

Universal Design: Applying the Principles in Park Settings

PARTICIPANT GUIDE

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THE PRINCIPLES OF UNIVERSAL DESIGN

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, and Gregg Vanderheiden. Major funding provided by: The National Institute on Disability and Rehabilitation Research, U.S. Department of Education.

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 here, 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. Provisions for privacy, security, and safety should be 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. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize "legibility" of essential information.
- 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4e. 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.

5. What are some examples of cost benefits to the use of Universal Design?

6. Describe how one or several of the Principles of Universal Design could be applied to a project you are currently working on.

Examples in Park Settings

| Accessible Design | Universal Design |
|-------------------|------------------|
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Universal Design Resources

National Center on Accessibility
www.ncaonline.org

Adaptive Environments
www.adaptiveenvironments.org

Center for Universal Design
www.design.ncsu.edu/cud

Museum of Science – Boston, Universal Design in Exhibit Planning
www.mos.org/exhibitdevelopment/access/index.html

Smithsonian Guidelines for Accessible Exhibition Design
www.si.edu/opa/accessibility/exdesign/start.htm

Universal Design Education Project
www.udeducation.org

Universal Designers & Consultants
www.universaldesign.com

Preiser, W. and E. Ostroff, Eds. (2001). *Universal Design Handbook*. New York: McGraw Hill.

Leibrock, C. and J. Terry. (1999). *Beautiful Universal Design: A Visual Guide*. New York: John Wiley & Sons.

Story, M.F., Mueller, J.L. & R. Mace. (1998). *The Universal Design File: Designing for People of All Ages and Abilities*. Raleigh: The Center for Universal Design, NCSU.

ABOUT THE INSTRUCTORS

Ray Bloomer

Director of Education & Technical Assistance

National Center on Accessibility

Ray Bloomer is the NCA Director of Education and Technical Assistance. Ray has served as a Park Ranger/Interpreter at Independence National Historic Park in Philadelphia, Accessibility Coordinator at Boston National Historic Park, Regional Access Coordinator for the NPS North Atlantic Regional Office and Chief of Visitor Services and Interpretation at Sagamore Hill National Historic Site. While working as the Regional Accessibility Specialist, Ray was actively involved from 1983 to 1992 with the Statue of Liberty/Ellis Island Restoration Project. Following the project, he was presented with a Special Achievement Award from the Disabled American Veterans, for the successful accessibility efforts at the Statue of Liberty and Ellis Island. Ray has received numerous awards from the Department of the Interior and the National Park Service including the Secretary of the Department of the Interior's Equal Opportunity Award for continued efforts towards increasing opportunities for employees and visitors in the National Park Service. In 1992 Ray was detailed to the National Center on Accessibility and after three years the assignment was permanently duty stationed at NCA. He has served as a consultant to national projects including the Museum Task Force funded by the National Trust for Historic Preservation. Most recently, Ray served on the US Access Board's Regulatory Negotiation Committee for Developed Outdoor Areas.

Valerie Fletcher

Executive Director

Adaptive Environments

Valerie Fletcher has been the Executive Director of Adaptive Environments since the beginning of 1998. Valerie currently oversees projects ranging from universal design at the urban scale, in public transit and affordable housing as well as assorted consulting projects. She is Co-Chair of Designing for the 21st Century III and teaches, speaks and writes extensively on human centered design. She is the Principal Investigator for Adaptive Environments' NIDRR-funded project, the New England ADA and Accessible Information Technology Center. Fletcher's career has been divided between design and public mental health. She is the former Deputy Commissioner of the Massachusetts Department of Mental Health where she directed the reinvestment of \$70M in institutional spending to new community programs through a landmark community planning process. She has a masters in ethics in public policy from Harvard University. Fletcher lives in Boston with her husband, Mark, a sculptor and preservation specialist.

David Park

Accessibility Program Coordinator

National Park Service

As the NPS Accessibility Program Coordinator, Dave is primarily responsible for developing, monitoring, and coordinating efforts of the National Park Service to provide the highest level of accessibility for people with disabilities as is practicable. He has

been in this position since 1980. His efforts have included a nationwide program in policy development, in service education, technical assistance, compliance enforcement, and outreach to disabled citizen groups. Dave has been involved professionally in the area of park and recreation accessibility since 1960 and has served in numerous national leadership positions during that time. From 1992 to 1994 he served as one of the members of the National Advisory Committee on Accessible Recreation Facilities, and chaired the subcommittee on outdoor facilities. From 1996 to 1999 he represented NPS and the Department of the Interior on the U.S. Access Board's Regulatory Negotiating Committee on Proposed Standards for Accessible Outdoor Recreation Facilities. From 2001 to the present he has represented the DOI as the official liaison to the U.S. Access Board, and has recently been appointed to serve as the Co-Chair of the Ad-Hoc Sub-Committee charged with the development of the final proposed rule for Outdoor Developed Areas. Dave holds a Masters Degree from the University of North Carolina and has done post masters work at George Washington University.

Jennifer Skulski

Director of Marketing & Special Projects

National Center on Accessibility

Jennifer Skulski is Director of Marketing and Special Projects for NCA. Over the last thirteen years, Jennifer has provided technical assistance and training to the private sector, state and local governments, advocates and consumers on compliance with the Americans with Disabilities Act. Jennifer has previously served as the Director of Education for NCA and Associate Director for the Great Lakes Disability and Business Technical Assistance Center, one of the 10 centers (DBTAC's) throughout the United States, providing technical assistance and training on the ADA. Jennifer has diverse expertise in ADA employment regulations, Title 2 implementation, accessibility standards, universal design, access to playgrounds and outdoor recreation environments. She has also served as ADA Coordinator of the Rockford (Illinois) Park District. There, she trained park district staff on accessibility issues, assisted the municipality with prioritizing accessibility improvements, and facilitated the District's barrier removal citizens advisory committee. Jennifer is a Certified Playground Safety Inspector and a member of the ASTM F0.8 Committee on Playground Surfaces. Jennifer is a graduate of Indiana University.