The Case for Universal Design

If You Can’t Use It, It’s Just Art

by James Mueller

Successful design for human use is a creative compromise between utility and aesthetics, between engineering and art. This is what differentiates design from pure art and makes design a unique challenge with no single solution. A given design may be successful because its aesthetic virtues overshadow limited utility. Conversely, its aesthetic faults may be overlooked because of its usefulness. A classic sports car and a cargo truck are each successful vehicle designs, but hardly identical.

Beauty, as the saying goes, is in the eye of the beholder. Although few users will be able to define beauty, they believe they will know it when they see it. And it is safe to say that they will not agree. But without utility, design is—at best—pure art. At worst, it can be worthless, even dangerous, to the user.

Struggling to open a package, read a label, or operate a household appliance has probably caused everyone at some time to wonder for whom a particular product was designed. With age or disability, this question arises more frequently as even simple tasks seem to become increasingly impossible when using tools or appliances seemingly designed for someone other than the user.

Who then are the buildings and products of the world designed for? Presumably the majority of the population—but is this really true? Do designers really know and care who they’re designing for? And how do they learn about the users?

Design Education: VCRs of the Gods?

Like other art students, most design students begin their education in the study of classical art and architecture. Literally the foundation for later studies, these classical examples instill a sense of human proportion which is based not on “real” humans, but on god-like ideals. It seems that no mere mortals, let alone mortals with mobility limitations, were ever expected at the Acropolis. Michelangelo was neither as tall nor as perfectly proportioned as his David. Instilled with these models of classical beauty, designers have understandable difficulty knowing for whom they are designing.

We should all be relieved, as most students are, that design education does not end with the study of Greek and Roman art. Many schools incorporate modern human factors in the design curriculum to better prepare students to design for “real” people. But, which “real” people and which human factors? The basis for these courses offers another insight into who too many designers design for.
In pursuit of more effective weaponry during World War II, the study of human factors led to comprehensive design standards for aircraft, vehicles and guns. After the war, this research continued and established a formidable body of knowledge about human users. Unfortunately, the population studied included only soldiers—primarily physically fit, caucasian males—not the majority of the population, either then or now.

The widespread use of this military research data in design education has assured that environments, products and other designed objects are well-suited only to young, fit, caucasian males. Everyone else must adapt as best they can. An ironic result is that the soldiers measured in this 1940’s research are now elders who, like millions of others, are struggling to adapt to a world designed for who they were, rather than who they are.

Adapting to Designers’ Handicaps

Designers instilled with a classical sense of human form and a military sense of human abilities must overcome their own handicaps (in the true sense of the word) as well as those of contractors, engineers, marketers and others involved in the creation of a new building or product. Small wonder that so much of the built environment fails to accommodate human users.

But the perseverance of the human species, like any biological group, is due to adaptability. Humans are capable of adapting to their environment, even changing the environment if necessary, and designers often count on this adaptability in considering the limits of what they are designing. The result is the user adapting to a design, rather than the other way round.

Of course, this presents little problem to the young, fit, caucasian male. Those with slightly different abilities find adapting to the limitations of the design irritating, but possible. Others have greater difficulty and must either risk injury or derive limited use from the design. Still others cannot adapt and must depend on human assistance rather than function independently.

Regardless of whether we consider ourselves disabled, our needs are not so radically different in human factors terms. Increasing the size and contrast of labelling may be essential for a user with a serious visual limitation, but it is certainly convenient for others as well. It may be necessary to change an appliance control knob to a lever for a user with arthritis, but users with their hands full also benefit from the ease of operation. The difference in need is often simply one of degree.

A Better Idea: Universal Design

For those unable to adapt, an entire industry of “assistive technology” has developed to bridge the gap between the designer’s concept of the ideal user’s abilities and those of real users (not the “average” people portrayed in advertising). Though some of this assistive technology is quite useful, much of it is excessively expensive and unattractive, due to the minimal resources available for design development and production. Such products fail because their stigma exceeds their utility, focusing attention on the user’s limitations, rather than his or her abilities. Why should we need assistive technology to use something that is supposed to have been designed for us?

Integrating the needs of very large and very small, very young and very old, very disabled and able-bodied people is a practical and economically attractive design goal. This is the concept called universal design, and it is rapidly becoming an essential part of every designer’s vocabulary as changing demographics and global competition fuel the search for new markets. The more universally usable a mass-marketed product is, the more likely it is to sell.

The Three “ilities” of Design

Products can be made more useful to more people in a variety of ways:

• Designing in flexibility of operation so an amputee, a left-handed person or a child can use it as conveniently as an able-bodied, right-handed adult