THE PRINCIPLES OF **UNIVERSAL DESIGN**

Version 2.0 (4/1/97)

1 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.

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

2 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.

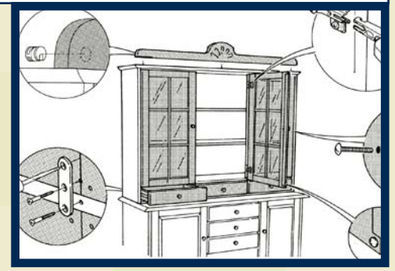
2d. Provide adaptability to the user's pace.

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

3 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.

EXAMPLES

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

4 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.

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

5 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.

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

6 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.

EXAMPLES

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

7 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 adaptable space for the use of assistive devices or personal assistance.

EXAMPLES

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

THE PRINCIPLES WERE COMPILED BY ADVOCATES OF UNIVERSAL DESIGN, IN ALPHABETICAL ORDER:

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NOTE:

The Principles of Universal Design are not intended to constitute all criteria for good design, only universally usable design. Certainly, other factors are important, such as aesthetics, cost, safety, gender and cultural appropriateness, and these aspects must also be taken into consideration when designing.

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THE PRINCIPLES OF **UNIVERSAL DESIGN**

Version 2.0 (4/1/97)

UNIVERSAL DESIGN: The design of products and environments to be usable by all people, to the greatest extent possible, without 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.

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

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