

# UNIVERSAL DESIGN IN INTERIOR DESIGN

Shirley Confino-Rehder CID, affil AIA

Shirley Confino Interiors

757-6245-2389 FAX 757-625-7003

scr@univdesign.com

www.univdesign.com

## ABSTRACT

Universal Design is quickly becoming an integrated practice, internationally, in interior and architectural design. This paper will demonstrate how the same principles applied in those fields can be applied to computer interaction. Specific applications, challenges and solutions are discussed. This paper will show that the nature of computer human interaction can be enhanced by the application of Universal Design and practitioners of CHI can be the catalysts for creating a level playing field in the use of computer technology for all.

## Keywords

Universal Design concepts, Environmental barriers, aging population, disabilities, aging in place, · adaptability, ADA, FHA

## INTRODUCTION

Universal Design is a concept that is applied to designing of anything or any place that affects people. The term is now recognized and accepted internationally as a framework for good design. There are many theories regarding its basic principles. Primarily, Universal Design addresses safety, facility in use, understanding and redoing, adaptability, feasibility, marketability and profitability. It does not address everyone's ability. Nothing can. But it does level the playing field for more people.

## WHAT IS UNIVERSAL DESIGN?

Universal Design in architectural and interior design addresses:

- Environmental barriers and their impact in today's society.
- The growing change in our aging population and increased survival of people with disabilities.
- The desire to age in place and remain independent.
- Safety, facility in use and understanding.
- Adaptability
- Financial feasibility and affordability
- Marketability
- Profitability.

The Japanese have a saying, if you design an environment for children then you are designing for everyone. This culture has become the leading edge in Universal Design.

## THE PRACTICE OF UNIVERSAL DESIGN

A number of processes need to be in place to facilitate the practice of universal design. In America we have the Americans with Disabilities Act (ADA) and the Fair Housing Guidelines (FHA). These are guidelines, or scoping, of details to assure accessibility and adaptability for commercial buildings (ADA) and multiple family houses with four or more units (FHA). Although we do not have a national guideline for single family homes, they are gradually being added to state and local building codes. Until changes in building guidelines are nationally adopted, techniques and methods used to introduce Universal Design are dependent on sensitivity, the demands of the consumer and creating a new paradigm for design.

Techniques used to create the understanding and demand of Universal Design concepts are:

- Educating people through real or simulated personal experiences of disabilities.
- Educating the students of design to create sensitivity and to understand the intent.
- Educating the contractor and sub-contractors so they too can understand the intent.
- Educating the fabricator and the financial backers of the increase in market potential, thereby increasing profit potential.
- Educating the consumer so they will be empowered to demand what is best for them.
- Educating the politicians of the need to create environments that encourage independence. This increases tax bases.

By broadening the base of support you broaden the base of supporters. By understanding that everyone is involved, everyone will benefit.

## TECHNIQUES AND METHODS USED

In my practice of exterior and interior design I apply various methods of persuasion to meet my goals of including Universal Design concepts:

- Language - Using the common language of the people I am talking to. The plumber, the carpenter, the architect, the banker and the consumer all speak differently to get their point across. I have trained myself to address people in their language to get my point across.

- Silence - Sometimes not saying anything is the best way to get what I want.
- Common Sense - Explaining changes in specifications to meet my goals by using common sense never fails.
- Using positive words rather than words that can create a negative reaction, such as "walkway" instead of "ramp", usually resolves issues of "different" detailing.
- Mediation - This method of negotiation when there are problems empowers everyone involved to make final decisions without going to court.

I have found that it is easier to sensitize the professionals around you to the realities of human needs than enforce new codes and restrictions. This usually resolves into a more supportive system.

### **UD AND HUMAN COMPUTER INTERACTION**

Introducing new concepts are very difficult. When the "Smart House" (a home filled with computer controls) was introduced, it was shunned by people with and without disabilities because of its cost. People were blind to its potential. Only the innovators and the computer - savvy saw the possibilities.

Look what has happened in the average home today: (in part)

- Computer controlled security systems.
- Computer controlled heating, and electrical, and water dispenser systems.
- Computer controlled robots, and service "animals".
- Computer rooms with computers set up for multigenerational families.
- Installation of electronic mail is almost as commonplace as cable TV.

All of this technology, and more, that was non-existent twenty years ago is now available, affordable, consumer friendly, seamless in design, and still at the very beginning of invention. Improved forms of communication results in a more educated, independent population. User friendly computer communications can open the world of information and employment to all people. In many cases it can be the only means of communications.

### **PERSONAL EXPERIENCE AND CHALLENGE:**

Retained by a woman suffering from paraplegia from post-polio syndrome with the prognosis of quadriplegia, my assignment was to introduce systems and designs that would alleviate any excess use of her muscles. She lived alone and had a part-time personal assistant. Her goal was to stay at home for as long as possible, knowing that assistive living would take away her independence and her dignity. Her only concerns were not making a public announcement in her neighborhood of her need for a ramp and being able to prepare a turkey for Thanksgiving dinner

for her family. After surveying her home my main priorities were:

1. Replacing a ramp located in the rear of the house, that was too steep and impossible to use in inclement weather,
2. Redesigning her bathroom so she can retain the ability to attend to her own hygiene,
3. Redesigning her kitchen to eliminate cabinet and appliance obstacles that prevented her from cooking for herself.
4. Redesigning her closet so she could reach her clothing and select what she was going to wear herself.

The resulting specifications were:

1. Entry: Rerelandsaping the front of the house, adding a bermed "walkway", (a gently sloping walkway surrounded by low plants), leading onto a large covered porch and replacing the front door with an door that had an electronic opening and locking device.

2. Bathroom:

a. Removal of bathtub and the installation of a roll-in shower, featuring a remote controlled shower unit that had capabilities to preset the temperature of the water, dispense body soap and shampoo, as well as a preset rinse and drying cycle.

b. The addition of an automatic bidet to her existing water closet that featured the dispensing of warm water and soap and had drying capabilities,

c. Redesigning her lavatory cabinet and replacing her faucet with an automatic water and soap dispenser.

3. Kitchen:

a. Redesign of some cabinets for easier access to storage and better traffic pattern,

b. Exchange the top freezer-refrigerator for a side-by-side

4. Clothes closet:

a. Widening her doorway into the closet, lowering her shelves and clothes rods.

### **The Challenge:**

After accepting the plans a contractor, known for his work on accessibility adaptations, was called in to price out the project. After reviewing the plans and specifications he declared that it was impossible to do and offered her an alternative plan. She released me from my contract, and hired him. I now have pictures of her new ramp in the front of her home that measures at least fifty feet. I do not know what happened in the interior space.

Research for the right products are as easy as using Netscape, or any other search engine, and typing in the question. There is so much available to make living easier. The challenges are getting the ideas implemented. Educating everyone on a project is a major problem when

ego, "shoulds" and traditions override the ability to change paradigms.

#### **OPPORTUNITIES OFFERED BY UD**

I am as smart as my computer and my ability to use it. A major challenge today for the designer is the implementation. It is educating everyone around the project so it can be done the right way, not his or her way. If we can introduce Universal Design concepts in single family homes, so many people can go back into a home environment instead of a nursing home when recovering from an injury or surgery. If we can write into law Universal Design concepts or encourage implementation without a change in law, the housing market will expand to meet the needs of a larger market. The government is now offering large incentives to create accessible, affordable housing. Why aren't more people taking advantage of it? With the guidelines of ADA and FHA being enforced, why are there so many lawsuits in the courts pertaining to accessibility?

People don't like change. But change is inevitable. That is progress. Universal Design offers the challenge of using creativity to change paradigms, to eliminate standards that no longer work, to create environments that encourage people to age in place, be more independent and to have the ability to integrate into society. Architects and designers have to take up the challenges that changing global profiles have presented and create a more humane environment so more people can take advantage of what this wonderful world has to offer.

#### **INSIGHTS FOR HCI**

Opportunities to create friendlier and more accessible computer systems, technology, and software are no different than in any other discipline. It is such a young industry and even now, in its infancy, it has made a major impact on every ones lives.

The creation of software that is user friendly has made distant learning possible for people that can't leave their homes easily. Electronic mail has opened the doors to the whole world just by flicking a switch.

In Jerusalem, Israel a central communication center is able to have daily contact with more than 16,000 elderly citizens just by touching a wristband. Their vital statistics are on file in this system and can easily be accessed if there is a problem.

A client of mine is a retinologist and has performed long distance surgery by using computers and video communications. People with limited abilities can now access their computers by using their eyes, or breath, or brainwaves.

My husband's doctoral thesis is about information retrieval for the future, using "scouts" to perform simultaneous search for information to speed up retrieval. Imagine what that will do for research in the future.

Addressing issues of human frailties and the human factor is just another step towards creating unlimited possibilities for many people. Living can be easier, healthier, and more independent through the use of computers. Look how far it has come in such a short period of time. Imagine what could happen if Universal Design concepts are applied to future innovations in computer technology.

#### **CONCLUSION**

I firmly believe that the innate nature of people passionately involved in computer research is motivated by the endless possibilities that only they can foresee. Unlike the professions that continually go by the book, computer researchers write and then quickly rewrite the books, breaking all the paradigms that exist. Every industry, every profession and every life could be affected.

Anything is possible if we all put our minds to it. All we have to do is understand our challenges and responsibilities, use our resources, and apply Universal Design concepts for our answers.