Universal Design Principles

Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need of adaptation or specialized design. Universal design is relevant to a wide range of design disciplines including the design of environments, products and communications. A working group of architects, product designers, and environmental design researchers has identified seven universal design principles for use in evaluating existing designs, guiding the design process, and educating both designers and consumers about characteristics of more usable products and environments. The seven principles are presented here in the following format: name of 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 principles. (Note: all guidelines may not be relevant to all designs.)

Principle One: Equitable Use

The design is useful and marketable to any group of users.

Guidelines:
- Provide the same means of use for all users: identical whenever possible; equivalent when not.
- Avoid segregating or stigmatizing any users.
- Provisions for privacy, security, and safety should be equally available to all users.

Principle Two: Flexibility in Use

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

- Provide choice in methods of use.
- Accommodate right - or left-handed access and use.
- Facilitate the user's accuracy and precision.
- 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:

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting for sequential actions.

Principle Four: Perceptible Information

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

! Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
! Provide adequate contrast between essential information and its surroundings.
! Maximize "legibility" of essential information in all sensory modalities.
! Differentiate elements in ways that can be described (i.e. make it easy to give instructions or directions).
! 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:

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

Principle Six: Low Physical Effort

The design can be used effectively and comfortably and with minimum of fatigue.
Guidelines:

! Allow user to maintain a neutral body position.
! Use reasonable operating forces.
! Minimize repetitive actions.
! 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:

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

The principles of universal design in no way compromise 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 should be taken into consideration as well.

Principles on universal design courtesy of the Center of Universal Design in North Carolina.

Whatever you **build** in your community...
make it **accessible** for everyone!