

# Going Beyond

Thinking Principles

Welcome Available

# Design

## What Does Universal Design Look Like?

Population Particular

# Information

Environment

Available

# Three-dimensional

Museum



## Without a doubt, universal design and accessibility impact the exhibitions and public programs that museums produce. But how do you integrate those principles into your exhibits and programs?

AAM hosted a webinar (“Universal Design: Beyond the Americans with Disabilities Act”) in collaboration with Smithsonian Affiliations—and made possible through the generosity of the Smithsonian Women’s Committee—in October 2010 to address this important question. Offering their insights were Valerie Fletcher, executive director, Institute for Human Centered Design, Boston; Betty Siegel, director of accessibility, John F. Kennedy Center for the Performing Arts, Washington, D.C.; and Ray Bloomer, director of education and technical assistance, National Center on Accessibility, Indiana University, Bloomington. In the adaptation that follows, they explore not only the history and fundamentals of universal design but how its tenets have been successfully applied to a variety of museum programs.

Through universal design, we can certainly better accommodate visitors with disabilities. But the other benefit is further engaging your entire community. After all, the aim of these principles is to create something “usable by all people” (see sidebar, page 45). As museums work to be more inclusive, there could be no better approach.

### Valerie Fletcher

I am very fortunate to have one of those jobs that I would probably do for nothing. I run an international nonprofit focused on enhancing the experience of people at all ages and abilities through excellence in design. Design makes our blood run faster because we believe that we change people’s lives in doing it.

Design is powerful. More often than not, the first lesson in design for a lot of people occurs when it fails them. We are very interested in the power of design to actually support and enhance, rather than fail. We seek an outcome that increases a sense of confidence, comfort and control. We also believe that variation in ability is ordinary; it is not “special.” Like many

of you, I get a sort of prickly heat when I hear the term “special.” We want to make it part of people’s thinking that design is for everyone and not for some presumed discrete and separate group.

Legal mandates for program access, reasonable accommodation and effective communication are applied to qualified individuals with disabilities. That is the content of the Americans with Disabilities Act (ADA), but certainly not the language of universal design. Universal design is a dynamic framework.

There are three primary catalysts for universal design. The aging of the world’s population is the most dramatic. Even in the continent of Africa, where we have the shortest life spans in the world today, we have a doubling of people over 60 by 2050. Disability is number two. Sadly, in many parts of the world, disability is still so far down on the priorities for public action that it gets almost no attention. Eighty percent of people with disabilities are in developing countries. And a really distant third is social equity.

For us in the United States, here’s a simple snapshot of the significant proportion of the population today who can be predicted to have some level of functional limitation. Thirty-six million people are over 65 already; there are 54 million people with a disability based on census data, and some of those, of course, are people over 65. And there are 78 million baby boomers—really the big story driving the 21st-century demographic in the developed world. We’ve got 308 million people in America. So, conservatively, we are looking at about a third of the population. The phenomenon of the baby boomers and the lower birth rate makes us look very different in the next 50 years.

The World Health Organization defined disability in 2001 in a new way after 10 years of work. What is significant is that they define disability as a contextual variable. They essentially said that functional limitation is a fact of being human; if we are lucky



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enough not to die young, we are likely to experience some level of it. This is our invitation to shape a context in which we do not have to presume that it is about some small sub-group of people. Certainly, this is the context of all of your institutions. It's physical, but there's also the communication environment, the information environment, and the social and policy environment.

One of the challenges of universal design is to get people to appreciate that we're really talking about everybody. You have no idea who has heart disease. You can't guess who has less vision and you can't guess most people who have hearing loss. The people whom we need to welcome have non-apparent conditions.

We have yet to find a cultural institution that has done a brilliant job on navigation and wayfinding. I'm not talking signs; I'm talking a system—a way of thinking about how people find their way. This is one of those topics where I urge people to engage user experts, because people vote with their feet. They simply won't come back if navigating your institution makes them feel stupid.

User experts have brought home to us the importance of acoustic and light quality in museums and other cultural institutions. People have experiences of being unwelcome in those places because the light is too dim to read a menu or the din of the crowd is so loud that they cannot have a normal conversation with their companions.

More and more, we are hearing users talk about the need for spaces that will get you out of the main thoroughfare in museums. That is, with children, or possibly with older visitors, a place where you can sit, reflect, take a break—a place where a child

can be calmed down and where a parent can manage that child's activities.

Process matters. Engaging user experts keeps you fresh. Imagine how you want things to be. Focus on process as thinking differently and constantly making decisions, even small ones, that move you down the road. The issue is this: How do we create a sense of welcome for everyone?

Betty Siegel: I am a pinch hitter today, assisting my colleague and good friend, Beth Ziebarth, who is the director of accessibility at the Smithsonian. We're going to look at a couple of case studies out of the Smithsonian: an exhibition titled "Whatever Happened to Polio?" [at the National Museum of American History, 2005-06] and a program called Art Signs [ongoing at the Smithsonian American Art Museum] and really see what it looks like when you design exhibitions and programs that welcome everybody.

The Smithsonian chose three universal design concepts they thought would be useful in exhibitions. One is that you have to consider universal design from the beginning. It has to be an integrated part of the design from concept through construction. It just doesn't work as an afterthought or as a Band-Aid. Two, universal design needs to be integral to the exhibition design. In the case of "Whatever Happened to Polio?" universal design seemed like a natural fit in part because of the subject matter, but more importantly because it really concurred with and supported the curator's vision for the project. Third, in order for universal design to work, all the exhibition team members need to adopt it as part of their core philosophy as they approach the design process.

The museum visitor experience starts

early. It starts with the pre-visit, through websites, phone contact and brochures. Visitors have to get from the front door of their home to the venue. They also have to get around, get to the information and get to the amenities once they are in the venue. The experience doesn't happen in a vacuum—it occurs within the context of the museum experience as a whole. So, I ask you to look at the process by which you draw people to you and keep them in your environment. See whether those experiences also welcome all people.

This particular exhibition purposely went about inculcating the design team members in the world of universal design. Before they even got started, they held a day-long universal design charette that included experts on universal design, architects, people with disabilities and people who live with polio. This was really key to engaging the community in the process.

The seating area just outside the exhibition had wooden benches with backs and arms, interspersed with blue wheelchairs. Everyone appreciates a place to rest, wait and recharge. There's rarely enough seating inside museums, and even more rare is seating designed at the right height with backs and arms, which will make it easier for people of all ages to get in and out comfortably. The wheelchairs were interspersed on purpose as a tie-in to the subject matter of polio and to start challenging visitors before they entered the exhibition.

At each of the three entrances to the exhibit, a component oriented visitors with introductory text and a visual and tactile map for navigating not only the physical space but the content. There was deliberate use of redundancies here. The [exhibit



deaf audience through the museum. At the same time, the Smithsonian American Art Museum wanted to offer a program with in-depth discussions revolving around one or two pieces of art.

So, the museum married those two ideas. They trained deaf guides to lead their in-depth discussion program, but they broadened the program to be inclusive of hearing people by having interpreters along on the tours to voice what the trained deaf guides were doing in sign language and providing upon request things like assisted listening devices and CART (Computer Assisted Realtime Translation). Thus, they created a program where hearing, hard-of-hearing and deaf audiences could learn together.

### Ray Bloomer

I'm going to focus on two different case studies. One is the Great Falls Tavern Museum in Potomac, Md., which is part of the Chesapeake and Ohio Canal National Historic Park. When the park got an exhibit plan from the exhibit designers, they realized that it was not meeting the needs of basic accessibility, let alone universal design. So they decided that they would put together some additional dollars and convene a focus group to look at how they could make the entire museum accessible by implementing the principles of universal design.

The biggest thing about the C & O Canal is the lock system, containing more than 100 locks. There's a model that will tactilely enable anyone to examine this system. It's in three different sections: the exterior of a boat, the boat sitting between two different locks and a cutaway so you can see the interior of the boat. This adds to the experience for people with various learning styles—in particular, people with

cognitive disabilities. The three different sections make it a little easier for all people to learn about the process.

Another thing that's really important is that a tavern in the 18th and 19th centuries had some pretty unique aromas: liquor, the various cargos, spices, foods and people. So they have a smelling table where you open boxes to get a sense of these.

Throughout your visit at Great Falls Tavern, there is music playing in the background. It gets louder as you move closer to the next exhibit so you know that there is a tactile and an audio experience there.

Statue-type figures are representative of people who would help to operate the tavern, such as the keeper, his wife and his son. It's a way for people to tactilely examine not only the figure but the clothing. The tavern keeper's wife is holding a loaf of bread, which would be something offered at the tavern itself.

Another tactile exhibit deals with the geology of the flood plain that the canal goes through, from Pennsylvania through Maryland and into the Potomac River. Smooth raised lines dissect three different sections of the flood plain.

A second case study might change your mind as to whether you might apply a few of those principles in your process of exhibit design. It was 1986 when the Statue of Liberty exhibit was completed, after about three and a half years of design development that included people with disabilities as part of an advisory group. This was done before Ron Mace coined the phrase universal design and before organizations got together to develop those wonderful seven principles. But I think you'll find with the Statue of Liberty that those principles could have been used, because they

all make great common sense in the design process.

A three-dimensional model shows not only Liberty Island and its shape, but where the Statue of Liberty is located, along with other buildings. This gives you a chance, if you're not able to see it, to let your fingers do the walking. People who like to see things in a three-dimensional form get a better sense of how everything relates.

One thing that we were not able to do, due to the physical constrictions of the statue, was to make it physically accessible to anyone who was unable to climb up those narrow stairs. So what we did was develop a short video called "A Trip to the Top." This shows not only the physical environment but people exerting themselves as they're going up through the statue. There's a readout with a temperature gauge; whether you're there in the wintertime or in the heat of the summer, you know what the temperature is, and you get to see what other people are going through as they climb those ladder-style steps.

We wanted to make sure that the colossal nature of the statue was conveyed to all people. We reproduced a couple of pieces of the statue and made them available. The face of the statue is the first exhibit that you come upon in the museum. Prior to 1986, the statue was only available by looking up at it from the base, so this was the first time the statue was truly accessible to all people. Anyone with and without disabilities can walk up and touch it. This is an exact reproduction, enabling people to see how the statue is made and what it looks like today. There's a piece of one of the feet so you can see appreciate the great size of the statue. There is also a cutaway, seven-and-a-half foot model of the statue. Someone who is physically unable to get





to the top can have a very good experience looking at all components of the statue.

When they were [restoring] the statue, they had to replace all of the armature bars—the pieces that connected the “skin” of the statue to the skeleton that was designed by Eiffel. The bars that were removed through the restoration process are part of an exhibit, so a person can look at them and touch them. Through a small window, you could see people working inside the workshop. This was eventually made into a video so you can see the people who worked throughout the restoration process.

A new version of the audio description was just done last summer. They put tactile numbers at various points, enabling a person to push buttons on their audio device and receive a description. ●

## What is Universal Design?

Universal design is 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.

### Seven Principles of Universal Design:

- **Equitable Use:** The design is useful and marketable to any group of users.
- **Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.
- **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.
- **Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
- **Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintentional actions.
- **Low Physical Effort:** The design can be used efficiently and comfortably and with a minimum of fatigue.
- **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.

*From the Center for Universal Design, North Carolina State University, Raleigh.*

## How well does your institution integrate universal design principles into its public programs and exhibitions?

Consider how you might accommodate visitors with disabilities through a universally designed program. You can also engage your local disability community to inform program designs and develop resources to share across organizations.

**AAM's Information Center** offers online resources that relate to universal design and accessibility from programmatic, facility, online and communications perspectives. Check out the following pages at [aam-us.org/infocenter](http://aam-us.org/infocenter): interpretation & education > accessibility;

facilities & risk management > facility & site management > accessibility; mission & institutional planning > information technology > museum websites > accessibility; marketing & public relations > visitor services.

**Standards** (“Characteristics of Excellence for U.S. Museums” and “Standards Regarding Facilities & Risk Management”) are available at [aam-us.org/aboutmuseums/standards](http://aam-us.org/aboutmuseums/standards). Also see [aam-us.org/pubs/mn](http://aam-us.org/pubs/mn) for the following *Museum* articles on the topic

of accessibility: “Take a Seat” by Steve Tokar (September/October 2008) and “All Access Pass: Making a Small Museum Disabled-Friendly” by Nancy Richner, Fran Prezant and Pearl Rosen (July/August 2006).

For a complete recording of this webinar plus handouts and other resources, visit [aam-us.org/getinvolved/learn/universaldesign.cfm](http://aam-us.org/getinvolved/learn/universaldesign.cfm). LearningTimes produced this program and is a sponsor of AAM professional development.

