these issues, The Center for Universal Design (formerly the Center for Accessible Housing) convened the *First National Conference on Home Modification Policy* in November 1993. Funded by the North Carolina

Assistive Technology Project and the National Institute on Disability and Rehabilitation Research, this conference addressed the growing gap between the need and available assistance for home accessibility. The conference brought together policy makers, professionals, and consumers with a common interest in bridging this gap. The conference resulted in a commitment to continue exchanges among the participants and work toward a national agenda for increasing the availability and funding for home modification services.

The Second National Conference, planned by the National Home Modifications Action Coalition, took place on April 22-23, 1996, at the Georgetown University Conference Center in Washington, D.C. The conference had public and private sponsorship which included the National Institute on Disability and



Rehabilitation Research, the U. S. Department of Housing and Urban Development, Lowe's Home Safety Council, the Administration on Aging, the U.S. Department of Health and Human Services, and GE Appliances. Additional support was provided by The Home Depot, the North Carolina Assistive Technology Project, and KraftMaid Cabinetry, Inc. This conference was an opportunity to develop an action plan whereby community, state, and national organizations could:

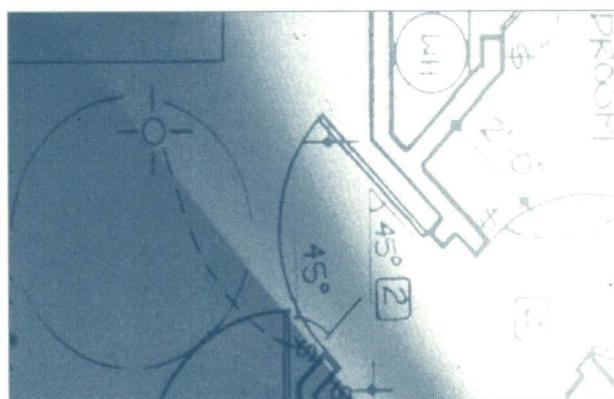
- ♦ create and coordinate service delivery systems,
- ♦ increase the availability of home modifications to all who need them, and
- ♦ document the impact of home modification assistance on improved safety and independence in the home.

The two-day working conference, *A Blueprint for Action: The Second National Working Conference on Home Modifications Policy*, brought together over 60 of the nation's leading experts in disability, aging, housing finance, remodeling, design and construction, community development, and long term care. Participants shared service delivery strategies and models that have proven successful in diverse communities.

The conference began with opening remarks by William Benson, Deputy Assistant Secretary for the Administration on Aging (AoA), U.S. Department of Health and Human Services, who emphasized the needs of the large and growing number of people who can benefit from home modifications. He acknowledged the important contribution of home modifications in maintaining independence as a part of a community-based care system. He reminded participants that AoA continues its 15-year commitment to this issue and congratulated everyone for work-

ing on this important topic.

The conference was organized around four key themes—Consumer Knowledge, Funding, Service Delivery, and Systems Change. Panels on these topics were formed around paper presentations developed for the conference. Working groups convened to address the issues raised in



the papers and during the panel discussions.

A Blueprint for Action was developed from the major paper topics, discussions and working groups at this second conference. Portions of the papers are excerpted. This report includes a discussion of barriers and recommendations for change at the national, state, and community levels. It reflects the diverse perspectives and approaches of the many experts who contributed to the conference and the papers. Most importantly, *A Blueprint for Action* is an action plan for promoting home modifications through coalition building, and sustained and coordinated activities.

PURPOSE OF A BLUEPRINT FOR ACTION

A Blueprint for Action is intended to stimulate productive and coordinated efforts to promote home modifications. It is an educational tool designed to increase awareness of the need for and the benefits of home modifications, to pro-



vide an incentive for groups to take action, and to stimulate the creation and utilization of resources. This report will help community, state, and national organizations develop and coordinate home modification service delivery systems that will increase the availability and quality of home modifications. *A Blueprint for Action* is designed to be used in a variety of settings, including public agencies, businesses, non-profit groups, associations, and other coalitions.

Goals

A Blueprint for Action has two goals:

- ♦ Catalyze leadership on the national, state, and community levels.

Organizations need to make a long-term commitment to home modifications as a priority issue.

- ♦ Promote effective public and private collaborations between national, state, and community stakeholders.

Because home modifications are needed by households of all income levels, public and private collaborations will ensure adequate funding and broad targeting of efforts.

Objectives

A Blueprint for Action is intended to:

1. Increase awareness of the need for and benefits of home modifications.

Promotional efforts begin with demographic information and include the individual and societal benefits of home modifications.

2. Establish working collaborations between public, non-profit, and industry organizations, including the disability community, the aging network, housing advocates, and the medical industry.

The consumer and practitioner constituencies for home modifications are broad. Effective programs need to include these diverse groups and organizations if they are to be successful.

3. Increase consumer knowledge and demand for quality services and products.

The acknowledged large need for modifications can be converted into productive action if consumers know about the benefits and low cost of modifications and products, and if they know about financing sources, product retailers, and experienced remodelers and installers.

4. Increase expertise within the service delivery system.

Practitioners working in all related professions and trades need information and training in assessments, needs, design, and product availability.

5. Increase the quantity and quality of home modifications.

More public programs and private sector

remodelers need to focus on home modifications using trained staff. All need to know of other practitioners for improved referrals.

6. Strengthen the delivery of home support services as a complement to home modifications.

Awareness of the role of home modifications in a comprehensive approach to maintaining independence will lead to better service referrals and more efficient use of funds.

7. Increase awareness and availability of funding and financing sources.

Public housing and medical funders as well as private funding sources need to maintain and expand home modification

and repair opportunities for low- and moderate-income households. Innovative collaborations need to be created that demonstrate new affordable financing mechanisms.

The conference made it clear that individuals and organizations operating at national, state, or local levels, in the public or private sector alike, can adopt a portion of the home modifications agenda that is now outlined in *A Blueprint for Action*. The opportunities are numerous. *A Blueprint for Action* can be used by organizations to develop action agendas, to stimulate additional meetings or conferences, and to create local or state level working groups to promote home modifications. Other possibilities include the following:



- ♦ Service providers can target funds for home modifications and related community services.
- ♦ Researchers can collect outcomes data, survey consumer preferences, or review service delivery quality.
- ♦ Remodelers can gather information about home modifications and work with independent living centers or senior centers to market their services to those in most need.
- ♦ Information dissemination specialists can add home modifications referral information and link up with other home modifications information services.
- ♦ Training professionals can use research data to develop materials and programs for all stakeholder groups.
- ♦ Manufacturers and retailers can integrate universal features and services into their products and displays and conduct market research to alter marketing strategies.

These groups and others can find a place to start or continue in *A Blueprint for Action*.

IMPORTANCE OF HOME MODIFICATIONS

THE STATUS OF HOME MODIFICATIONS

Modifying existing homes, building new universally designed homes, producing more usable products, and providing a variety of home-directed services all enhance our

ability to live and remain in our homes as long as possible. Until our supply of universally designed homes increases, home modifications will occupy a unique position in the above mix of approaches for the next 50 years or more.

The number of people who can benefit from home modifications grows annually and is not expected to peak until the mid-21st Century. As of 1992, there were more people over the age of 65 than under the age of 25 for the first time in our nation's history (Pirkl, 1992). By the year 2000, fully one-third of the country's population will be either disabled, chronically ill, or over 65 years old (Mueller, 1990). There is ample evidence of the current and growing need for accessible and adaptable housing that includes on-grade entrances, wider doorways and hallways, bathrooms with maneuvering room and blocking in the walls for grab bars, and kitchens with maneuvering room and multiple work surface heights. However, neither housing regulations nor market demand are creating many newly-built accessible or universally designed residential

**Less than 10%
of the
100 million existing
residential units
have modification
features in them.**



demographic trends continue, the current gap between the number of Americans who would benefit from accessible housing and the number of accessible housing units available will grow even larger. For many households, this housing gap may result in a huge expense when remodeling their homes for accessibility. Others may be forced to move, unwillingly, to other units, other towns, or long term care facilities because

their houses have become an impediment or an actual danger to them. By moving, they may have to give up their neighbors, communities, and public and private services that have taken years to establish. While Americans move frequently, experience tells us that few choose to move willingly because of access or safety problems in their homes. Still others, with neither the means to modify nor the money to move, will live constrained and unsafe lives because of their homes.

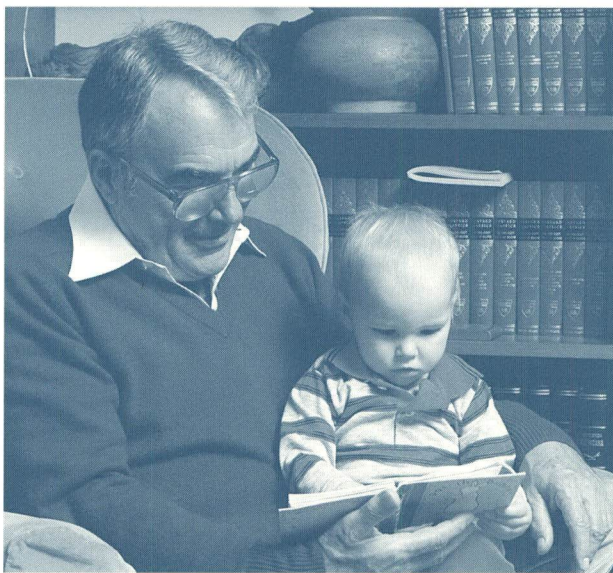
Proponents of home modifications believe that health care cost reductions are possible if home modifications proliferate. In a preventative

units each year.

Less than 10% of the 100 million existing residential units have modification features in them (LaPlante, Hendershot and Moss, 1992). Few of the over one million new units that are produced each year have significant access features (Duncan, 1994). If housing and

their houses have become an impediment or an actual danger to them. By moving, they may have to give up their neighbors, communities, and public and private services that have taken years to establish. While Americans move frequently, experience tells us that few choose to move willingly because of access or safety problems in their homes. Still others, with neither the means to modify nor the money to move, will

manner, they help people avoid injuries and reduce their use of medical services or institutional care. Recent trends have individuals returning home from the hospital with more acute conditions. Accessible, safer homes make it possible for some to leave rehabilitation or nursing settings to homes that support their recovery and lessen additional injuries or secondary disabilities, saving money, too.



Organizations with diverse and critical constituencies recognize the importance of home modification availability. The American Association of Retired Persons (AARP) has designated home modifications as one of five focus areas in their Connections for Independent Living program. In their 1996 national summit on disability policy, The National Council on Disability prominently featured accessible housing, home modifications, and assistive technology in their policy recommendations, which included the areas of tax policy, business incentives, research, and universal design. The National Association of the Remodeling Industry has added a Universal Design Award to their Contractor of the Year Awards program, recog-

nizing well-designed universal remodeling projects. The American Occupational Therapy Association has developed new instructional materials and resources for assessing the home and teaching practitioners about home modifications. While this recognition signifies the seriousness of home modifications issues, these organizations must remain focused, and others need to join in efforts to spread information and promote home modifications.

Finally, the usefulness of home modifications may be tied to the availability of other home- and community-based services. Households that can benefit from changes in the home may need other assistance, too. Modifying homes or using assistive technology are just two of several related efforts that may be needed to maintain people's independence and safety and foster community integration. Additional efforts include the use of home health, homemaking, and home maintenance services, as well as access to transportation. For example, people whose vision prevents them from seeing the controls of a microwave may benefit from additional lighting, auditory alerts, or tactile controls throughout the home. Their vision may prevent them from driving, too. Going to the grocery store, getting to work or to a doctor may be difficult or impossible. Their home may have been adapted but their access to community services may be unresolved. Despite a nicely modified home, they may be forced to move closer to those services or where these services are available at home. Thus, the goal of maintaining people in their homes can be met when home modifications are considered along with the availability of related services.

THE NEED FOR HOME MODIFICATIONS

AARP's annual member surveys consistently reveal a strong preference by seniors to remain in their homes—to "age in place" (AARP, 1996). In 10 years of surveys, over 80% of respondents expressed this preference. Households of all ages have roots in their communities and strong emotional ties to their homes. They prefer to remain where they are. Few people want to move solely because their house no longer fits their needs.

The problems faced by older individuals are compounded by the fact that they live in the oldest housing stock. These homes may have deferred maintenance, with roof or plumbing leaks, heating deficiencies, or dangerous electrical problems in addition to a lack of adequate lighting, railings, storage, and other accessibility concerns. Modification needs may get lost among many other pressing maintenance items, prolonging dangerous arrangements that may lead to falls and malnutrition or isolation within the home or the community.

The large and growing population of seniors and people with disabilities is increasing faster than the growth of the general population. This group is growing in absolute numbers and as a percentage of the total population. Baby Boomers will increasingly enter the ranks of older Americans over the next 40 years until, by the year 2030, people over the age of 65 will number 55 million and comprise over 18% of the total population (McLeroy and Crump, 1994), up from approximately 26 million and 11% respectively in 1980. Reasons for this increase include improvements in nutrition and health care of adult and older citizens, the improved health care and survival of infants and

young children (McLeroy and Crump, 1994), and the aging of the Baby Boomer generation. Improvements in medical technology will allow more persons to survive serious accidents and illness with disabling conditions and live for long periods of their life with disabilities.

The Americans with Disabilities Act (ADA) asserts that 43 million Americans, about 17% of the population, have disabling conditions. Varying estimates abound, according to the definition of disability or the methodology of the study. Studies yield figures ranging from 8 to 92 million people with disabling conditions (Elkind 1990, LaPlante 1993, Pope and Tarlov 1991). Current census-based estimates suggest a mid-range figure of around 50 million people or about 18% of the population.

These striking figures under-represent the number of beneficiaries because they do not account for an individual's need for supportive environments over the life span. Zola (1993) rejects an over-reliance on demographic figures, discounting almost all attempts at quantifying as inaccurate and arbitrary. He uses the virtual



inevitability of everyone's eventual acquisition of a disabling condition as the rationale for characterizing those without a current disability as merely "temporarily able-bodied." For Zola, the question of disability "...is not whether but when, not so much which one but how many and in what combination." If the numbers are not persuasive, perhaps the nearly universal likelihood of a disability, permanent or temporary, during one's life span is convincing. Everyone is likely to benefit from a modified home at one time or another.

SUPPLY

Households faced with the decision to modify their existing home or buy one that can be more easily adapted (the "improve or move" choice) are likely to find few accessible or substantially accessible homes to choose from. Limited code-mandated or market-based accessible new construction usually yields a small pool of potential homes in most communities. Fewer than 10% of the 100 million existing units are accessible or adapted (LaPlante, Hendershot and Moss, 1992). At the same time, there are few providers, programs, or experienced remodelers who can help modify existing homes.

New Accessible Housing

Since 1988, all Americans have benefited from significant and well-publicized federal legislation. While the ADA principally affects non-residential construction, the 1988 Fair Housing Amendments Act (FHAA) focused on the provision of newly built, accessible housing in multi-unit developments and put a single national umbrella over various state and federal housing accessibility laws. This legislation offered the promise of many new usable units becoming available annually. Unfortunately, for those who need accessible housing, the effect of the FHAA has been relatively small. Limited jurisdiction results in far less than 20% of residential new construction each year falling under FHAA design guidelines (Duncan, 1994). Anecdotal evidence shows that, even with those units that should conform, compliance records are disappointing.

Un-Regulated Housing

Over 80% of all new housing produced each year is built without falling under federal, state, or local access requirements. As a result, few of these units have any accessible features. For this new market-driven housing, access features and products will be added only through buyer demand. Builders indicate that the home buyer has yet to demand accessible new homes, thus, they do not currently view supportive features as useful selling points. There are promising signs in the increase of homes with first floor bedrooms and bathrooms, but it is not clear that this is because of an appreciation of long term usability. Few additional universal features are being included. Developers are not building universally-designed speculative projects and few consumers can afford the custom housing that might result in more supportive homes.

DEMAND

Households have few options for universally-designed homes in the new housing sector, but despite growing need, few consumers seem to be requesting home modifications, either. Why



are the many people who could benefit from modifications not demanding access features? First, the demographics are skewed. The population of people with disabilities is, in reality, a very diverse group. The group encompasses those with physical, sensory, as well as cognitive disabilities. It includes those with mobility impairments, grasp and reach limitations, and vision and hearing problems. They represent all ages, income levels, family types, and residential locations. They do not represent a large homogenous group that can be targeted with a single marketing or design concept because the home modifications and products they are seeking span an extremely wide range.

Second, it is a mistake to confuse the population of people who could benefit from more universal housing with those who recognize housing design as an issue and who will seek it out in the marketplace. Relatively few people, at any point in time, have serious enough impairments to seek products or a housing change. The one million people who use wheelchairs (LaPlante, 1992) represent a fraction of the population of people with disabilities. However, these individuals and others with severe impairments are most likely to recognize their needs and act to make changes. They are few in number. The otherwise independent person who may benefit from a grab bar or stair railing is not acutely aware of his or her needs.



Third, lack of information and lack of awareness, not lack of need, contributes to low demand. Most people still do not know about home modifications and assistive technology. They do not know where to buy quality products, where to get financial assistance, where to tap other resources, and where to find skilled practitioners. As a result, they do without, move away, or put up with ugly, inappropriate, inadequate, or unsafe alterations.

For a household needing a more supportive living environment, the limited amount of universally-designed existing homes to choose from means that modifications can be an important alternative. Constant attention to information dissemination will push many of those who can

KEY ISSUES

CONSUMER KNOWLEDGE

Better, safer, and easier-to-use home environments are important in a society that is aging and has an increasing number of individuals with disabilities. Unfortunately, only a small proportion of people who need more accessible living environments modify or adapt their homes. There are many reasons why improved living environments have not caught on. While there are many excellent educational programs and materials for educating consumers, most approaches have targeted the consumer as the problem rather than the environment. In addition, suggested modifications have often been inconsistent with consumer preferences. A great deal of knowledge exists about how to improve living environments; the next step is how to make these improvements part of the mainstream consumer marketplace.

Perspective

The scope of home modifications depends on one's perspective. Many think of home modifications and assume the discussion is about individuals experiencing losses in their abilities to manage effectively and safely within their home environment. Home modifications have been defined as "conversions or adaptations to the environment of individuals with disabilities intended to make tasks easier, reduce accidents, and support independent living" (Pynoos, 1993). This perspective is that home modifications are corrective for problems related to diminished abilities of an individual.

A great deal of knowledge exists about how to improve living environments; the next step is how to make these improvements part of the mainstream consumer marketplace.

An alternate perspective is that home modifications are preventive. Home modifications are an important component of a home improvement and can prevent injury and improve ease-of-use and efficiency. Home modifications, from this preventive perspective, pinpoint the environment as the problem irrespective of the consumer's abilities. From the corrective perspective, consumers are only individuals

with disabilities or functional limitations that impact their ability to conduct basic life activities in their home. From the preventive home improvement perspective, consumers include everyone.

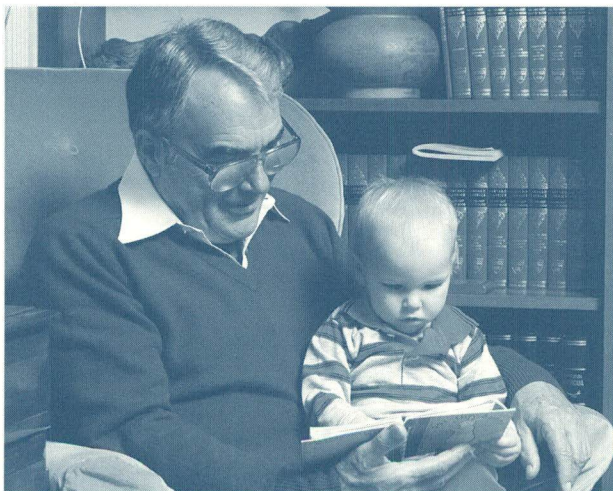
Level of Consumer Knowledge

Perhaps the best indicator of home modification knowledge is consumer adoption of modifications. Struyk and Katsura (1987) reported at least one modification in 19% of elderly-occupied homes with one or more family members with activity limitations, compared to 4% with at least one modification of those occupied by the non-elderly. LaPlante, Hendershot and Moss (1992) revealed that 2.9% of all households have some type of home accessibility feature (e.g., ramp, extra-wide doors, elevator or stair lift, hand rails, raised toilet, adapted door locks, lowered counters, slip-resistant floors). Reschovsky and Newman (1990) found that 10.1% of "frail households" had added special dwelling features. A survey of older adults by AARP (1990) revealed that almost one-fourth of the households over age 55 have undertaken a

home modification.

Nevertheless, concern exists that many persons who could benefit from home modifications do not have them. For example, fewer than one-fifth of the "at risk" users have home modifications. Even if consumers know about home modification and home repair programs, they may not use them. Mitchell (1995) found that 46.5% of 868 non-institutionalized elderly in eastern North Carolina knew about home repair services, but only 4% had used the service.

Other persons may reject home modification services because they are not tailored to their needs. McCaslin (1988) reported general knowledge and acceptance of the formal service system are better predictors of use than are the demographic and functional capacity variables usually studied. Well elderly persons who use formal services appear to select a package of programs to match their interests, whereas frail elderly draw on specific support programs to offset particular functional deficits. It is not sufficient to develop policies and programs based on professional definitions of need. Rather, home modification services must be available so that elderly persons view them as viable solutions to their problems.



Awareness of Programs

Princeton Survey Research (1995), in a recent survey of older adults, found that 71% were unaware of programs to help with home repairs. Homeowners were as likely as renters to be uninformed about programs that provide assistance with property taxes and home repairs. Sixty-three percent said it would be useful to know more about programs.

The respondents' greatest barriers to finding out about government programs were knowing the programs exist in the first place (62%) and knowing where to get information (66%). Older people in rural areas are more likely than others to say they do not know where to go for information about programs (76% versus 62% for city dwellers). People interested in learning more about government programs were most eager for a local directory of programs (79%); 70% would like telephone "help lines."

How Consumers Learn About Home Modifications.

Consumers generally learn about products and services through traditional methods such as advertising. However, consumers wishing to upgrade their living environments often rely on references from friends or relatives to select contractors and remodelers. This traditional scenario breaks down when the home improvements are modifications. Consumers are accustomed to adjusting to what they have and do not know about alternative products and building designs that may be more convenient and safer. There are few advertisements, if any, on television or in consumer publications that tout the desirability, beauty and benefits of modifications.

The 15% to 20% of individuals with function-

al limitations who receive services might learn of home modifications through formal service providers, particularly when a worker visits the individual within his or her home. Unfortunately, most service providers are likely to lack knowledge about home modifications.

Another source of information about home modifications can be professional home builders. However, Belser and Weber (1995) found that few builders are aware of modifications or use access features in their work.

Current Situation

Lack of knowledge of consumers, home builders and remodeling professionals, and intermediaries continues to inhibit the supply and demand for home modifications. Pynoos, Cohen, Davis and Bernhardt (1987) reported that there is no systematic program to educate professionals about assessing the needs of the elderly, or handy-men about the changing physical needs of older residents. Builders lack knowledge of the need, importance, and benefits from home modification solutions. Home modifications are perceived as solutions only for individuals with disabilities. People with disabilities are usually viewed as only those with wheelchairs. Thus, unless the client is in a wheelchair, the home builder, remodeler, or handyman is unlikely to think about home modifications.

Part of the problem with consumer education efforts is that home modifications and accessibility have been approached from the "disability" perspective. Additionally, home modifications are often relegated to the medical realm. This influence pushes the consumer/supplier to

focus on medically necessary modifications and reimbursement questions rather than independence and quality-of-life changes. The focus has also been toward maintenance rehabilitation instead of prevention. This approach has influenced individuals to consider home modifications after problems occur rather than as safety and convenience measures to prevent accidents and loss of independence.

To summarize, consumers do not perceive themselves as "disabled" and do not identify with messages directed to people with disabilities. They have limited access to information about accessible living environments, associate accessibility with disability, do not see examples of good accessible design, and do not have access to a variety of products or options that



promote ease of use and accessibility. For example, several general consumer outlets (e.g., K-Mart, Target, Wal-Mart, Walgreens, K& B Drugs, HQ, Central Hardware) and other building supply stores offer products for individuals with functional limitations. Unfortunately, there is often only a single model of each type of product, and frequently the products are placed on top shelves or so low they are not readily visible or accessible to the consumer.

Additionally, builders, remodelers, and service providers are not adequately positioned to assist consumer understanding. While many landlords, developers, and builders are aware of the Americans with Disabilities Act and the Fair Housing Amendments Act, they are unaware of the benefits and functions of a more supportive setting. They have limited knowledge and information about universal design and rely upon tried and true construction methods. The builder, lender, and appraiser communities have a partially negative bias toward accessibility and equate accessible environments with loss of resale value of homes. Builders are unaware that the small changes they make now will make significant differences to homeowners later.

Too often, the membership associations representing architects, builders, appraisers, and interior designers relegate universal design to the “special populations” category and do not include educational programs that emphasize this design movement as part of the mainstream.

FUNDING/RESOURCES

In recent years, there has been increased understanding of the need for, and benefits of, home modifications. However, this widened appreciation is hampered by a lack of awareness of resources and threats to many existing funding and financing sources. Consumers have limited familiarity with the private and public resources for home modification projects that are available to households of all incomes. For example, one of the most frequently asked questions of The Center for Universal Design’s national information services is how to pay for home modifications.

Resource Assessment

Funding can come from public or private sources, but many households pay for modifications out of pocket. In one’s search for government assistance funds, lack of awareness is compounded by limited eligibility, limited fund-



ing, and funding that may have much competition from other members of the public as well as competition for other uses. For example, the aging network has access to two programs that are targeted to low income seniors and that use a combination of federal, state, and local funds. The Social

Services Block Grant from the Department of Health and Human Services (Title XX) allows expenditures for home modifications, but, as with all other block grants, home modification priorities must compete with many other essential services. The Home and Community Care Block Grant from the Administration on Aging (Title IIIb) is targeted to seniors, but is stretched by many competing demands. Still, some home repair services are provided with these funds through area agencies on aging, local aging councils, or other non-profit organizations. To receive services under either of these two government programs, one must meet age and income criteria and be fortunate enough to live in an area with funding for modifications or repairs. In addition, a household member must find out about the program and hope to apply successfully before the year’s allocated funds have been expended. This scenario is repeated with many government programs which are

targeted to low income households.

Resources for home modifications resist easy categorization. Access or eligibility can be determined by income, age, employment status, location, and health status. Resources can originate at federal, state, city, or county levels. No fewer than seven federal departments have programs where funds can be used for home modifications: Agriculture, Energy, Education, Health and Human Services (HHS), Housing and Urban Development (HUD), Treasury, and Veterans' Affairs. The U.S. Department of Housing and Urban Development's HOME program and the U.S. Department of Agriculture's Rural Community Development office both have loan and grant features. The Federal Housing Administration (part of HUD) and Rural Community Development (RCD) offer loan guarantees while RCD also has subsidized loans. Non-federal sources exist at the state and community levels, in both the public and private sectors. State agencies may have their own programs using tax or bond revenues, often through a housing finance agency. Foundations, private medical insurers, and charitable organizations, as well as lending institutions can be resources for assistance. Some private medical insurers and Medicaid and Medicare pay for limited home assessments, durable medical equipment, or certain modifications. Private sector loan programs are available from commercial banks or through remodeling professionals.

Home modifications can be paid for in a variety of ways depending on a number of factors, including the type of modification, the income

and tenure status of the household, and the individual's age. The following examples illustrate the contrasts:

- ♦ Medicare will pay for some durable medical equipment but not structural changes which equity financing will pay for.
- ♦ Many sources of public funding (however limited) are targeted at low income homeowners, while renters have only a few resource options.
- ♦ Special resources exist for disabled veterans and persons with specific disabilities (e.g., cerebral palsy). Some programs provide modification services instead of providing funds directly to a household.
- ♦ Tax credits and tax deductions help reduce income tax liabilities. Local property tax abatements can help free up funds for modifications.



The opportunities, even for federally-funded programs, vary by state and town. States decide how to spend funds for programs such as Medicaid from the Health Care Finance Agency and Block Grants from HHS and HUD.

Current Situation

A family's search to obtain financial assistance with home modifications is likely to become more difficult in the future. Low- and moderate-income families will be particularly vulnerable. As with almost all affordable housing initiatives, those home modification and repair programs directed at helping people with low incomes are

plagued with insufficient funds to meet the demand. Waiting lists are common and many are turned away. Families may be caught in gaps between eligibility requirements for income or age limits.

Federal initiatives that provide millions of dollars of support for home modifications for low- and moderate-income households are currently in danger of elimination or reduced funding. There is much discussion of providing even more discretion for funding decisions at the state and local level. This will create greater competition for the remaining funds and new demands on funding arising within states. While local decision making can better tailor programs to individualized area needs, it raises the spectre of zero-sum competition among many worthy programs. Unless advocates become aggressive, home modifications will lose in battles with medical reimbursement and other affordable housing initiatives.

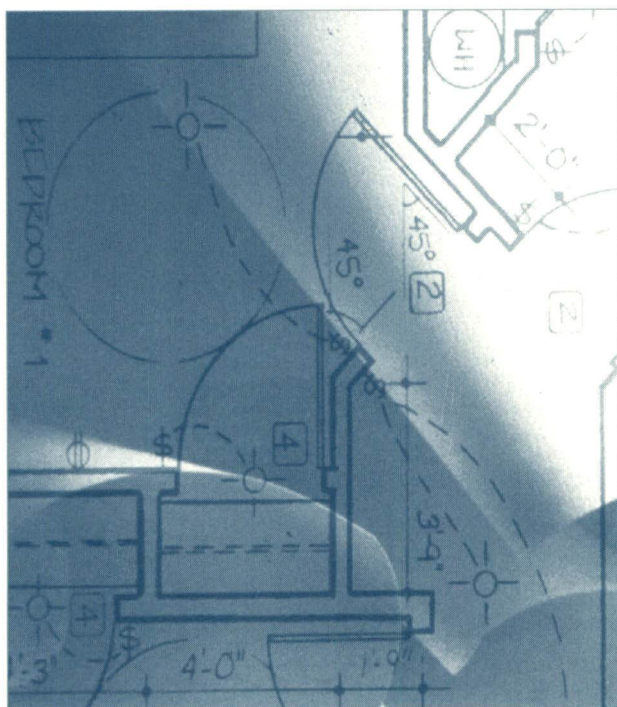
SERVICE DELIVERY

The delivery of home modifications is best characterized as a patchwork of services, involving a large diversity of providers, types of modifications, and methods of service delivery. It is a very fragmented, uncoordinated system with significant gaps in types of services available and geographic coverage. Consumers and providers alike find it difficult to 1) access services, 2) locate skilled providers or products, and 3) coordinate the many facets of home modifications.

Several barriers have especially impeded the effective delivery of home modification services including:

- ♦ the lack of systematic and uniform assessments;
- ♦ the under utilization of home modifications by social service/home care providers;
- ♦ the low priority of home modifications in housing programs;
- ♦ the medical bias of the health care system;
- ♦ the instability of government-funded home modification programs; and,
- ♦ the limited role of the for-profit sector.

The continuing unmet need for home modifications can be attributed to several interrelated factors such as a low level of consumer awareness, unaffordability, and lack of government funding. Additional factors include fragmentation in the delivery system, the lack of providers in many areas, and gaps in the types of home modifications, especially for low- and moderate-income persons. The delivery system for



home modifications consists of providers such as remodelers, contractors, tradesmen (e.g. plumbers, electricians), handymen, medical supply companies, housing organizations, social service agencies, and volunteers. While multiple providers theoretically enhance consumer choice, the reality is that the system of home modifications is very fragmented and difficult to access. Many providers have responsibility for only one aspect of the process (e.g. information and referral, assessment, planning, funding) or supply only specific modifications. In most communities, there is no central place to find out about or obtain home modifications. Part of the problem is that home modifications fall into a limbo among housing, social, and health services. None of these systems has taken full responsibility for accurately assessing or modifying homes.

Very few non-profit, public agency, or private sector providers are in a position to meet the diverse needs of persons with disabilities for home adaptations. Driven by categorical funding sources, faced with the multiple facets of home modifications, and confronted with a segmented market, most providers specialize in particular aspects of adapting homes. For example, medical supply companies sell specific products such as assistive devices or grab bars whereas remodelers or contractors make structure related changes such as widening hallways or installing ramps and curbless showers. Occupational therapists and case managers bring the broadest perspective to home modifications. In addition to recommending structural changes or assistive devices, they are likely to suggest ways of enhancing functioning through behavioral changes, moving objects within the home, or helping relocate to another setting.

In spite of the growth in home modifications, there are very few comprehensive programs. While this may not be a serious problem for consumers who require only a few simple modifications, it harms persons who have complex needs. Rural areas appear to be especially underserved. Even where home modification programs exist, they are usually very limited in terms of how many clients they can enroll and the types of modifications they make. Most programs that focus primarily on home modifications have quite modest budgets and long waiting lists. They concentrate their limited resources on low cost modifications such as grab bars, hand rails, and ramps. Consequently, they are unable to address needs for major modifications.



Current Situation

Specialization, gaps in services, and the absence of comprehensive programs make it difficult for both consumers and professionals to organize the delivery of home modification services. As a result, the procurement of products and adaptations is often piecemeal, never proceeding much beyond those modifications that are easy to access and low cost.

Several recent promising developments include new models of service delivery, more sophisticated assessment tools, a greater avail-

SYSTEMS CHANGE ACTION PLAN

Home modifications not only have the potential to increase an individual's independence while decreasing reliance on care-givers and community support programs, but they may also prove to be more cost-effective in many cases (Barnes, 1996). Unfortunately, the benefits of home modification information

and services remain inaccessible to most of the elderly and persons with disabilities due to many problems within the home modifications delivery system. There is a growing gap between the need for home modifications and flexibility of the housing industry and the medical and social service sectors to meet the need for home modifications. There is also a need for additional supporting policies, public awareness and funding sources (Wilner, 1994).

Four major issues related to home modifications need to be addressed through systems change: research, education and awareness, service delivery, and funding policies and programs. Systems change is a planned process that coordinates many strategies to permanently alter the provision and funding of home modifications and services. To achieve systems change, coalitions will need to involve persons with disabilities, the elderly, and a diverse group of other stakeholders. Through collaborative efforts, the home modification system can be changed to effectively and appropriately provide services across all ages and disabilities.

The need for home modifications has risen over the past 20 years. However, too many well-intended programs and efforts have withered from lack of support or interest. Occasional,

There is a growing gap between the need for home modifications and flexibility of the housing industry and the medical and social service sectors to meet the need.

short-term, and uncoordinated efforts cannot succeed in bringing about permanent change. It is essential to engage in long-term activities that involve all principal stakeholders and attract legislators, regulators, and industry policy makers. Forming a coalition with specific goals and objectives is an effective way to pro-

mote the availability of home modifications.

The following section makes recommendations and action steps to promote the availability of home modifications through five major areas: leadership and coalition building, research, education and awareness, service delivery, and funding policies. The action steps should be adapted to the needs of the situation, whether on the national, state, or local levels.

LEADERSHIP AND COALITION BUILDING

A critical first step to these efforts is the presence of an organization(s) willing to provide leadership to a coalition whose priority is increasing the availability of home modifications. A small working group should be formed that can share leadership and costs and give credibility to the coalition. Among other tasks, this leadership group should conduct research and draft a status report on home modification needs and barriers in the geographic area. Other stakeholders may be convinced to get involved if a sufficient case can be made and specific activities identified relative to their goals.

Early on, the coalition members need to agree on goals, objectives, and operational strategies. All policies, regulations, and financial resources

of the coalition should reflect the values of persons with disabilities and the elderly. The coalition should support a range of options which allow consumers to live and work in the community as independently as possible. The stakeholders should advocate for policies that fund home modifications and services for persons regardless of their age or disability. Not all stakeholders are going to achieve every objective they want; compromises will be needed among stakeholder groups and within any legislation or policies.

Members need to decide if the coalition is to be free standing with separate and discrete funding (e.g., via grants) or part of a larger sponsoring organization. Participating organizations need to provide staff time and in-kind support to conduct coalition activities.

An action plan that includes both a 5- to 10-year time frame and shorter term objectives needs to be developed. The plan will help identify other partners for the Coalition. Enough time should be allowed to compensate for early set backs.

The following questions should be addressed by the Coalition:

- ♦ What are the potential barriers and factors influencing the impact of each objective?
- ♦ What strategies are appropriate for national, state, or community planning and implementation?
- ♦ Are some strategies going to be easier to implement due to existing materials, staff, delivery system, and/or audience characteristics?
- ♦ Do some strategies need to occur first in order to increase the impact of other

strategies?

- ♦ Do some strategies need to occur related to other pressures (for example, federal legislation being drafted or request for training programs)?
- ♦ What is a reasonable timeline and order to achieve the different strategies?

Coalition Building

Another task for the group is to identify likely partners that have mutual goals and can shoulder responsibilities identified in the action plan.

- ♦ Who are the stakeholders and what are their desired outcomes?
- ♦ What are their roles and are they changing?
- ♦ What are the partnership possibilities?



For the purposes of generating support and interest, a large coalition should be initially created. Members of each constituency need to be included in collaborative efforts. With some overlap, these organizations fall into one of four interest areas: the housing sector, the aging network, the disability community, and the medical

system. Social service and many civic groups cross categories. It is essential to include members of the public, especially older and disabled individuals. Community coalitions on home modification which involve consumers as well as product and service providers should work in coordination with state- and national-level coalitions. Not all members of the Coalition can or should be members of the leadership group, which needs to be small enough to be a functional working group.

The following list identifies many possible coalition members. Coalitions may have very different compositions in different geographic areas; each locale will have different strong interested groups.

POSSIBLE COALITION MEMBERS

State-Level Public Agencies

Department on Aging
State Housing Agency
Housing Finance Agency
Protection and Advocacy Agency
Tech Act Program
Developmental Disabilities Council
Vocational Rehabilitation Agency
Cooperative Extension Service
Social Services
Welfare
Medicaid Office
State tax agency
Department of Public Health
Department of Education

State-Level Non-Profit/Other

AARP
Arc
Christmas in April

Easter Seals
State Independent Living Council
United Cerebral Palsy Associations
University Affiliated Programs
Parent Training Information Centers
University Departments of Planning, Design
or Allied Health
Commercial banks, credit unions,
savings and loans
Medical insurers

State-Level Industry Associations

National Association of Home Builders
National Association of the Remodeling
Industry
American Institute of Architects
Association of Realtors
American Society of Interior Designers
National Kitchen and Bath Association
American Society of Landscape Architects
Interior Design Society of America
American Occupational Therapy Association
American Physical Therapy Association

Community-Level Public Agencies

County Health Services
High Schools
Vocational/Technical Schools
Community Development Office
Tax agency

Community Non-Profit Organizations

Community Housing Development
Organizations
Housing Authorities
Community Development Corporations
Community Action Programs
Independent Living Centers

Area Agencies on Aging
 Interfaith volunteer care-giver projects
 Outreach ministries
 Senior Centers/Councils
 Charitable, civic, and fraternal organizations:
 Ruritan clubs
 Cosmopolitan Club
 Civitan
 Golden K's Kiwanas
 Lions
 Shriners
 Woodsman of the World
 Elks
 Knights of Columbus
 Habitat for Humanity
 Acute care and rehabilitation hospitals

Local For-Profit Entities

Therapists
 Remodelers
 Home health service agencies
 Home Builders Association
 Realtors
 Designers/architects
 Visiting Nurse Association

RESEARCH

To promote home modifications, coalitions need to assess needs, establish a baseline of services and resources, and demonstrate effectiveness. Results of this research should be brought to policymakers to shape future legislation, regulations, and certification rules.

Identify Barriers

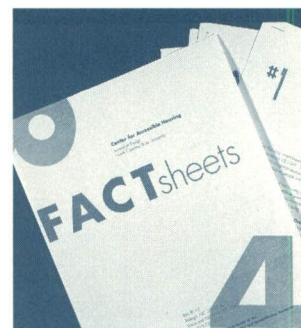
In order to understand the problems that the coalition confronts, conducting research on the

primary barriers is crucial. Examples include but are not limited to:

- ♦ Consumer characteristics and needs
- ♦ Resource gaps
- ♦ Level of consumer knowledge
- ♦ Remodeler, health, or social service worker expertise
- ♦ Awareness on the part of elected officials
- ♦ Level of inter-agency coordination

Assess Consumer Characteristics and Needs

Conduct a statewide or areawide assessment of the need for home modifications and the contributing demographics. Additionally, learn what the consumer already knows



and thinks about home modifications. However, it is unclear if the language, concepts, needs, and wants of the consumer are correctly identified. It is possible that in some circumstances technology (e.g., assistive technology, consumer or building products) are providing consumers with solutions that is inappropriate and ineffective. Consider using focus groups or telephone surveys to collect this information.

Assess Service Delivery System

To assess the current delivery system, the following questions should be answered:

- ♦ Who is offering home modification services?
- ♦ What are the current home modification programs? funding levels?

Assess Funding/Resources and Gaps

- ♦ How many modifications are done each year?
- ♦ How do households pay for remodeling projects?

Conduct Effectiveness Research

More scientifically-based evaluation studies are needed to understand how home modifications affect quality of life and their cost effectiveness. Such information is important to convince policymakers to fund programs that pay for home modifications. In addition, evaluations should be conducted concerning the efficiency and effectiveness of different service delivery models.

The added value of universal design needs to be demonstrated if remodelers and consumers are to get involved. Real-life cost/benefit analyses need to be completed that will substantiate the increase in home value, improvement in usability of the home, and cost savings by individuals who have not had to make additional modifications to their homes or move to alternate living environments.

EDUCATION

Home modification educational efforts must focus on aspects of the environment that can be improved for people of all ages and abilities. The perspective should shift from the individual's problems to how home modifications can solve the deficiencies in the environment. The consumer should not be made to feel as though they are deficient, but that areas in their living environments have been poorly designed and products difficult to use. A key part of achieving this is broadening the content and scope of educa-

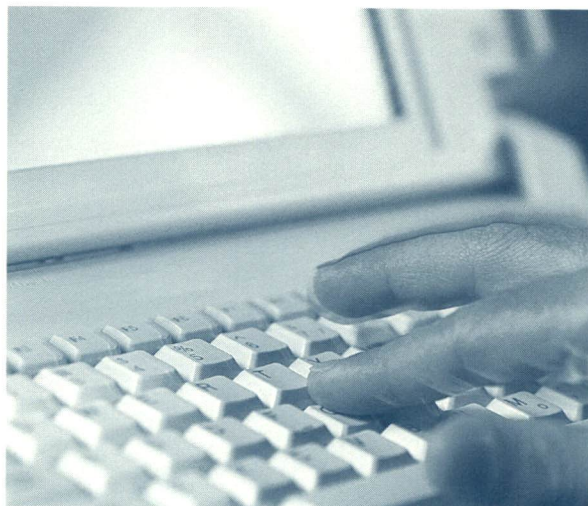
tional materials. A portion of educational material should show modifications for individuals who use wheelchairs. The remainder should illustrate other changes that would make homes safer, more efficient, and easier to use for people with other disabling conditions as well as those who are temporarily able-bodied.

Home modifications and home improvements need to be presented with zest, enthusiasm, joy, and creativity. Home modifications must find their way into general consumer media (publications and television). Success stories need to appear throughout the media.

National Information Dissemination

Information and referral centers need to be established, or added to other programs, as places for consumers, service providers, and policymakers to get timely research and home modifications information. A marketing plan will need to address reaching urban and rural community providers and service agencies. Centers should:

- ♦ Concentrate on how to disseminate information that is already available to new audiences (private enterprise, national, state and



community organizations and agencies, libraries, general population, etc.) through a variety of formats such as mainstream magazines, TV and Public Service Announcements, video, satellite or fiber optics, CD ROM, CAD programs, 800 numbers, E-mail or web-sites. The sites need to be linked to other related websites.

- ♦ Disseminate current research information and other educational materials in a timely manner and to a greater audience via the Internet.
- ♦ Identify and disseminate information on successful products that benefit persons across age and disability populations.
- ♦ Develop a method to share home modification information between coalition members, national associations (AARP, National Association of Home Builders, American Society of Interior Designers, etc.), and academic and research centers, including E-mail and/or websites which are established by National Research and Training Centers or AARP for communication, sharing of documents, and "action alerts."
- ♦ Summarize information about the need for home modification and its benefits into "fact sheets" that can be easily understood by consumers, stakeholders, and policymakers. These "fact sheets" then need to be shared through national, state, and community consumer networks for use in current discussions about health and welfare reform and managed care systems.

State and Local Information Services

Homeowners, renters, and landlords are

unaware of the many design, product, and financing options that are open to them. For example, very few business owners consider the positive tax implications of access modifications. In response to this, groups operating on the state or community level should initiate several activities:

- ♦ Publish an annual funding, finance, resource, and organization directory for both professionals and consumers. This should include service delivery programs. Distribute it to all of the key players (e.g., builder's associations, senior centers, medical facilities).
- ♦ Develop educational programs for consumers to better inform them about the benefits of home modifications, how to select and work with providers, and choose among home modification options.



- ♦ Establish a toll-free information and referral service. This may be partnered with ongoing information provision on a variety of affordable home ownership or remodeling plans. Establish a technical assistance service to help households and organizations locate funding.

Training

Develop feasible and cost-effective training programs and materials for use at the state or community level for home builders and remodelers and cross-training for health and social service professionals about assessment. Emphasis should be placed on producing high quality materials, training the trainer packages, and peer training models. Sessions should be presented at professional conferences and meetings, from the local to the national level.

Universal Design Speaker Panel

Educate funders, program managers, lenders, medical insurers, and legislators about the need, broad constituency, and the cost effectiveness of home modifications. Expert speakers can be found through state associations, universities, and home modification programs.

Industry Initiatives

- ♦ Market to the housing industry about the expanding need and consumer interest in home modifications. Establish housing design awards programs, linked with industry awards. Document and publicize notable success stories.
- ♦ Push the real estate and appraisal professions to adopt continuing education requirements in home modifications and universal



design so they can more reasonably assess the value of accessible housing.

- ♦ Conduct awareness campaigns to inform renters of their rights to modify their homes under the Fair Housing Amendments Act of 1988.
- ♦ Convince medical insurers to include home modification materials and seminars as a part of their member services package.

Cross-Training Professionals, and Consumers

Training should focus on 1) establishing a set of basic competencies in home assessment, 2) working in interdisciplinary teams, 3) providing alternative solutions for meeting the needs of clients, 4) identifying funding sources, and 5) establishing methods of evaluation and effectiveness. Special efforts should continue to train mainstream remodelers in how to inform consumers who are updating parts of their homes (e.g., kitchens and bathrooms) about the advantages of features that could make the environment more enabling (e.g., adaptable bathrooms) for occupants who may experience a disability or for their guests.

FUNDING/RESOURCES

Efforts in funding and financing should focus on developing new sources, reshaping existing sources, and fully accessing existing sources. Ensure that representatives from funding and financing agencies and organizations are part of the coalition, such as banks, housing finance agencies, and public and private medical insurers.

National Efforts

Medicare

Coalitions should advocate for HHS to change Medicare reimbursements to more closely align with Medicaid allowances in the following ways:

- 1) pay for home modification assessments by occupational therapists or other health care professionals and
- 2) allow broader coverage for modifications that will improve safety, prevent accidents, prevent institutionalization, or allow for earlier discharge from institutional care settings. Research data utilizing client experiences and outcomes should be used to make the case for cost-effectiveness.

Medical Insurance

Coalitions should convince private insurers to allow medical insurance payments or reimbursements for home modifications. Insurers need to be persuaded that it is cost-effective to pay for home modifications for some of their customers who may be able to leave a hospital or other setting for home. Research needs to demonstrate long-term reductions in the use of medical services for

individuals who have received home modifications.

Reverse Equity Home Loans

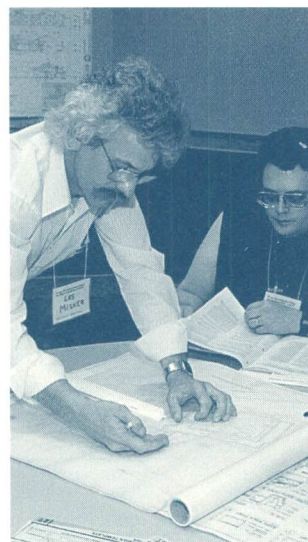
- ♦ Continue and improve information dissemination about Home Equity Conversion Mortgages to overcome limited consumer acceptance.
- ♦ Encourage Fannie Mae's continued secondary market support.
- ♦ Encourage FHA's continued insurance for loans.
- ♦ Expand loan availability to include South Dakota and Texas.

Internal Revenue Service

Advocate for changes in IRS rules that would more easily allow home modifications as a deductible expense. This should include allowing for more flexible criteria such as safety and independence rather than just the "medically necessary" criteria which is now used.

Planning

Promote the idea of home accessibility modifications as a part of a family's long-term financial planning; as one of the many legitimate remodeling options that they have available to them.



State and Local Level Actions

HUD Community Development Block Grants

Many state and community housing programs which receive repair assistance funds from the HOME and Community Development Block Grant programs differently interpret and apply HUD's requirements regarding code upgrades on dwellings. Programs may apply upgrade rules for all HUD projects and, as a result, run the risk of using more funds on fewer households. Research the requirements; develop and utilize alternate flexible programs with different funding sources to avoid the code upgrade problem.

Federal Home Loan Bank

Members of the Federal Home Loan Bank (which includes most commercial banks, Savings and Loans, and others) should be encouraged to partner with non-profits to obtain grants for special financing for affordable housing projects. Establish partnerships and make the case for adding home modification programs to the list of possible uses of funds.

Community Reinvestment Act (CRA)

The Community Reinvestment Act requires most banks to make loans to underserved members of their community. Institutional rather than individual approaches to banks are likely to be the most successful way to take advantage of the CRA. In this way, a

state or community organization might create a coordinated lending program with a bank by assisting with developing a client base or by screening clients.

Competitive Application Programs

Competitive funding programs from housing finance agencies can add accessibility as a contributing feature to application criteria. State-level agencies that administer block grants from HUD or HHS can add criteria for home modifications to their evaluation cri-

teria when reviewing competitive applications for funds. In this way, local communities who wish to access housing funds will be encouraged to add modification features to their programs.

Medicaid

Lobby for inclusion of home modifications in the state Medicaid program, including any home and community-based waivers.

Housing Finance Agencies

Housing Finance Agencies may be in a good position to promote home modification programs for low and moderate income households. The number and variety of their possible funding sources and the flexibility of their use holds great promise. For example, HFAs use of general revenues to provide additional funds for targeted programs directly or to capitalize housing trust funds



can allow for much greater flexibility and targeting of programs. HFAs can also encourage additional private lenders to move into the home modification lending area through partnerships and loan guarantees. HFAs may be able to take the lead in expanding the availability of purchase and rehabilitation loans. For example, both Minnesota and North Carolina Housing Finance Agencies have programs that can be used for home modifications.



Consolidated Plan

Although the competition for funds may be fierce, all CDBG and HOME projects must be consistent with HUD's required Consolidated Plan which has been implemented in states and localities across the U.S. since 1993. Each jurisdiction is required to update its Plan annually. It is during the priority-setting part of the plan development that organizations and individuals alike can influence fund expenditures for home modifications. Public hearings are mandated, where a strong presence by those who can argue for home modifications expenditures at these hearings can make a big difference in allocations.

State Funding

Coalitions should guard against over reliance on federal funds. As needs grow, additional funding streams from states' general revenues should be tapped. A few states, notably Massachusetts and Kansas, currently have pending legislation to promote home modifications through state tax allocations and tax incentives. Coalitions in other states should follow their progress and craft their own legislation.

Trust Funds

Advocate for the creation of community and county housing bonds and trust funds with home modifications as identified activities.

Community Housing Development Organizations

Create Community Housing Development Organizations (CHDO) with a home modification/home repair focus. The CHDO can seek funding from a variety of sources including designated HOME funds.

Private Non-Profits

Some Habitat for Humanity chapters have added housing rehabilitation to their new construction activities. Approach them to add home modifications to their activities.

Christmas in April is a community-based project dedicated to helping low-income, elderly, and disabled people live in warmth, safety, and independence through volunteer repair and renovation of owner-occupied homes. With affiliates in 46 states, many communities can take advantage of their services for home modifications.

Innovative Programs

New partnerships or little known uses of funds often hold promise for replication and utilization elsewhere. The North Carolina Adaptive Equipment Loan Program is a collaboration between the Program for Accessible Living, an independent Living Center in Charlotte, North Carolina, and NationsBank, one of the nation's largest commercial banks. This program assists North Carolina residents in obtaining loans for the acquisition of equipment which enables people with disabilities to improve their independence, quality of life, or become more productive members of the community. Funds for operations and loan guarantee came from the Kate B. Reynolds Charitable Trust, the National Institute on Disability and Rehabilitation Research, and NationsBank.

Fannie Mae and the Federal Housing Administration (FHA) are among the few lending institutions that offer home mortgages that allow rehabilitation expenses to be rolled into a first mortgage. FHA's 203(K) program is available nationally while Fannie Mae's new program, Home Choice, is available in 11 states and Washington, DC. Home Choice also is targeted home owners with disabilities.

SERVICE DELIVERY

Too few of those who are in a position to help others modify their homes have the information or expertise to be effective. Professional degree or other training programs offer little course work and no requirements in universal design or modification issues. Continuing education



opportunities are limited. The economics of the medical system do not allow for adequate staff time in patient's homes to do useful assessments. Remodelers, information and referral personnel, advocates, and others do not know where to get information and where to see good examples of modifications. Locally, communities can collaborate on models and demonstration projects.

National and State Efforts

Increase Information Sharing

Develop a feasible and effective national "marketing plan" to share the information generated by NIDRR-funded National Research and Training Centers about home modification programs, successful products, and useful demonstration or training projects with consumers, their service providers, the general population, and national organizations.

Expand Medicare and Medicaid Coverage

While there is enormous pressure to reduce health care related expenditures, efforts should be made to ensure that these pro-

grams continue to pay for existing equipment and assistive devices and cover additional home modifications that help prevent accidents or forestall institutionalization. It would also be especially useful to lift existing expenditure caps and restrictions in the growing Medicaid Waiver program, which has the authority to pay for a broader range of home modifications than the conventional program.

Involve Managed Care

If cost-effectiveness can be proven, health plans would be encouraged to form contractual alliances with product suppliers and home modification service programs, potentially leading to reduced prices for adaptations. In addition, they may have added incentives to provide educational programs for professionals and consumers about modifying homes. A major constraint that must be overcome in capitated systems is provider concern about consumers making use of what could be a large home modifications benefit and then moving to another plan.



Promote the Widespread Use of Home Assessments

Health care professionals (e.g., physicians, nurses, hospital discharge planners, home health workers), social service personnel (e.g., case managers), and workers in the building industry (e.g., remodelers) should become more aware of how to assess problems that environments present for their clients. It would be very useful if physical exams and discharge plans for older adults and younger persons with disabilities included a battery of questions about functioning and the home environment and, if the situation warrants, home visits by occupational therapists or other trained personnel.

Develop Centralized Referral Systems

Given the lack of information concerning qualified providers and useful products, Area Agencies on Aging and Centers for Independent Living should uniformly set up centralized referral systems for older adults and younger persons with disabilities including costs of modifications and provider references, experience, and reliability.

Increase the Commitment of the Housing Sector

In addition to its focus on neighborhood rehabilitation and housing affordability, the housing sector needs to embrace the concept of home modifications as an essential part of its mission. A foothold in this area may be the lack of affordable accessible housing for persons with disabilities and the cost-effectiveness of modifying existing housing compared with building new units. While such an approach may become more feasible with

additional block granting of HUD programs, success will hinge on community needs assessments, participation in HUD's Consolidated Plan, and advocacy.

Replicate and Build on Successful Practices

Successful models, which illustrate best practices, make it easier for other programs to avoid pitfalls and develop more rapidly. Emphasis should be placed on programs that serve a variety of ages as they have the potential to build coalitions among groups and develop broad political support. Replication of such exemplary models would be enhanced by case studies that analyze their strengths and weaknesses; demonstrations to test their viability in other settings; and best practice awards from remodeling, aging, and disability organizations that highlight their accomplishments.

Enforce the Fair Housing Amendments Act of 1988

The Fair Housing Act sets basic standards of accessibility for new construction over four units and calls for existing multi-unit housing to provide "reasonable" accommodations for persons with disabilities. The Fair Housing Act's basic provisions need to be enforced and its concept extended to single-family housing and smaller apartment complexes.

Community Actions

Identify Providers

Identify community home modification product and service providers (including

mainstream retailers) and support them through awareness and training activities, coordination of services, and inclusion in systems change efforts.

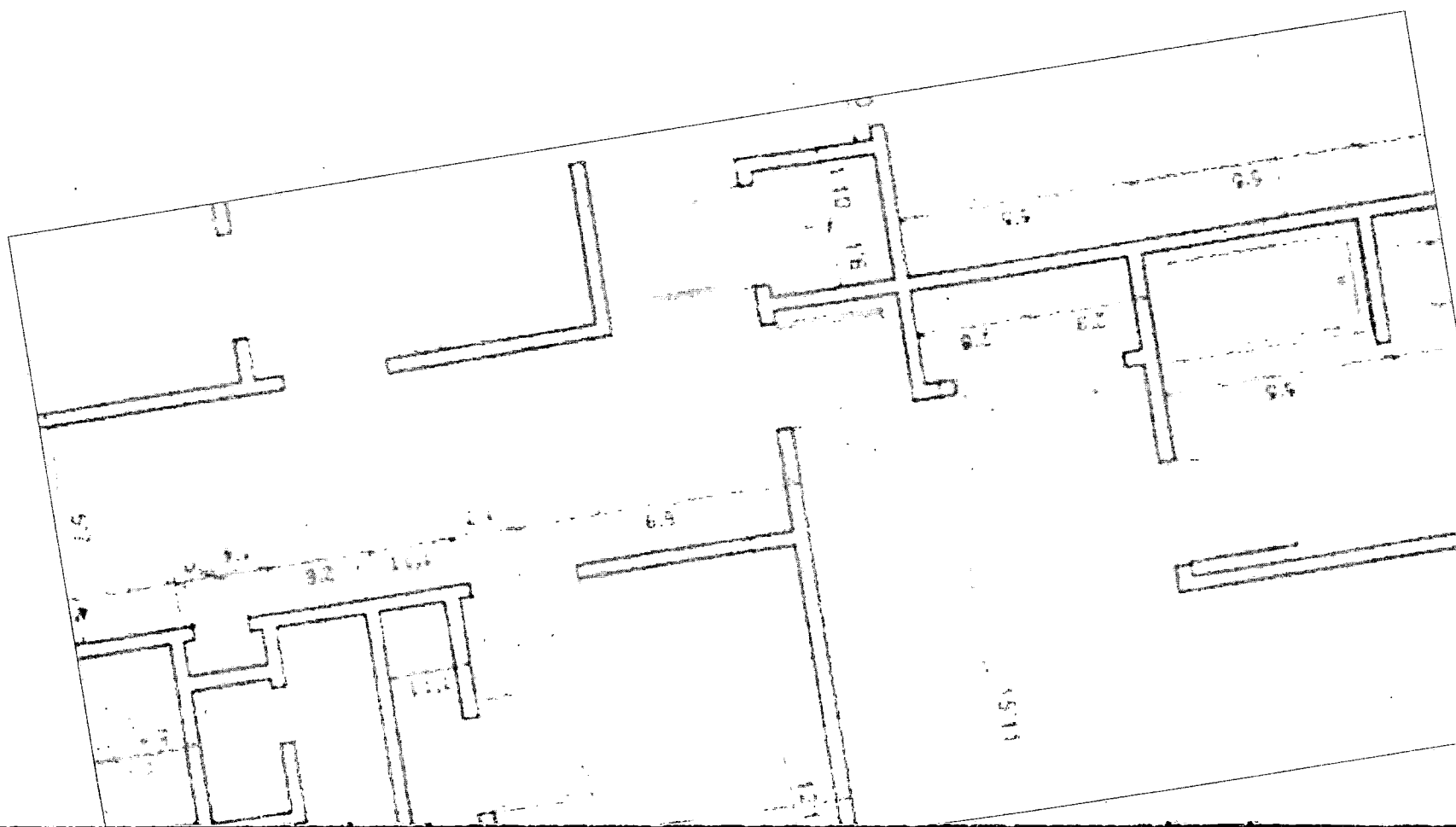


Advocacy Training Efforts

Work with existing state and community consumer advocacy training efforts to promote and support stakeholder advocacy of programs, policies, regulations and/or funding for home modifications and services.

Home Modification Coalition

Create a community home modification coalition. This can operate on local issues to complement the work of a state level coalition. For example, local coalitions can work to add home modification services to other local programs that already provide services to homes (e.g., weatherization, home repair, and chore services).



APPENDICES

A. Information Resources

B. A Summary of
Home Modifications

C. *A Blueprint for Action:*
Conference Overview

D. *A Blueprint for Action:*
Conference Participants

Appendix A

INFORMATION RESOURCES

Coalition Building

Adaptive Environments. (1996). ADA: Title II Action Guide for State and Local Governments. Boston, MA: Author.

American Association of Retired Persons. (1995). Making Your Community Livable: Programs that Work. Washington, DC: Author.

Department for Health, Housing and Community Services. (1992). Putting the Pieces Together: A National Action Plan for Dementia Care. Canberra, Australia: Australian Government Publishing Service.

National Assembly of National Voluntary Health and Social Welfare Organizations. (1991). The Community Collaboration Manual. Washington, DC: Author.

National Coalition on Mental Health and Aging. (1994). Building State and Community Mental Health and Aging Coalitions: A "How To" Guide. Washington, DC: American Association of Retired Persons.

National Low Income Housing Coalition/Low Income Housing Information Services. (1995). Creating Change: A Guide for Local Action on Federal Housing Programs. Washington, DC: Author.

Neugarten, D.A. (1992). Project Care: Characteristics of Successful Coalitions. Denver: National Leadership Institute on Aging.

Ohio Center for Action on Coalition Development. (1992). Handbook on Coalition Building. Washington, DC: Emprise Designs.

Susik, H., & Pfeiffer, E. (1993). Coalition Building in Long Term Care. Tampa, FL: National Eldercare Institute on Long Term Care and Alzheimer's Disease.

Wilner, M.A. (1994) Fix It!: A Report from the National Conference on Home Modifications Policy. Raleigh, NC: The Center for Universal Design.

Consumer Knowledge

American Association of Retired Persons. (1990). Understanding Senior Housing For The 1990's (PF4522 (593) D13899). Washington, DC: Author.

Belser, S.H., & Weber, J.A. (1995). Home Builders' Attitudes And Knowledge Of Aging: The Relationship To Design For Independent Living. Journal of Housing for the Elderly, 11(2), 123-137.

LaPlante, M.P., Hendershot, G.E., & Moss, A.J. (1992). Assistive Technology Devices and Home Accessibility Features: Prevalence, Payment, Need, and Trends. Advance Data, 217. Hyattsville, MD: Vital and Health Statistics of the Centers for Disease Control, National Center for Health Statistics.

LaPlante, M.P., & Miller, K.S. (1992, April). People with Disabilities in Basic Life Activities in the U.S. Disability Statistics Abstracts, 3. Disability Statistics Program, University of California, San Francisco: U.S. Department of Education, National Institute on Disability and Rehabilitation Research.

McCaslin, R. (1988). Reframing Research on Service Use Among the Elderly: An Analysis of Recent Findings. The Gerontologist, 28(5), 592-599.

Mitchell, J. (1995). Service Awareness and Use Among Older North Carolinians. The Journal of Applied Gerontology, 14 (2), 193-209.

Princeton Survey Research Associates (1995). The Circumstances Of Poor And Near Poor Americans Age 50 And Older. Conducted for American Association of Retired Persons. Princeton, NJ: American Association of Retired Persons.

Pynoos, J. (1993). Toward a National Policy on Home Modification. Technology and Disability, 2(4), 1-8.

Pynoos, J., Cohen, E., Davis, L., & Bernhardt, S. (1987). Home Modifications: Improvements That Extend Independence. In Regnier, V., & Pynoos, J. (Eds.). Housing The Aged: Design Directives And Policy Considerations. New York: Elsevier Science Publishing Company, Inc.

Reschovsky, J.D., & Newman, S.J. (1990). Adaptations for Independent Living by Older Frail Households. The Gerontologist, 30(4), 543-551.

Struyk, R.J., & Katsura, H.M. (1985). Aging At Home: How The Elderly Adjust Their Housing Without Moving. Washington, DC: Urban Institute Project Report 3166-3.

Funding

American Association of Retired Persons. (1996). Understanding Senior Housing: Into the Next Century. Washington, DC: Author.

American Association of Retired Persons. (1995). Expanding Housing Choices for Older People, an AARP White House Conference on Aging Mini-Conference, Conference Papers and Recommendations. Washington, DC: Author.

Duncan, R.C. (1994). The Supply and Demand for Accessible Market-Based Housing. Chapel Hill, NC: Author.

Elkind, J. (1990). The Incidence of Disabilities in the United States. Human Factors, 32(4).

LaPlante, M.P., Hendershot, G.E., & Moss, A.J. (1992). Assistive Technology Devices and Home Accessibility Features: Prevalence, Payment, Need, and Trends. Advance Data, 217. Hyattsville, MD: Vital and Health Statistics of the Centers for Disease Control, National Center for Health Statistics.

LaPlante, M. (1993). Disability Statistics Abstract: Disability in the States- #6. Washington, D.C. National Institute of Disability and Rehabilitation Research.

Malizia, E., Duncan, R., & Reagan, J. (1993). Financing Home Accessibility Modifications. Raleigh, NC: Center for Universal Design.

McLeroy, K.R., Crump, C.E. (1994). Health Promotion and Disease Prevention: A Historical Perspective. Journal of the American Society on Aging, 18(1).

Mueller, J. (1990). "Real" Consumers Just Aren't Normal. The Journal of Consumer Marketing, 7(1).

National Council on Disability. (1996). Achieving Independence: The Challenge for the 21st Century. Washington, DC: Author.

National Resource and Policy Center on Housing and Long Term Care. (1991). National Directory of Home Modification/Repair Programs. Los Angeles: Andrus Gerontology Center.

National Resource and Policy Center on Housing and Long Term Care. (1996). Home Modification Resource Guide. Los Angeles: Andrus Gerontology Center.

North Carolina Assistive Technology Project. (1995). Guide to Funding Assistive Technology. Raleigh, NC: Author.

Pirkil, James J. (1994). Transgenerational Design: Products for an Aging Population. New York: Van Nostrand Rheinhold.

Pope/Tarlov (Eds.). (1991). Disability in America: Toward a National Agenda for Prevention. Institute of Medicine. National Academy Press.

United States Department of Agriculture. (1995). Guaranteed Rural Housing Loans. (GPO Publication No. 755-010/22522) Washington, DC: U.S. Government Printing Office.

United States Department of Agriculture. (1987). Home Ownership Loans. (FmHA Publication No. 977). Washington, DC: Farmers Home Administration.

United States Department of Health and Human Services. (1990). Task II: Federal Programs for Persons with Disabilities. Lexington, MA: McGraw-Hill.

United States Department of Health and Human Services. (1994). RED BOOK ON WORK INCENTIVES--A Summary Guide to Social Security and Supplemental Security Income Work Incentives for People With Disabilities. (SSA Publication No. 64-030, ICN 436900). Washington, DC: Social Security Administration.

United States Department of Health and Human Services. (1992). The Medicare 1992 Handbook. (HCFA Publication No. 10050). Washington, DC: Social Security Administration.

United States Department of Housing and Urban Development. (1993). Programs of HUD. (HUD Publication No. 214-PA (19)). Washington, DC: U.S. Government Printing Office.

United States Department of Housing and Urban Development. (1995). HUD Reinvention: From Blueprint to Action. Washington, DC: Author.

United States Department of Housing and Urban Development. (1994). Rehab a Home with HUD's 203(k). (HUD Publication No. 1220-H (2)). Washington, DC: U.S. Government Printing Office.

United States Department of Housing and Urban Development, Office of the Assistant Secretary for Fair Housing and Equal Opportunity. (1991). 24 CFR Chapter I, Final Fair Housing Accessibility Guidelines. (GPO Publication No. 389-642). Washington, DC: U.S. Government Printing Office.

United States Department of the Treasury, Internal Revenue Service. (1995). Publication 524, Tax Highlights for Persons with Disabilities. (GPO Publication No. 389-593). Washington, DC: U.S. Government Printing Office.

United States Department of the Treasury, Internal Revenue Service. (1995). Publication 907, Credit for the Elderly or the Disabled. (GPO Publication No. 389-593). Washington, DC: U.S. Government Printing Office.

United States Department of Veterans Affairs. (1991). Questions and Answers on Specially Adapted Housing and Special Housing Adaptations for Veterans. (VA Pamphlet No. 26-69-1). Washington, DC: U.S. Government Printing Office.

Zola, I. (1993). Disability Statistics, What We Count and What it Tells Us. Journal of Disability Policy Studies, 4(2).

Service Delivery

American Association of Retired Persons. (1992). Understanding Senior Housing for the 1990's. Washington, DC: Author.

Carp, F. (1994). "Assessing the Environment." In Lawton, M.P., & Teresi, J.A. (Eds.). Focus on Assessment Techniques, Annual Review of Gerontology and Geriatrics, 14:1994.

Edelstein, S. (1995). Federal Anti-discrimination Law and Housing for Frail Older Renters. Los Angeles, CA: National Resource and Policy Center on Housing and Long Term Care, Andrus Gerontology Center, University of Southern California.

Gaberlavage, G., & Forsythe, P. (1995). Home Repair and Modification: A Survey of City Programs. Washington, DC: Public Policy Institute, American Association of Retired Persons.

Gitlin, L., & Levine, R. (1992). Prescribing Adaptive Devices to the Elderly: Principles for Treatment in the Home. International Journal of Technology and Aging, 5(1), 107-120.

LaPlante, M.P., Hendershop, G.E., & Moss, A.J. (1992). Assistive Technology Devices and Home Accessibility Features: Prevalence, Payment, Need and Trends. Advance Data, 217. Hyattsville, MD: Vital and Health Statistics of the Centers for Disease Control, National Center for Health Statistics.

Liebig, P.S. (1995). State Units on Aging and Housing for the Elderly: Current Roles and Future Implications. Journal of Housing for the Elderly, 11(2), 67-84.

Manton, K., Corder, L., & Stallard, E. (1993). Changes in the Use of Personal Assistance and Special Equipment from 1982 to 1989: Results from the 1982 and 1989 NLTCs. The Gerontologist, 33(2), 168-176.

Myers, P. (1982). Aging in Place, Washington, DC: Conservation Foundation.

Norburn, J.E., Bernard, S.L., Konrad, T.R., Woomert, A., DeFries, G.H., Kalsbeek, W.D., Koch, G.G., & Ory, M.G. (1995). Self-care and Assistance from Others in Coping with Functional Status Limitations Among a National Sample of Older Adults. Journal of Gerontology Social Sciences, 50B(2), S101-S109.

Olsen, R., Ehrenkrantz, E., & Hutchings, B. (1993). Homes that help: Advice from caregivers for creating a supportive home. Newark, NJ: New Jersey Institute of Technology.

Pynoos, J. Public policy and aging in place: Identifying the problems and potential solutions. In Tilson, D. (Ed.). (1990). Aging in place: Supporting the frail elderly in residential environments (pp. 16-208). Glenview, IL: Scott, Foresman and Company.

Pynoos, J. (1992). Strategies for Home Modification and Repair, Generations, XVI (2), 21-25.

Pynoos, J. (1993). Toward a National Policy on Home Modification. Technology and Disability, 2(4), 1-8.

Pynoos, J., Cohen, E., & Lucas, C. (1988). The Caring Home Booklet: Environmental Coping Strategies for Alzheimer's Caregivers. Los Angeles: University of Southern California.

Pynoos, J., Liebig, P., Overton, J., & Calvert, E. The Delivery of Home Modification and Repair Services. In Lansbury, S. & Hyde, J. (Eds.). (1996). Staying put: Adapting the places instead of the people. Amityville, New York: Baywood Publishing, 173-192.

Steel, K., Musliner, M., & Berg, K. Assessment of the Home Environment. In Geriatric Assessment Technology: The State of the Art, Rubenstein, L.Z., Wieland, D., & Bernabei, R. (Eds.). (1996). (pp. 135-145).

Steinfeld, E., and Shea, S. (1993). Enabling home environments. Technology and Disability, 2(4). 69-79.

Stuyk, R.J., & Katsura, H.M. (1985). Aging at home: How the Elderly Adjust Their Housing Without Moving. Washington, DC: Urban Institute Project Report 3166-3.

Tideiksaar, R. (1987). Fall Prevention in the Home. Topics in Geriatric Rehabilitation, 3(1), 57- 64.

U.S. Department of Housing and Urban Development. (1979). Preliminary Evaluation Design for a Home Maintenance and Repair Demonstration for Low Income Elderly Homeowners, unpublished report. Washington, DC: Author.

Appendix B

SUMMARY OF HOME MODIFICATIONS

STRUCTURAL

- ♦ Stairs: Repairing or improving, adding hand rails, lighting
- ♦ Stairs: adding chair-lift, platform lift
- ♦ Elevator: adding an elevator
- ♦ Ramps: adding ramps or replacing stairs with ramps
- ♦ Doorways: widening doorway, adding offset hinge, removing door, changing latches and locksets
- ♦ Cabinets: lowering, replacing shelving with drawers or pull-out components, removing base cabinets to allow seated access, lowering or adding work surfaces
- ♦ Rooms: increasing space in rooms, adding rooms

PLUMBING FIXTURES

- ♦ Converting bathtub to shower or adding seated access to bathtub
- ♦ Toilet: adding elevated toilet seat or replacing conventional height for 17- to 18-inch high
- ♦ Sink: providing seated access by removing base cabinet and concealing pipes
- ♦ Faucets: changing to lever, use anti-scald mixing valve

ADDITION OF ASSISTIVE DEVICES

- ♦ Grab bars at bathtub, shower, toilet
- ♦ Bathing and toileting aids
- ♦ Bed pull-ups
- ♦ Lifts: portable, floor-mount, ceiling-mount
- ♦ Alarming and alerting devices for hearing impaired
- ♦ Alarming and alerting devices for visually impaired
- ♦ Assistive listening devices: small room amplification, personal listening, TV listening

SUMMARY OF HOME MODIFICATIONS, (CONT'D)

SAFETY

- ◆ Lighting: increasing light levels, adding remote access or automated control of lighting, improving control of lighting to reduce glare
- ◆ Flooring: removing obstacles from walkways, applying non-slip surfaces, removing and/or securing floor covering
- ◆ Smoke alarms: adding, obtaining alarm with carbon monoxide detection, obtaining alarm with visual indicator (strobe light) or with tactile indicator (bed shaker)
- ◆ Emergency Egress: adding escape route through portable ladders or chutes

SECURITY

- ◆ Personal Emergency Response System
- ◆ Home security system
- ◆ Home monitoring system
- ◆ Locks: adding or improving
- ◆ Lighting: motion detection, security lighting

Appendix C

A BLUEPRINT FOR ACTION:

The Second National Working Conference on Home Modifications Policy

April 22-23, 1996

Georgetown University Conference Center, Washington, DC

Sponsored by: The Home Modifications Policy Task Force

Coordinated by:

The Center for Universal Design

The American Association of Retired Persons

The University of Southern California, Andrus Gerontology Center

OPENING REMARKS

William Benson
Deputy Assistant Secretary
for the Administration on Aging
Department of Health and Human Services

PRESENTERS AND PANELISTS

Consumer Knowledge

Presenter: Margaret Wylde, ProMatura,
Oxford, MS

Panelists: Jim Mueller, J.L. Mueller, Inc.,
Chantilly, VA

David Oliver, Lowe's Home Safety Council,
North Wilkesboro, NC

Brian Sherry, GE Appliances, Louisville, KY
Eleanor Smith, Concrete Change, Atlanta, GA
Mary Yearns, Iowa State University, Ames, IA

Service Delivery

Presenter: Jon Pynoos, Andrus Gerontology
Center, Los Angeles, CA

Panelists: Alan Browne, Extended Home
Services, Northbrook, IL

Dan Kessler, BCIL, Birmingham, AL

Susan Klein, Philadelphia Corporation for
Aging, Philadelphia, PA

Shoshana Shamberg, Abilities Occupational
Therapy Services, Baltimore, MD

Funding

Presenter: Richard Duncan, Center for
Universal Design, Raleigh, NC

Panelists: Deborah Greenstein, Office of
Policy Development and Research,
HUD, Washington, DC

Bill Mitchell, Bill Mitchell and Associates,
Cornelia, GA

Ilene Rosenthal, Maryland State Unit on
Aging, Baltimore, MD

Diane Sprague, Minnesota Housing Finance
Agency, St. Paul, MN

Systems Change

Presenter: Jane Gay, Iowa Program on
Assistive Technology, Iowa City, IA

Panelists: Peter Dunn, Wilfred Laurier
University, Waterloo, Canada

Valerie Goodwin, Alpha One, Portland, ME

June Kailes, Disability Policy Consultant,
Playa del Ray, CA

Irma Tetzloff, Administration on Aging,
Washington, DC

AARP STAFF

Facilitators	Kathy Kines
	Cal Broughton
Recorder	Bronwyn Belling
Consultant	Ann Winchester
Registration/Coordination	Jennifer Leslie

Appendix D

A BLUEPRINT FOR ACTION:

The Second National Working Conference on Home Modifications Policy

PARTICIPANTS

Sandy Baldwin
NC Assistive Technology Project
2313 Executive Park Circle
Greenville, NC 27834
919-830-8575 (voice)
919-830-8576 (fax)
E-Mail: ncatp@abaco.coastalnet.com

Allan Browne
Extended Home Living Services, Inc.
9820 Capitol Drive
Wheeling, IL 60090
847-215-9490 (voice)
847-215-9632 (fax)

Marcus Barnes
Adaptive Design & Construction
9407 52nd Avenue
College Park, MD 20740
301-345-7176 (voice & fax)

Bill Carmichael
National Association of The Remodeling
Industry
4900 Seminary Road Suite 320
Alexandria, VA 22311
703-575-1100 (voice)
703-575-1121 (fax)
E-Mail: NARlexec@aol.com

Brian Bixler
Department of Veterans Affairs, 262A
Specially Adapted Housing
810 Vermont Avenue, NW
Washington, DC 20420-0001
202-273-7355 (voice)
202-275-3523 (fax)

Jim Costello
Costello Design Group
1215 Lakewood Street
Pittsburgh, PA 15220
412-922-3199 (voice & fax)
E-Mail: ACCESS4ALL@aol.com

Todd Brickhouse
Hadley-Brickhouse
Accessible Design Assoc., Inc.
150 Herricks Road
Mineola, NY 11501
516-294-0555 (voice)
516-294-1976 (fax)
E-Mail: HBADA@i-2000.com

Irma Dobkin
Irma Dobkin Interiors, Ltd.
8810 Fernwood Road
Bethesda, MD 20817-3014
301-469-4944 (voice)
301-365-1998 (fax)
E-Mail: irma.dobkin@asid.noli.com

Jackie Dobson
Solutions for Accessibility
167 Union Avenue
Framingham, MA 01701
508-872-5498 (voice & fax)
E-Mail: AccessSols@aol.com

Joan Eisenberg, ASID
JME Consulting
2106 Burdock Street
Baltimore, MD 21209
410-486-0017 (voice & fax)
E-Mail: jmeisenb@mail.bcpl.lib.md.us

Mary Jean Duckett
Health Care Finance Administration
Room C4-12-03
7500 Security Boulevard
Baltimore, MD 21244
410-786-3294 (voice)
410-786-3252 (fax)
E-Mail: mduckett@hcfa.gov

Larry Field
The Accessibility Alliance
222A 7th Avenue
Wilmington, DE 19805
302-378-1600 (voice)
E-Mail: larryfield@juno.com

Richard Duncan
Center for Universal Design
NCSU - Box 8613
Raleigh, NC 27695-8613
919-515-3082 (voice)
919-515-3023 (fax)
E-Mail: rc_duncan@ncsu.edu

Jane Gay
Iowa Program for Assistive Technology
University Hospital School
Iowa City, IA 52242-1011
319-356-4463 (voice)
319-356-8284 (fax)
E-Mail: jane-gay@uiowa.edu

Peter Dunn
Wilfred Laurier University
75 University Avenue West
Waterloo, ONTARIO
Canada N2L3C5
519-884-1970 ext. 2473 (voice)
519-888-9732 (fax)
E-Mail: pdunn@mach1.wlu.ca

Valerie Goodwin
Alpha One
127 Main Street
South Portland, ME 04106
207-767-2189 (voice)
207-799-8346 (fax)
E-Mail: valerie_goodwin@alpha.one.org

Debbie Greenstein
U.S. Department of HUD
Policy Development Division
451 7th Street, SW, Room 8120
Washington, DC 20410
202-708-1520 (voice)
202-708-5536 (fax)
E-Mail: Deborah_Greenstein
@HUD.GOV

Leon Harper
American Association of Retired Persons
601 E Street, NW
Washington, DC 20049
202-434-6030 (voice)
202-434-6466 (fax)
E-Mail: lharper@aarp.org

Marcia Harris
KraftMaid Cabinetry, Inc.
Marketing & Training
P.O. Box 1055
Middlefield, OH 44062
216-632-5333 ext. 194 (voice)
216-632-5648 (fax)
E-Mail: marcia@kraftmaid.com

Joy Horvath
Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016-2899
202-752-4810 (voice)
202-752-3798 (fax)

Patty Johnson
Christmas in April, USA
1536 16th Street, NW
Washington, DC 20036-1402
202-483-9083 (voice)
202-483-9081 (fax)
E-Mail: cinausa@erots.com

June Kailes
Policy Consultants
6201 Ocean Front, Suite 2
Playa del Rey, CA 90293-7556
310-821-7080 (voice)
310-827-0269 (fax)
E-Mail: jkailes@tsbbs02.tnet.com

Dan Kessler
Birmingham Independent Living Center
206 13th Street, S
Birmingham, AL 35233
205-251-2223 (voice)
205-251-0605 (fax)
E-Mail: dkessler@tsbbs02.tnet.com

Susan Klein
Philadelphia Corporation for Aging
642 North Broad Street
Philadelphia, PA 19130-3409
215-765-9000 ext. 5217 (voice)
215-765-9066 (fax)
E-Mail: Sklein@pcaphl.com

Patricia Laird
Administration on Developmental Disabilities
200 Independence, SW, Rm 321-D
Washington, DC 20201
202-690-7447 (voice)
202-690-6904 (fax)
E-Mail: PLAIRD@ACF.DHHS.GOV

Anne Morris
AOTA
4720 Montgomery Lane
Bethesda, MD 20842-1220
301-652-6611 ext. 2049 (voice)
301-652-7711 (fax)
E-Mail: annem@aota.org

Phyllis B. Madachy
Howard County Office on Aging
6751 Columbia Gateway Drive
Columbia, MD 21046
410-313-6410 (voice)
410-313-6424 (fax)
E-Mail: dmadachy@aol.com

Jim Mueller
J.L. Mueller Inc.
4717 Walney Knoll Court
Chantilly, VA 22301-2301
703-222-5808 (voice)
703-222-3327 (fax)
E-Mail: jlminc@nicom.com

Rick Millard
Access Unlimited
Division of Lewis Supply Co.
6526 Horsepen Road
Richmond, VA 23226
804-285-3674 (voice)
804-285-3677 (fax)

David Oliver
Lowe's Home Safety Council
P.O. Box 1111
North Wilkesboro, NC 28656
910-651-4976 (voice)
910-651-2409 (fax)
Email: lowesdjo@ad.com

William Mitchell
G.W. Mitchell Associates
P.O. Box 103
Cornelia, GA 30531
706-776-8575 (voice)
706-776-9598 (Fax)
E-Mail: gwmitchell@stc.net

Richard Smith Overman
North Carolina Housing Finance Agency
P.O. Box 28066
Raleigh, NC 27611
919-571-4914
919-781-5623

Jake Pauls
Building Use and Safety Institute
12507 Winexburg Manor Drive, #201
Silver Spring, MD 20906-3442
301-933-5275 (voice)
301-933-5541 (fax)
E-Mail: bldguse@aol.com

Gail Pearson
1301 Providence Terrace
McLean, VA 22101
703-734-8394 (voice)

Mary Jo Peterson
Design Consultant
3 Sunset Cove Road
Brookfield, CT 06804
203-775-4763
203-740-2333
E-Mail: MJPeterson@aol.com

Pat Puckett
Statewide Independent Living
Council of GA
3125 Presidential parkway, Suite 200
Atlanta, GA 30340
770-452-9601 (voice)
770-452-9928 (fax)
Email: silcga@mindspring.com

Jon Pynoos
National Resource and Policy Center
Center for Housing and Supportive Services
USC - Andrus Gerontology Center
Los Angeles, CA 90089-0191
213-740-1364 (voice)
213-740-8241 (fax)
E-Mail: jpynoos@aol.com *or*
natresctr@usc.edu

Jan Reagan
Center for Universal Design
Box 8613 NC State University
Raleigh, NC 27695-8613
919-515-3082 (voice)
919-515-3023 (fax)
E-Mail: Jan_Reagan@ncsu.edu

Ilene Rosenthal
MD State Unit on Aging
301 West Preston Street, Room 1004
Baltimore, MD 21201
410-225-1100 (voice)
410-333-7943 (fax)
E-Mail: iwr@ooa.mop.md.gov

Alan Rothman
US Dept. of Housing and Urban
Development
451 7th Street, SW, Room 8132
Washington, DC 20410
202-708-4370 ext. 139 (voice)
202-619-8760 (fax)
E-Mail: ALAN_J._ROTHMAN@HUD.GOV

Carol Schaaake
NAHB Research Center
400 Prince George's Center Boulevard
Upper Marlboro, MD 20774-8731
301-249-4000 (voice)
301-249-0305 (fax)
E-Mail: cschaake@nahbrc.org

Shoshana Shamberg
Abilities Occupational Therapy Services
3309 W. Strathmore Avenue
Baltimore, MD 21215
410-358-7269 (voice)
410-358-6454 (fax)
E-Mail: shamber@idt.net

Aaron Shamberg
Abilities Occupational Therapy Services
3309 W. Strathmore Avenue
Baltimore, MD 21215
410-358-7269 (voice)
410-358-6454 (fax)
E-Mail: Asamberg@aol.com

Scott Shea
Center for Inclusive Design
and Environmental Access
School of Architecture and Planning
SUNY Buffalo
Buffalo, NY 14214-3087
716-829-3485 ext. 330 (voice)
716-829-3861 (fax)
E-Mail: shea@arch.buffalo.edu

Brian Sherry
GE Appliances, AP4-291
Louisville, KY 40225
502-452-3071 (voice)
502-454-3692 (fax)
E-Mail: L112865@GEASSW.APPLGE.COM

Katie Smith Sloan
American Association of Retired Persons
Consumer Affairs
601 E Street, NW
Washington, DC 20049
202-434-6040 (voice)
202-434-6466 (fax)
Email: ksloan@aarp.org

Jill Spokojny, OTR
VOCA Rehabilitation
5600 W. Maple Road
Suite A-100
West Bloomfield, MI 48322
810-737-2990 (voice)
810-737-9620 (fax)
E-Mail: otjill@aol.com

Diane Sprague
Minnesota Housing Finance Agency
400 Sibley Street, #300
St. Paul, MN 55101
612-296-2257 (voice)
612-296-8139 (fax)
E-Mail: diane.sprague
@marge.mhfa.state.mn.us

Edward Steinfeld
Center for Inclusive Design
and Environmental Access
School of Architecture & Planning
SUNY Buffalo
Buffalo, NY 14214-3087
716-829-3483 ext. 327 (voice)
716-829-3256 (fax)
E-Mail: arced@arch.buffalo.edu

Howard Sussman
Renaissance Custom Builders
908 Town and Country Boulevard, #130
Houston, TX 77024
713-984-7650 (voice)
713-984-7576 (fax)

Louis Tennenbaum
Louis Group
Access Remodeling
10715 Rock Run Drive
Potomac, MD 20854
301-983-0131 (voice)
301-983-9698 (fax)
E-Mail: HOMEMODS@aol.com

Irma Tetzloff
Administration on Aging
Department of Health and Human Services
330 Independence Avenue, SW
Washington, DC 20201
202-619-3268 (voice)
E-Mail: IrmaT@Ban-Gate.AOA.DHHS.gov

Donn C. Thompson
Extended Home Living
9820 Capitol Drive
Wheeling, IL 60090
847-215-9490 (voice)
847-215-9632 (fax)

Steve Timpson
The Home Depot
5463 West Waters Drive
Tampa, FL 33607-5903
813-243-2017 (voice)
813-243-2077 (fax)
E-Mail: Stimpson@homedepot.com

Judy Walton
NC Division of Medical Assistance
1985 Umstead Drive
PO Box 29529-0529
Raleigh, NC 27626
919-733-3945 (voice)
919-733-2796 (fax)

Bill Wasch
WK Wasch Associates
150 Coleman Road
Middletown, CT 06457
860-346-2967 (voice)
860-346-8967 (fax)
E-Mail: WWASCH@wesleyan.edu

Sharon Wright
Harmarville Rehab/Environmental Access
Services
P.O. Box 11460
Guys Run Road
Pittsburgh, PA 15238
412-826-2739 (voice)

Margaret Wylde
ProMatura
Institute for Technology Development
428 North Lamar Boulevard
Oxford, MS 38655
601-234-0158 (voice)
601-234-0288 (fax)
E-Mail: mwylde@promatura.com

Joseph L. Wysocki
US Department of Agriculture
Education and Extension Service
Aerospace, 8th Floor
Washington, DC 20250-0900
202-401-4980 (voice)
202-401-1706 (fax)
E-Mail: jwysocki@reeusda.gov

Mary Yearns
Iowa State University
62 LeBaron Hall
Ames, IA 50011
515-294-8520 (voice)
515-294-1908 (fax)

E-Mail: yearns@iastate.edu

NOTES



The background of the entire page is a detailed architectural floor plan of a building. It shows a complex arrangement of rooms, corridors, and service areas. Rooms are labeled with numbers such as 127, 210, 110, 116, 1811, 1211, 24, 28, 23, 82, and 87. The plan includes architectural details like doors, windows, and furniture placement. The drawing is in black lines on a light-colored background.

NC STATE UNIVERSITY

The Center for Universal Design
School of Design
North Carolina State University
Box 8613
Raleigh, NC 27695-8613
919 515-3082 Voice and TTY
919 515-3023 FAX
800 647-6777 Information Request Line
cud@ncsu.edu