

UNIVERSAL DESIGN

don't buy, build,
or remodel without it

Susan Mack, OTR/L, CAPS

Susan Mack was the Certified Aging-In-Place Specialist and universal design consultant on this "Home For Easy Living" located in Southern California.



Synopsis

- *One of the important considerations in universal design is flexibility.*
- *Universal design homes are designed to readily accommodate people who differ in height, size, strength, and mobility.*
- *Marketability and resale value are increased because you can sell your home to people of all ages and abilities; no one is excluded from buying your home because of unnecessary barriers and hazards.*

The Objective

The objective of universal design is to enhance products and environments to be usable by all people to the greatest extent possible. Most of us probably assumed that design has always been dedicated to that goal. Unfortunately, that has not been the case. Most outdated, traditional home designs were based on meeting the needs of an "average" person without consideration of the broad spectrum of human functional abilities and changes that occur throughout a lifetime.

Universal design is a leading-edge design concept that strives to accommodate human functional diversity and the future changes in how people perform their activities of daily living. The Principles of Universal Design can be applied to the community master plan, individual home floor plans, appliances, plumbing fixtures, interior decorating features, landscaping, telecommunications, and home electronics. This exciting new design concept is still evolving and can be applied to all kinds of design.

"With the rapidly changing demographics in this country, we really cannot afford to not incorporate universal design."

The Design Team

It is important to appreciate the value of a design team. The best results are achieved by a team of professionals who have depth of experience in architecture, engineering, interior design, landscaping, home electronics, and human functional diversity. As an occupational therapist since 1971, my knowledge of how the human body functions and changes during the life span is what I bring to the design team as a universal design consultant. This human-centered universal design perspective



This gorgeous award-winning kitchen is a fully accessible universal kitchen without the appearance of being accessible. Beauty and function join together to provide the best in flexibility of use. Multiple work surface heights, easy-to-reach storage, universal cabinets, enhanced lighting, work efficiency, and ergonomic fixtures and appliances all in one!



These universal cabinets appear to be standard cabinets when the cabinet doors are closed. However, they quickly accommodate someone who wishes to sit while preparing dinner after a long day. The smooth cooktop is located near the kitchen sink to make it safer and easier to transfer a pot of boiling water to the sink to pour it out. The breakfast nook table provides a lower work surface for a seated cook.

This elegant universal shower provides the choice of two styles of shower-heads (his and hers!), designer safety handrail, and low-threshold entry with ample floor space to enhance ease of use. The tub has a deck with designer grab bars to make getting in and out easier and safer. The lavatory is built into a universal design cabinet to allow the homeowner to sit comfortably while performing daily grooming activities.



creates homes that enhance ergonomic fit, safety, health, work efficiency, comfort, convenience, social participation, marketability, and ultimately, freedom of choice.

The Invention Of Simple Machines

Why are simple machines invented? How can wheels, levers, inclines, and pulleys reduce the burdens of life and enhance comfort for all of us when incorporated into ergonomic universal home design?

The wheel was created to reduce the burden of carrying heavy loads. Over 110 million Americans report back pain. If we went to the trouble of inventing wheeled conveyances to reduce stress to our backs and joints, we need to create environments that allow us to use wheeled devices. With the enactment of the Americans With Disabilities Act (ADA), the government mandated that public structures be built to allow for passage of people using wheelchairs. Most of us have benefited from that requirement when we have been pulling along

our roll-on luggage. The delivery men and women who use dollies certainly have benefited. Sloped walkways (inclines) without steps up to the porch or at the door allow us to roll in our baby strollers and grocery carts. Eliminating unnecessary steps enhances safety by reducing the risk of trip-and-fall injuries. Falls in and around the home are the leading cause of injury-related deaths in people over the age of 65. Reducing the risk of falls is an essential component of extending active healthy living.

Lever door handles make opening doors easier when you are carrying groceries or children and reduce the stress on joints in the fingers and wrists. Lever faucet handles reduce the repetitive stress to joints and are more hygienic. When your hands are dirty, you can turn a lever faucet handle on and off with your elbow without touching it with your dirty hands. This can reduce the spread of germs from one family member to another. Motion sensor faucets are even better at avoiding unnecessary transfer of germs.

In the Optimum Performance Home™ at The Sea Ranch (featured in the Premiere Issue 1, January/February 2006 of *Ultimate Home Design*), the house is designed to perform better and to support the homeowners ability to perform better as well. Having easy-to-reach storage, efficient workflow, and workspaces designed to allow the homeowner to work while seated is much more work efficient and convenient than bending,



The grand double-door entry into the master bedroom creates a stunning entry while allowing for ease of moving in large pieces of furniture. Lower windowsills expedite emergency egress.

stretching, running around, and standing unnecessarily. Work efficiency in the design of the home will leave the homeowners with more time and energy for social and creative activities.

By incorporating the Principles of Universal Design into the design of the Optimum Performance Home at The Sea Ranch, the homeowners will be able to welcome people with diverse abilities to be their guests. The master bedroom suite is on the ground floor, conveniently located close to the social hub of the home. The office on the ground floor has space allocated for a Murphy bed for guests. Two of the guest bedrooms and a study/library/surround music room, which can be used as a guest bedroom, are upstairs, but space was allocated for an elevator to be installed if desired in the future.

One of the important considerations in universal design is flexibility. Universal homes are designed to readily accommodate people who differ in height, size, strength, and mobility. Some people may be disabled in a medical sense, but they are handicapped by an environment that imposes unnecessary barriers. It may be just a matter of a few inches to create a more inclusive design that values social integration of people of all abilities. Marketability and resale value are increased because you can sell your home to people of all ages and abilities; no one is excluded from buying your home because of unnecessary barriers and hazards.

Independence And Self-Reliance

We are living longer than ever before so our homes need to be designed to support our desire to stay in our own homes as long as possible. Universal design supports this desire to “age in place” by creating homes that facilitate independence/self-reliance, as well as allow us to recover from illness or injury in the comfort of our own homes rather than in an impersonal institutional setting. Our homes need to be designed to support in-home caregiving, which many long-term care insurance plans are now covering. Traditional homes are full of unnecessary hazards and barriers to in-home caregiving. Universal design can be incorporated into new home designs and remodeling projects to provide us with freedom of choice of where we want to live. The savings from deferred institutional living can quickly recoup the cost of incorporating universal design. With the rapidly changing demographics in this country, we really cannot afford to not incorporate universal design.

Multigenerational Families

Many homes now have three or four generations of family members living together. Universal homes accommodate multigenerational families by addressing the environmental

needs of the grandchildren as well as the grandparents. The Optimum Performance Home at The Sea Ranch is designed to accommodate the homeowners' current, as well as future, family needs.

Benefits Outweigh Costs

Universal homes are aesthetically more attractive because of the more open, spacious floor plans and enhanced natural lighting. Universal design is value-added design! The additional cost of incorporating the Principles of Universal Design is only a few thousand dollars when done at the beginning of new home design. The benefits far outweigh the additional costs. The specific universal fixtures (comfort height toilet, grab bars, etc.) should be offered as options, which would be selected and paid for by the homebuyers as they desire.

Conclusion

Why would anyone want to buy a house with unnecessary hazards and barriers?

We need to let the home building industry know that we will not settle for the status quo.

Next time you are touring model homes, ask to see the universal design models. When talking with your remodeling contractor, tell him or her that you want your home addition and/or remodeling to include universal design features. We should want only the best: universal homes that provide us with optimum performance! **UHD**

The Author

As an occupational therapist for over thirty years, Susan Mack, OTR/L, CAPS, has been involved with modifying products and homes for people of all ages and abilities. When consulting with developers, architects, and remodeling contractors, she utilizes her knowledge of human functional diversity and changes over the lifetime to synthesize the principles of universal design into marketable universal floor plans and specifications. She received the 2001 and 2004 Gold Awards from the National Association of Home Builders for her universal design consulting work on market-rate universal homes in California and Ohio. She is President of Homes for Easy Living Universal Design Consultants. She is the Universal Design Consultant for the Optimum Performance Home at The Sea Ranch. She can be reached at 760 409 7565 or smack@homesforeasyliving.com (www.homesforeasyliving.com).

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