

DESIGNING FOR ALL



The logo for SUGATSUNE, featuring the brand name in a bold, black, sans-serif font. The text is centered and flanked by four small red squares arranged in a 2x2 grid.

SUGATSUNE

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MATT RISINGER has been a builder of high end homes for almost 20 years and has been blogging about his passions of Building Science & Fine Craftsmanship since 2008.

During most of my 25 years of building, I've thought of aging in place as a task that an elderly person might want to undertake in order to stay in their home as they approached their eighties and nineties.

The funny part is, as I'm approaching 50 years old in the not-too-distant future, and am in the midst of building my own family's personal home, I'm really thinking about aging in place strategies and how to future-proof this house. I spend a lot of time thinking about and researching this topic these days, exploring the principles of aging in place that work particularly well.

Surprisingly, one aspect that has helped is having a growing family. For instance, one of my teenage sons broke his leg and was wobbling around the house on crutches. I quickly realized that my current home is not set up very well for someone on crutches, let alone someone who was in a wheelchair. I now recognize that some of the principles of aging in place, such as wider doorways, roll-in showers, and easily accessible cabinetry, to name a few, really work for all ages, not just the elderly.

As builders, as architects, as designers, and even as homeowners, we need to think critically about these principles and some of these commonsense adjustments, then incorporate them into more builds, not just houses that are intended for a 70-year-old to move into, but certainly even a younger family with middle-aged parents and growing children.

I hope this eBook will help you as you think about this topic and provide you with some inspiration (and fantastic Sugatsune hardware) that can support you as you make your house more functional, capable of aging in place smoothly, and overall, feel good.

One of the things I love about Sugatsune is that the company's hardware is very thoughtful, typically with some type of soft close function, and just works and interacts well.

The last thing I want to mention before you dive into this eBook is that the hardware is durable and long-lasting. I used a lot of Sugatsune hardware when I remodeled my study about seven years ago, and even today all that hardware still functions perfectly like the day I installed it.

So, enjoy this eBook, and good luck on your next build, my friends! ■



YOUNG OR OLD, HEALTHY OR SICK, WE'RE ALL IN NEED OF UNIVERSAL DESIGN

by Steve Hoffacker

“ For the most part, we are all temporarily healthy. ”

I heard that quote a couple of years ago when someone was discussing the disabled community using healthy individuals as a reference point. It's a quote that hits me very hard. It's a quote that doesn't limit accessibility to the handicapped but encompasses all of us. It combines our aging and oftentimes the decline in health that comes along, but most importantly, our fragility in this life.

For most of us, we are fortunate that the better part of our lives is spent healthy. For some of us, our fragility gets challenged and we incur a medical problem in the middle of our lives that renders us in need of assistance while navigating our home and daily life. We may fully recover from this, and go back to a healthier lifestyle, or we may not. The reality of that quote is that we are all

destined for a life that is more fragile than our best of times. It may come late in our lives as we expect it to, or it may come earlier than expected. We don't know. What we do know is that we should prepare for it – because it is inevitable.

The idea of “Aging in Place / Universal Design” has certainly become an important topic of design in the recent years. People are living longer, and for the most part living healthier lives in their later years. The length of retirement years has also expanded to provide the need for a home that will be used all day, for a longer duration.

I think it is important to understand that the concept of Aging in Place is not only to aid those who are impaired for some reason, but rather to make life less challenging and easier to navigate for those experiencing normal aging.

This is done with the idea that at some time, things may get harder, maybe much harder.

So, remember, when we design and build with the concept of aging in place in mind, we're designing for all of us, regardless of age. ■



AGING IN PLACE IS NOT JUST FOR THE ELDERLY

“ There is another way to look at this concept of aging in place. It’s called Universal Design. ”

As homeowners age, they tend to remodel and retrofit their homes to better address physical changes that create a situation in which the house isn’t working for them anymore. While homeowners continue to adjust, tweak and otherwise make changes that add convenience and ability to their lives, there is another way to look at this concept of aging in place. It’s called Universal Design.

Through the years, families are faced with accommodating many people, from making it convenient for visitors to providing safe living accommodations in multi-generational families that include children and elderly, alike. Consider this: one in eight Americans of all ages has some type of disability and, by 2030; the U.S. will have more than 85 million people over the age of 65.

As a result, designers and builders are often challenged with long-term livability issues. According to the National Disability Authority, Universal Design establishes an environment that can be accessed, understood and used fully by all people regardless of their age, size, ability or disability. It is now considered a fundamental condition of good design. ■

WHAT IS UNIVERSAL DESIGN?



“ Universal Design
Creates Satisfaction
and Convenience for
All People ”

At some point in our lives, we have or will need some assistance with everyday tasks whether it is because we grow old, have an unfortunate accident, or have people in our homes that need help. When planning for Universal Design spaces, accessibility and safety are at the top of the list to consider. This means that layout and clearance could be the best starting point. If we put ourselves in the seat of someone bound to a wheelchair, pathways could be designed so that there is a minimum of 48” clearance and considerations should be given to 60” needed to turn around in a wheelchair. Not only would this make a space more accessible, but it would also create a modern, more open aesthetic.

Also, sliding doors could be incorporated to increase accessible while maximizing space. Best of all it ensures that if left open, the door will not impede on traffic areas. Adequate lighting is also critical.

As we age, it is said that we need 30% more lighting to see the same thing we did when we were younger. And not just for performing tasks, but to ensure that we see transitions and other hazards that may pose a danger. Furthermore, minimizing stairs and/or eliminating thresholds to showers will also reduce functional barriers and safety risks.



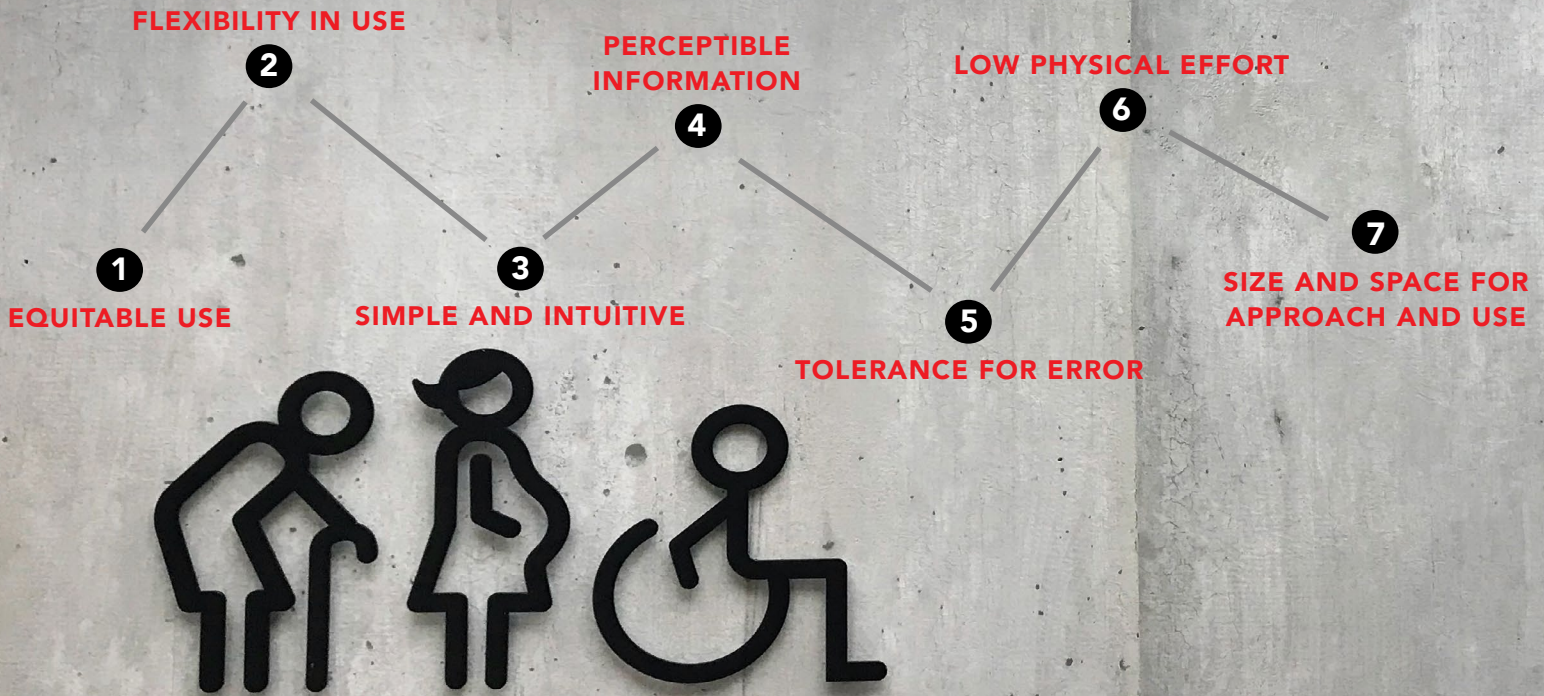
Universal Design can also minimize stress even when performing everyday tasks. For example, in conversations about designing for the aging, we often hear the phrase “eyes to the thighs” referring to the sweet spot where it is most comfortable to reach and maintain balance when performing tasks. For the interior designer, this means ensuring that common access to cabinets and drawers occur in this area. Good solutions for storage are to maximize lower cabinet spaces and designing in islands with ample storage so people would not have to reach above their heads to reach several upper cabinets. But wouldn't this be a good thing for everyone? Minimizing upper cabinets can even provide more space for windows that would allow in more light making the area look more spacious as well as lively.

Access into drawers and cabinets can be made easier by designing in knobs and handles that don't require a lot of dexterity and are designed with ample space that allow them to be used easier by all ages.

At the end of the day, we all desire autonomy. Whether it is transitions in life stages, managing a disability or suffering a minor injury, we want to be able to navigate daily tasks on our own. Designing with the principles of Universal Design will help ensure safety, access and convenience that empower people with independence. ■



THE 7 KEY PRINCIPALS OF UNIVERSAL DESIGN



1. EQUITABLE USE

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

2. FLEXIBILITY IN USE

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

3. SIMPLE AND INTUITIVE USE

The design is easy to understand regardless of the user's experience, knowledge, language skills or current concentration level.

4. PERCEPTIBLE INFORMATION

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

5. TOLERANCE FOR ERROR

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

6. LOW PHYSICAL EFFORT

The design can be used efficiently and comfortably and with minimum fatigue.

7. SIZE AND SPACE FOR APPROACH AND USE

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body, size, posture or mobility.



USING UNIVERSAL DESIGN TO IMPROVE RESIDENTIAL DESIGN

by Linda Kafka, WELL AP, CLIPP, CAPS

Universal design is gradually becoming a necessity more than ever – whether it is the commercial, business, transportation, or even the residential sector. It is an approach to design that incorporates products as well as building features and elements which, to the greatest extent possible, can be used by everyone. By facilitating and empowering the diverse population to the benefits of health, wellness, and human performance – Universal Design profoundly makes a great requirement in the spaces that are very commonly inhabited – mainly, the homes.

Since we tend to spend most of the time in our homes – following the live-work-play mantra, it has become an utmost necessity to rethink these spaces with special attention to accessibility. After all, this

is what universal design targets, right? People of all ages, sizes, and abilities in specifically all types of buildings. When addressing the residential sectors, there are quite a number of ways that accessible design can be incorporated. Right from structural advancements to electrical and plumbing utility, lighting, circulation, and even furniture and décor – UD has the potential to be incorporated into every aspect of design.

For instance, standard electrical receptacles can be placed higher than usual above the floor. This way, the residents wouldn't have to bend to switch on or off the lighting systems. Secondly, the doors chosen can be wider than usual and the stairs can either be complemented with outdoor ramps or

internal elevators. This way, the home offers a sense of welcomeness and joy to all the residents as well as the guests.

It is true that a person might have to face disability – whether temporary or permanent, at least once a lifetime. Apart from old age, several other factors such as pregnancy, post-pregnancy period, regular body aches, and variations in body physique allow the residences to be more universally usable. Right from the entrance, the homes should ensure a stepless entryway path. If not a ramp, then entrance through patio or garage should be offered. This way, it is even easier for the baby strollers and luggage holders to move around.

Furthermore, UD requires an optimum amount of technology involved – mainly, the incorporation of motion detector-controlled lights throughout the home and every switchboard and doorbell at a

reachable height. An open concept plan is highly recommended that includes an accessible bedroom and accessible bathroom placed closer to the kitchen and living room. Moreover, the door openings should be full-height glazing to ensure a safe opening on the other end.

Diving further into the details, bathrooms are spaces that require quite a lot of attention when designing. A waterproof floor with a minimum 5'x4' curb less shower is a necessity. Ample clear space around the wet and semi-wet zones allows the resident to comfortably move around without any hassle. The fixtures and equipment can be specified as per the compliance and the countertops are required to

remain higher, so the resident doesn't strike his knee against sharp edges.

Well, yes – all these details matter – and especially when it comes to thinking universally. From the major aspects to the minor, universal design is definitely the present and future of design. And now that homes are where most of the time is spent – what

better than incorporating the principles of Universal Design? ■

It is true that a person might have to face disability – whether temporary or permanent, at least once a lifetime. ■





WHY UNIVERSAL DESIGN CHOICES ARE BETTER THAN ABSOLUTES FOR AGING IN PLACE

by Steve Hoffacker

Rules are clean.

We can follow them – even when we don't like them. We obey the posted speed limit signs and the other rules of the road. We observe posted rules in hotels, clubs, parks, retail centers, and other public areas.

Most of us have played basketball, baseball, softball, or soccer (football, if you like), or a similar group activity while growing up. We are familiar with the rules. We expect them to be followed – especially when we feel that our team was aggrieved.

There are so many rules of behavior that we observe when we are in public and around other people or in places where we might see or encounter others.

There are also many other common observances, that, while not published or rigid rules, are learned or observed behavior. For instance, we generally don't go outside in the winter without a sufficiently warm

outfit – at least a jacket or coat to insulate us from the weather. We wear a raincoat or carry an umbrella when it's raining. We refrain from grabbing hot objects or touching the burner on a stove when it's in use. While we like to show others (or demonstrate to ourselves) how strong we are, we know our limits and do not intentionally attempt to lift something way too heavy for our ability.

We observe potential risks with caution. We are aware of how sharp objects such as knives, broken glass, razors, scissors, and pointed objects can cut or potentially severely injure us, and we don't need reminders of this each time we are tempted to act carelessly around such items.

We know about laws of gravity and what will happen if we throw something into the air or if we jump from a high surface. We are aware of the power and mass of a car, truck, bus, or train if we attempted to run in front of it while it was approaching.

So, when we look at universal design and how we might want to use it in our homes or those of our clients in order to create accessible environments and assist in aging in place designs, wouldn't it be easier and cleaner for all if we just adopted a uniform set of universal design applications and installed them everywhere? A set of rules, you might call them.

On the surface, it seems like a good approach, but there are many considerations, including budget, age and condition of the home, what it might already have in place, and the needs and abilities of the residents or clients.

Whenever possible, we would want to design improvements created specifically for our client to observe the guidelines of universal design with respect to appearance and ease of use, but a general prescriptive formula, irrespective of an individual's

needs or abilities, would not be beneficial. Also, it may not be easily achievable based on the constraints of the building or dwelling.

Nevertheless, when we can create an aging in place solution that observes good universal design elements, we create a solution that meets the needs of several people and not just the client. It still needs to apply to the individual needs of the client and other members of their household, but we may be able to achieve both: a specific aging in place solution that is usable by nearly anyone who might enter that home, and one that fits into the space where it is used as it belongs there.

We just need the flexibility of being able to create the solutions that meet the needs and abilities of our clients without being required to comply with certain guidelines or products because they have been mandated. ■



“ When we can create an aging in place solution that observes good universal design elements, we create a solution that meets the needs of several people. ”



FORGET ABOUT APPEALING TO MASS MARKETS

by Steve Hoffacker

Sometimes we look for quick or easy solutions for our aging in place clients – these tend to be ones that will apply to the general population even though aging in place, by definition, deals with specific individual needs and desires.

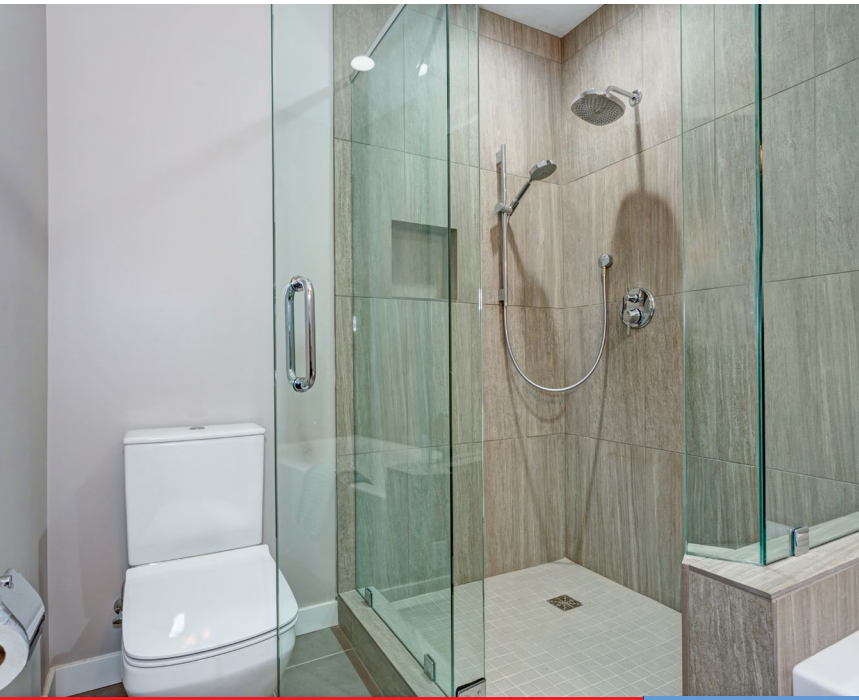
Takes chairs and toilets, for instance. Both are designed to be used from a seated position, and both are prescribed to be at least 17" above the floor for the most accessible use. But what if they are built closer to the floor – lower? Does this make them inherently unusable? Absolutely not. In fact, many people prefer them to be smaller or lower to match their physical size, abilities, or requirements.

While there is a general standard in sizing, we cannot mandate a certain height from the floor for devices like chairs, beds, and toilets. Some people are comfortable using them at a 17-inch or even higher, and many are not. Some people just aren't

“ Aging in place design treatments mean that we determine what will work for the members of a household or family ”

tall enough to use them at an elevated height, and some desire them to be 19-20 inches or more. As we know about aging in place, everyone is different with varying needs so there can be no pronouncement or universal creation of such items unless they are adjustable – and we are starting to see a few of them.

Therefore, as much as we want to find an acceptable standard with mass market appeal that can be used universally, this is not easily achieved.



Someone earlier in life may have more flexibility, coordination, balance, leg strength, and visual acuity so they can find the toilet or chair and sit on it comfortably and easily. As the years go by, this task may become more challenging. Just raising it or making the sitting surface larger isn't necessarily the answer though.

Each design must meet the needs of the most demanding user in the home – sometimes a design just for them with other members of the family using something different for that particular purpose.

Adjustable height toilets, countertops, tables, sinks, and other items in the home may be a reasonable solution for people with needs that respond well to such changes and accommodations.

FACTOR IN SENSORY LIMITATIONS

Whichever height we choose for sitting (chairs or toilets, for instance) or for standing, such as countertops, we know that people have varying sensory abilities that often mean changing what we want to use to what will meet their needs. Needs are subject to change over time as well.



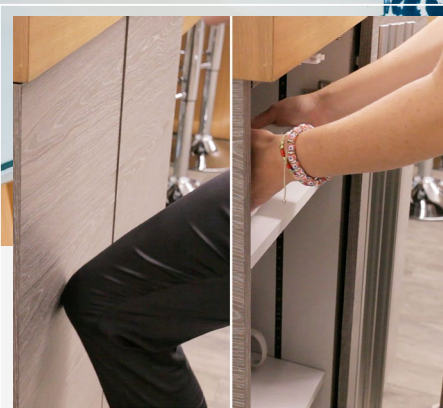
Aging in place design treatments mean that we determine what will work for the members of a household or family – a single member, a couple, a house with children, or a house filled with multiple generations. We then design accordingly, with a single design that works for everyone or more than one design to accommodate various needs and abilities.

When we are finished with our design treatments, they should work for the people in the home—the ones we are working with—not necessarily to be something we want to feature as a classic design on a website or forum. That's not why it was done. ■

SUGATSUNE'S ROLE IN AGING IN PLACE



SLIDING DOORS could be incorporated to increase accessible while maximizing space.



PUSH TO OPEN HARDWARE merges form and function by allowing people to open drawers and cabinets without the need for traditional hardware elements. Provide a clean modern look with push-latches that don't require fine motor skills to pull open.



LATERAL DOOR OPENING SYSTEMS are designed to minimize the required space to open a door and provide full access into cabinets and storage spaces even in corner applications.

Sugatsune is ISO 9001 certified and has a rich tradition of manufacturing and distributing quality hardware adhering to Universal Design. The company's award-winning **LIN-X1000 Lateral Door Opening System** provides smooth movement with a soft-close that supports large doors weighing up to 200 lbs., without making them feel at all heavy.

In comparison, the **LIN-X450 lateral-door system** specifically provides full cabinet access. Given that these doors do not swing open, the lateral movement requires only 9-5/16" clearance regardless of the width of the door panel. The minimal clearance necessary, makes these door systems ideal for wheelchair access or walkers. The operation of the system allows for easy, smooth opening and soft closing, preventing fingers from being pinched.

Sugatsune has a long history of developing products with Universal Design in mind. Providing furniture fittings since 1930, the company has experienced the many changes in people's lifestyles, recognizing the need for lifelong solutions that incorporate safety, modern design, easy motion and versatility. Pair a drawer or cabinet door with one of many Sugatsune push-to-open catches and open them easily with just an elbow. Finger dexterity limitations, or even full hands presents no challenges to their operation. Sugatsune's pocket and sliding-door solutions such

as the **FD80 pocket-door solution** can easily be adjusted should changes become necessary. The system offers a 2-way soft open and close feature and provides a constantly smooth function that allows the use of the doors with minimal effort. The FD80 eliminates the headaches inherent in having to break open a completed pocket, while providing easy access and adhering to Universal Design requirements.

Sugatsune addresses the livability challenges experienced by designers and builders. By adopting a real understanding of how Universal Design provides an environment that is easily accessed, understood and used by all, regardless of age, size, ability or disability. And, as the 85 million that will be 65 and older by 2030 and wish to remain in their homes, Universal Design will ensure an easier environment to do so. By incorporating Sugatsune hinge and lid support systems and push-to-open catches and latches, access issues that are all too common will already be modified, delivering a more stress-free and enjoyable home.

Since 1930, Sugatsune has been creating satisfaction and convenience for people. Be sure to visit us at www.sugatsune.com or call one of our specialists at (800) 562-5267 to help you find the right solution to help with your design challenges. ■



“ Sugatsune has a long history of developing products with Universal Design in mind. ”



SUGATSUNE

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