

# The All-in-One Concept Home: Universal Design Living Laboratory, the National Demonstration Home & Garden

By Rosemarie Rosetti



On June 13, 1998, our third wedding anniversary weekend, my husband, Mark Leder, and I went for a bicycle ride on a rural wooded bike trail in Granville, OH. After riding for a few minutes, Mark thought he heard a gunshot and slowed down to investigate. As he scanned the scene he saw a large tree falling. He shouted, “Stop!” But the warning was too late. Instantly, I was crushed by a 3 ½ ton tree and paralyzed from the waist down.

Coming home from the hospital in a wheelchair in July 1998 after my spinal cord injury, I realized how my home intensified my disability. I was unable to roll on the carpet; fit through bathroom doorways; reach the clothes in my closet; access food in the pantry; reach glasses and dishes in the kitchen; take a shower or bath independently; do the laundry; use the oven or microwave; get food out of the freezer; access any of the landscape; come and go out of any door independently; and get to the second floor or basement. My husband and I knew that we had to sell our home and find something more suitable.

In September of 2004 we hired architect, Patrick Manley to draw the house plans for our new home. In January 2005, Mark and I were encouraged by our mastermind group to make our home a national demonstration home and garden and to acquire corporate sponsors.

We hired Robert August in October 2005 to help us with branding, marketing, and contacting international and national corporations to partner with us by contributing products and services. He named our national demonstration home and garden the Universal Design Living Laboratory. ([www.udll.com](http://www.udll.com)) After many years of research and hiring a design team, we contacted companies to contribute products and services.

Mark and I bought an acre and a half lot in December of 2006 and continued with the planning and design process. We broke ground on September 23, 2009. In addition to being accessible, universal design and green building construction principles were followed. On May 18, 2012 we moved into our new home located in Columbus, Ohio. There are currently 188 contributors.

Our home could not have been built without their support. Mark and I have personally funded the UDLL and served as the general contractors with Mark doing much of the work himself.

## Independence

As others plan to remodel or build a new home, they need to build in features that allow the occupants independence. Empowerment is a primary objective of a universal design home. Accessibility, safety, convenience and usability features need to be top of mind in the design phase.

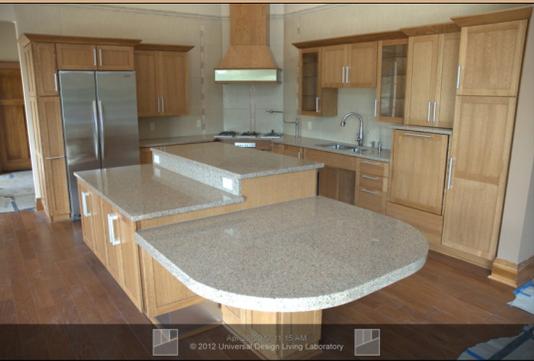
One example of a universal design feature is a no step entrance. Rolling into our new home is achievable independently





at any entrance. There are no steps except those leading to the basement. The low door thresholds and wide doorways are especially appreciated. There is an elevator to the basement and loft.

My favorite room is the kitchen and the independence it's design and appliances offer. Visitors are most surprised when they see the side hinged oven in the center island. The microwave is located just left of the oven. This island has three countertop heights: 30 1/2 inches, 34 1/2 inches, 40 inches. The countertop by the sink and cooktop is 34 inches. The lowest section provides me access for food preparation, as well as enjoy a meal. Guests gravitate to the countertop height of their choice.



The convenience electrical outlets on the center island are useful when plugging in small appliances. All light switches and electrical outlets are reachable from a seated position. More than 50 percent of the storage space is accessible from my wheelchair.



The cooktop and sink have plenty of knee space underneath. In addition to having three burners at the cooktop, there is an in-counter steamer/pasta cooker. Water in this cooker can be drained by turning a knob, so there's no risk of getting scalded. Having the pot filler at the cooktop is convenient when filling the steamer and pots. There is a control panel at waist height for the ventilation fan and light above the cooktop. The dishwasher is raised 15 inches off the floor and easy to utilize. The side-by-side refrigerator/freezer has full extension adjustable height shelves and drawers, reachable from a seated position.



The 4 foot by 7 foot master shower is build for

## Selected Products Used at the Universal Design Living Laboratory

Adhesives – Henkel [www.henkelna.com/index.htm](http://www.henkelna.com/index.htm)

Art Glass Doors – ODL [www.odl.com](http://www.odl.com)

Cabinetry – KraftMaid [www.kraftmaid.com](http://www.kraftmaid.com)

The cabinetry in the UDLL was contributed by KraftMaid. We selected their Passport series because of the 9" X 6" toekick. All cabinets were standard sizes and it was easy to have the kitchen cabinets made so there were multiple heights of countertops. Features include: full extension drawers in the wall cabinets and center island; large under counter drawers for dishes, pots and pans; pull out spice racks; pull out pantry cabinet; floor to ceiling narrow pantry shelves; pull out closet organizer for cleaning supplies/products; rolling cart for food preparation and serving.

Cellulose Insulation – Nu-Wool [www.nuwool.com/](http://www.nuwool.com/)

Central Vacuum System – Vacuflo [www.vacuflo.com/](http://www.vacuflo.com/)

Closet Storage System – ClosetMaid [www.closetmaid.com](http://www.closetmaid.com)

Drywall – National Gypsum [www.nationalgypsum.com](http://www.nationalgypsum.com)

Elevator – Garaventa Lift [www.garaventalift.com](http://www.garaventalift.com)

A Garaventa Lift, model Elvora HD residential elevator, 42" wide X 60" deep, three stop elevator with automated clear acrylic accordion car gates; roped/hydraulic drive. This elevator was sized to hold a person using a power wheelchair or scooter and boxes. It is quiet and has self closing car gates allowing total independence to get from floor to floor. There is ample room to turn my manual wheelchair in a circle in the cab, as well as room for boxes that I transport with me.

Hardwood Flooring – Mannington [www.mannington.com](http://www.mannington.com)

Heating & Air Conditioning – Lennox [www.lennox.com](http://www.lennox.com)

Ironing Board System – Iron-a-Way [www.ironaway.com](http://www.ironaway.com)

Landscape Pavers – Reading Rock [www.readingrock.com](http://www.readingrock.com)

Microwave, Ventilation Hood – Thermador

[www.thermador.com/](http://www.thermador.com/)

Oven, Cooktop, In-counter Steamer/Pasta Cooker – Gaggenau [www.gaggenau.com/us/](http://www.gaggenau.com/us/)

Paint – Sherwin-Williams [www.sherwin-williams.com](http://www.sherwin-williams.com)

Refrigerator & Dishwasher – KitchenAid [www.kitchenaid.com](http://www.kitchenaid.com)

Silestone Countertops – Cosentino [www.cosentinousa.com](http://www.cosentinousa.com)

Sinks, Toilets & Faucets – Kohler [www.kohler.com](http://www.kohler.com)

All plumbing fixtures including: toilets, sinks, faucets, and the step free shower stall at the UDLL were contributed by Kohler. The toilets are Comfort height providing an easy transfer and using only about a gallon of water. The sinks are stylish and allow me access for my knees. The hand held shower nozzle is light weight, and conserves water, yet is powerful in delivering water where you need it. The Freewill barrier-free shower stall was complete with the fold down shower bench, hand held shower nozzle and grab bars.

Stains – Gemini Coatings [www.gemini-coatings.com](http://www.gemini-coatings.com)

Tile Flooring – Florida Tile [www.floridatile.com](http://www.floridatile.com)

Washer and Dryer – Whirlpool [www.whirlpool.com/](http://www.whirlpool.com/)

Windows & Patio Doors – Marvin Windows and Doors [www.marvin.com](http://www.marvin.com)

two. The adjustable height handheld shower nozzle that I use is on the wall to the left of my shower seat. This seat is mounted on the wall and is adjustable in height. The opposite wall has a stationary shower nozzle for Mark. We each have grab bars for safety. The heated tile floor is sloped allowing water to exit by way of the channel drain. The 42 inch wide doorway allows easy access for me in the wheelchair.

Doing laundry is no longer a frustrating experience as it was in our previous home. The wardrobe/laundry room is adjacent to the master bathroom. It contains

a sink with knee space; pull out ironing board system; 34 ½ inch high center island with drawers and hampers; full length mirror; hanging rods; and shelves for shoe and clothes storage. The washer and dryer are front loading and are on pedestals for great access. There is plenty of room for me to navigate around the center island and appliances. Natural light comes into the room from the high windows on the east wall as well as the skylight. LED can lights are activated by a motion sensor and illuminate the room at night.

Our home has lots of windows to take advantage of passive solar heating. We selected casement windows because the cranks are easy to operate, and the locks are reachable from a seated position.

### Better Health

The first noticeable improvement when I moved into our new home was the ease in

navigating on the hardwood and tile floors. My shoulders were no longer strained as they had been on carpeting. I realized that my carpal tunnel syndrome pain and numbness in my hands was lessened.

The central vacuum system in the walls provides a much cleaner way to remove dirt from the floors. Dirt is sent through hoses in the walls into a canister in the garage. By not having carpet, there is a lot less dust in our home. I'm not sneezing and blowing my nose as often and my nose isn't stuffy at night. This could also be due to banning our cat from the bedroom by closing doors!

The air filtration system uses a MERV 16 air filter which removes airborne particles. The





clean air quality has also been preserved by not using paints, stains, and adhesives with volatile organic compounds that pollute the air.

With 3500 square feet in the home and access to the 2000 square foot landscape paver area, I have plenty of room to walk with my walker. This gives me the opportunity for more exercise and weight bearing as I stand. The frequency of leg spasms is directly related to how often I walk and stand. As a result, I don't need to take anti-spasm medicine and get a good night's sleep. My muscles, bones and joints benefit from walking and standing. I've noticed a big improvement in my health since moving into our home.

### Privacy

For the first time since my injury I can close the door in our home when I use the toilet. The 2 1/2 bathrooms were sized to accommodate wheelchairs with pocket doors, privacy panels and telescopic doors to ensure that the occupants have adequate space for any size wheelchair.

My husband and I each have a home office at opposite ends of the house. Mark's office was built with a sound damping drywall and recycled cellulose wall and ceiling insulation to keep his conversations private. Both of our offices have art glass doors to ensure a quieter day.



The home design considerations for me have not had a negative impact on Mark who is 6'4". Our home is usable and inclusive to people of various sizes and abilities. That's the beauty of universal design!

### Doing the Impossible Takes a Lot More Time

Mark and I approached this project with a passion and dedication that has been with us since the idea was initiated. We have learned to persevere in spite of adversity and setbacks. We have met amazing people who have championed our cause and helped us along the way. By putting a team of architects, designers, marketing experts, public relations specialists, lawyers, manufacturer representatives, and construction managers together, we learned the importance of pre-planning and getting advice from a variety of people. As we look back and see the immense challenges we faced and financial investment we made, we turn our attention to the project's mission. Our home serves as a catalyst for change in the building and design industry. We are hopeful that our home makes a significant positive difference in people's lives and gives others hope.



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Click on these images to get more information about Rosemarie and her home!

The home picture below will take you to a photo gallery.



