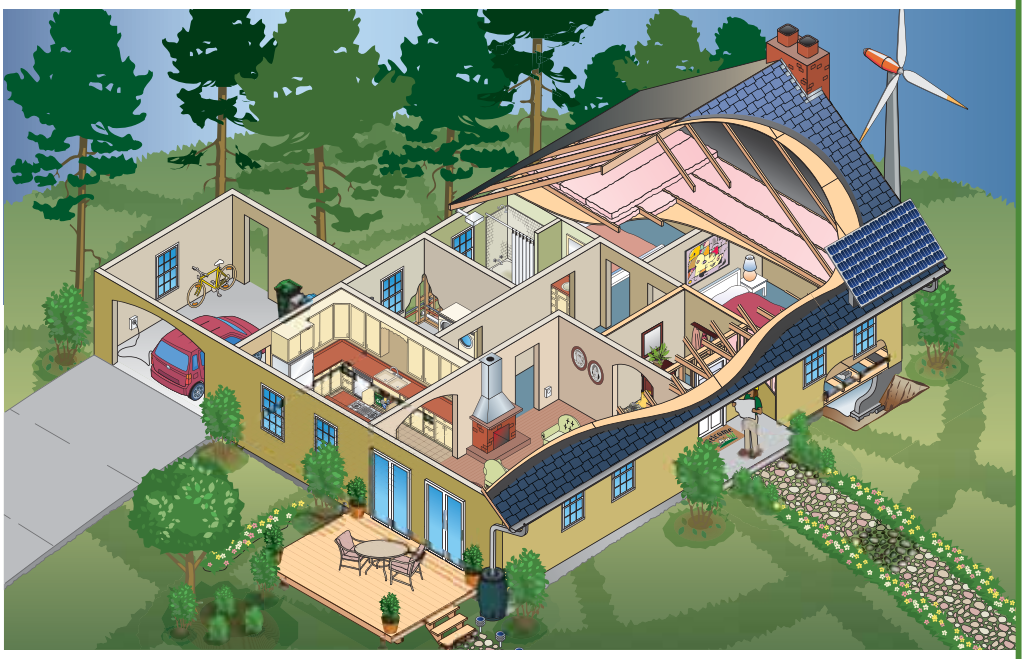
Green Remodel Strategies for Aging at Home

You're Never Too Old for a Green Remodel

People of all ages are looking at ways to live more sustainably. It's about making positive lifestyle changes with the goal of reducing your environmental impact, improving your health, and saving money. This applies to home remodels too! With careful planning, you can complete an efficient home remodel that fits your budget and accommodates your future needs so you can maintain your independence and live in your home for years to come.

Preparing your home for senior living is a smart decision that should be started as early as possible. With each remodel decision, consider what it will take to repair and improve your home or your future care needs. Even if you may move, adapting for aging at home is an increasing benefit in home sales - the senior population is large and rapidly growing.



King County's EcoCool Remodel Tool - www.ecocoolremodel.com

What is a Green Remodel?

A green home remodel reduces your utility bills, minimizes your home's impact on the environment, encourages a healthy and resource efficient lifestyle, and makes your house look and perform better. It's a long-term investment that helps you move toward sustainability by conserving resources; buying locally-sourced and recycled materials; selecting durable, non- or less toxic and natural materials; and incorporates design for future uses.

Thanks to partners:

Green Tools
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King County
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CITY OF SHORELINE

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Getting Started

Do Your Homework

Set your green priorities at the start and communicate them to your architect and/or contractor. Research green products and materials up front! To fit your budget and minimize disruption, talk to your design professional about potential strategies for phasing your remodel.

Hire A Design Professional

Choose an architect/contractor with green experience such as Built Green or LEED (Leadership in Energy and Environmental Design), or a Certified Sustainable Building Advisor. Good designers and contractors will work with you to find the best green solutions and options that accommodate your needs and fit your budget.

See resources section for information on green design professionals.

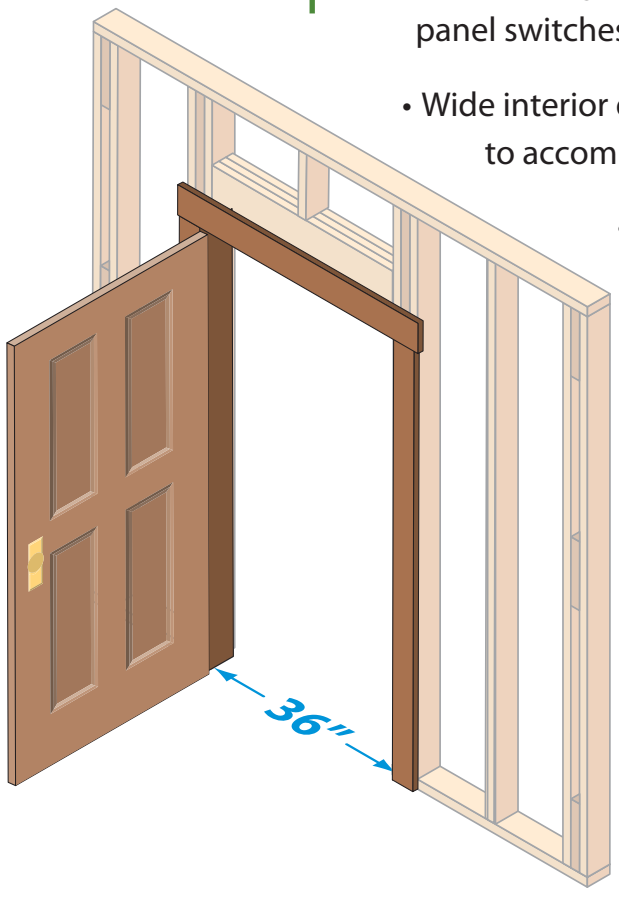
Aging at Home: Universal Design

A core principle of a Green Remodel is to accommodate your own long-term needs as well as those of future occupants. This concept is called ***Universal Design.***

What is Universal Design and why is it important?

Universal Design addresses senior mobility and safety to make homes usable, efficient and appealing to a wide range of uses and users. Key features of Universal Design include:

- Doors with lever handles
- Cabinets with pull-out shelves
- Variable-height kitchen counters
- Universally accessible showers and lavatories
- Increased lighting, with large, flat panel switches
- Wide interior doors and hallways to accommodate wheelchairs
- Step free entrances
- Single floor living
- Support handholds and railings



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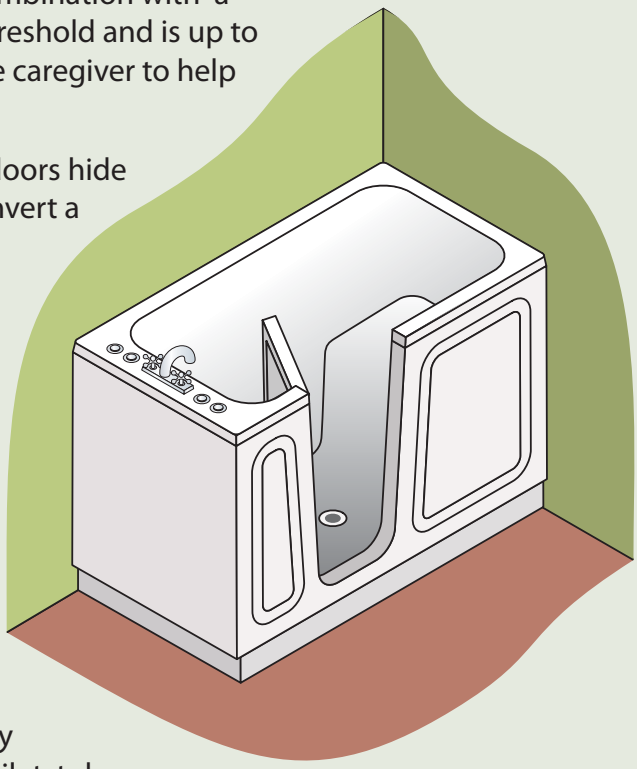
Certify your Remodel with Built Green!

Built Green is a local green building program that provides green home certifications and verification services. Even if you don't certify, Built Green offers green remodel planning tools and resources to help guide your project. Contact your local Master Builders Association of King & Snohomish Counties to learn how your universal design remodel may qualify for points and innovation credits, and how to achieve certification. (See Resources on the last page.)

Universal Design & Layout Considerations

- Remodel your existing spaces by changing the purpose of rooms to better meet your current and future needs. For example, remove a non-load-bearing wall for better maneuverability or remodel to include a full bathroom on the first floor.
- Accommodate future single floor living: include a full bathroom, kitchen, laundry facilities and bedroom on the first floor, or add a separate mother-in-law apartment.
- In a bathroom remodel, replace the typical tub-shower combination with a European shower that has a low (less than 1 inch) or no threshold and is up to 36" X 60" in size. Also include sufficient space for a possible caregiver to help with bathing.



- When possible, consider including pocket doors. Pocket doors hide in the wall when not in use, but when closed, they can convert a room into a private, temporary bedroom.
- Promote safety from fall hazards: use floor surfaces that are not slippery when wet; avoid thresholds as well as changes in floor levels and floor materials. Floors to avoid include smooth tile, vinyl and polished, sealed concrete. Softer materials such as cork, linoleum or marmoleum are ideal.
- Design for open and wide spaces and doorways to increase mobility. Design doorways at 36 inches wide and eliminate thresholds over 1-inch high. Where thresholds are needed, use a beveled edge.
- Add railings, handholds and grips to avoid falls. Particularly in the bathroom, include "grab-bar" support around the toilet, tub or shower. If you're not yet ready to install bars, reinforce the walls with ¼" plywood panels for future installation of grab bars. Include sturdy banisters along stairs and walkways.
- Include lever-style handles instead of round door knobs or control knobs on cabinets, window handles, controls and faucets.
- Install a tiled seat in the shower as well as a low-flow hand held shower unit.
- Improve lighting throughout the house and outdoors to avoid accidents. Aging eyes require more light for safety and to complete tasks. Improve lighting along outdoor paths, on porches, in the garage, and
- the kitchen.

Resource: Universal Design Council - www.EnvironmentsForAll.org

Tips & Strategies for a Green Remodel that Lasts

The environmental categories detailed here offer tips and strategies to help guide your Green Remodel with cost effective strategies that help prepare your home for your senior years, future lifestyle, and that protect the environment without sacrificing comfort or convenience.

Landscaping and Natural Yard Care

Your home's site and landscape can greatly affect water consumption, the quality of our region's waterways, wildlife habitat, and how you access your home. If your Green Remodel includes site work, consider the following opportunities:

- Eliminate steps. For driveways and paths, use smooth but porous materials such as pervious concrete or asphalt that allow rainwater to percolate into the soil and are at least 36 inches wide - for wheelchairs, walkers and wheeled grocery carts.
- Add efficient safety lighting to light paths & driveways and other outdoor areas.
- Include permanent sun protection options for patios and decks, such as awnings or shade trees.
- Relocate, or add, a garden tool shed to a convenient and easily accessible location.
- If you're adding a deck, consider step-free access and use engineered wood products to reduce maintenance.
- Choose native trees, shrubs, and plants that require little maintenance (e.g. raking, pruning, watering, mowing).
- When setting up raised beds for flowers and veggies, build the bed at a convenient height to avoid excessive bending.
- During construction, limit erosion by disturbing your site as little as possible and work with your contractor to put appropriate erosion control devices in place.
- Install a compost bin in your kitchen for food scraps.
- Install an outdoor recycling center with easy access and wheeled bins on a hard surface. Many jurisdictions allow the combination of yard waste and food scraps so check ahead of time when designing your space.
- Mix topsoil with organic compost, fertilizers, and mulch materials to improve soil quality, suppress weed growth and reduce maintenance.
- Install "smart watering" irrigation systems, such as soaker hoses and moisture sensors. Where appropriate install rain barrels or a cistern to collect rainwater for irrigation.

Landscaping and Natural Yard Care Continued

- Go pesticide and herbicide free! Check the King County Natural Yard Program at (206) 633-0224 for tips http://your.kingcounty.gov/solidwaste/naturalyardcare/index.asp
- Contact the National Wildlife Federation to get your yard certified with the Backyard Habitat Program 1(800) 822-9919 or www.nwf.org/In-Your-Backyard.aspx

Energy and Water Efficiency

Save Money and the Environment-Home energy use is responsible for 20% of Carbon Dioxide (CO_2) emissions nationwide. CO_2 is a powerful greenhouse gas that contributes to climate change. A remodel that focuses on resource efficiency reduces your CO_2 emissions, saves on utility cost and can increase comfort and safety.

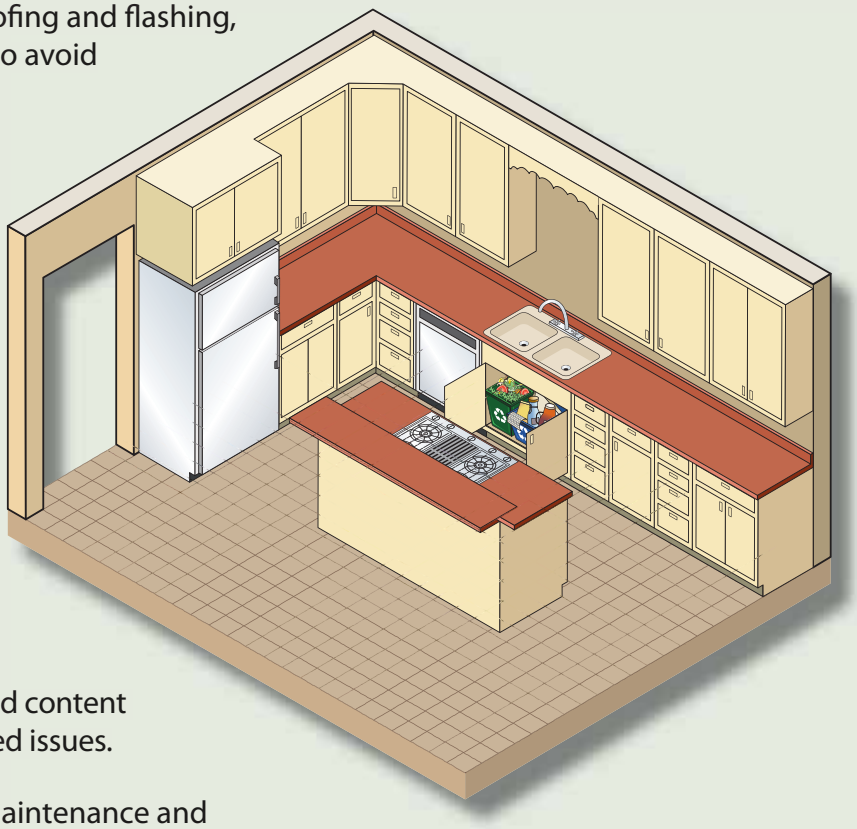
- Conduct a whole-house energy audit. Seattle City Light and PSE (Puget Sound Energy) provides home energy efficiency audits and retrofit financing, and various local utilities offer energy rebates (see resources on page 8).
- The US Department of Energy has documented that weatherization can reduce bills on an average of $215 per year. Weatherization reduces heating bills an average of 32%. According to ongoing program evaluation, weatherization efforts bring a return $1.83 in direct energy savings to the homeowner for every $1 spent on weatherization.
- Your remodel should be well-insulated and airtight. The home envelope should have minimum R-21 walls, R-38 roofs and R-30 floors (the higher the R-Value, the better!).
- Install new windows with a U-Value of .35 or lower (the lower the U-Value, the better!).
- Upgrade to ENERGY STAR® rated heating equipment, appliances and light fixtures. These appliances use up to 50% less energy and water!

- Install a tankless hot water heater.
- Scalding water is a concern for seniors: turn down your water temperature and save.
- Install dimmers, timers, occupancy sensors and/or motion detectors to reduce energy use.
- Consider alternative systems, such as solar hot water or a photovoltaic (PV) system to generate your own energy for a long time to come.
- Install a heat recovery ventilator to make sure no energy is wasted.
- Install high-efficiency toilets with EPA's WaterSense label, or install dual-flush toilets rated at 1.28 gallons per flush or less.

Green Materials & Healthy Indoor Air

Poor indoor air is an urgent public health risk. Air pollution inside a home is 2-5 times higher than outdoors. In addition, off-gassing of volatile organic compounds (VOCs) from flooring, cabinets, paint, and other finish materials affects air quality. Material choices directly affect the environment, from manufacture to disposal.

- Before you start your remodel, evaluate your home because it may contain materials with lead paint, asbestos, or mercury. Make sure your contractor properly removes and disposes of these toxic materials.
- Maximize natural light and ventilation to avoid mold, allergens and health problems like asthma.
- Use high efficiency filters labeled MERV 13/HEPA air filters.
- Check your home for proper waterproofing and flashing, and grade slope away from the home to avoid moisture issues.
- Consider sustainably harvested products, like wood certified by the Forest Stewardship Council.
- Select materials made with non-toxic paint, finishes and adhesives and that contain low- or no-VOCs and no urea-formaldehyde.
- Limit carpet use. Carpets trap dust and pollutants and new carpet can release harmful VOCs for a long time.



- If using carpet purchase wool or recycled content carpets for durability and allergen related issues.
- Choose durable materials to save on maintenance and replacement costs.
- Select recycled or rapidly renewable materials, such as recycled glass tile or bamboo flooring, wheatboard cabinets or recycled content counter tops.
- When possible, incorporate salvaged materials from your own home to reduce waste, or purchase salvaged materials from local stores to reduce transportation needs and support your local economy.

This material will be provided in alternate formats upon request.

King County Solid Waste Division
206-296-4466,1-800-325-6165, ext. 6-4466, TTY Relay: 711

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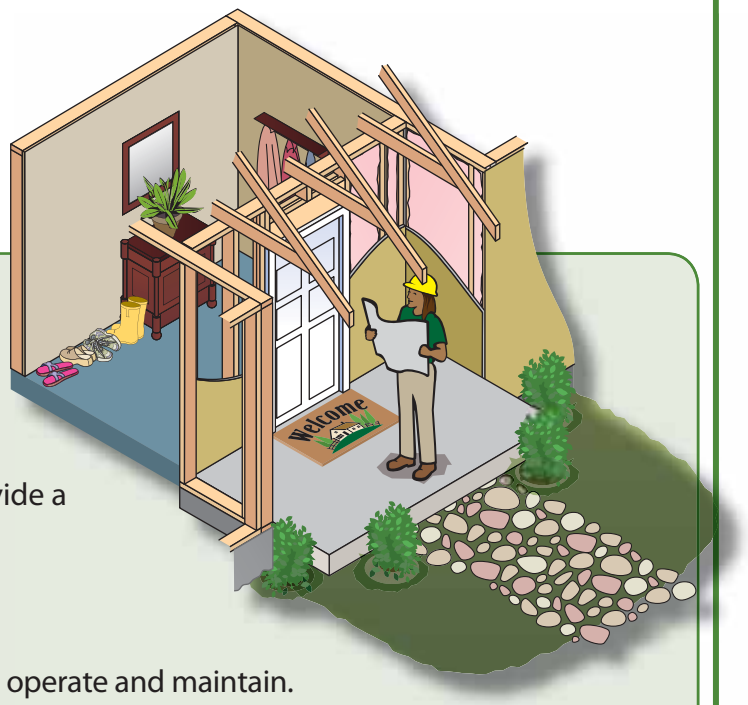
What about Cost?

In most cases, a green and or Universal Design remodel adds little to no extra cost. For example, it costs no more to build a slightly wider hallway to improve accessibility for wheelchairs or walkers. Moreover, the real cost benefits occur over the long term, so it's important to expand your cost horizon. In fact, the price of putting off home remodels for senior living can be high:

- Leaving the home unchanged increases odds of a fall or accident, and increases chances of earlier need for expensive senior housing or assisted living facilities.
- Preparing now for long term use avoids expensive or unsightly add-ons later on.
- Increase the value of your home and make it attractive to other seniors by adding an elevator.
- Living in a healthy home with good air quality may help avoid future medical bills.
- Your home will be attractive to future buyers who desire similar long-term benefits.
- Making changes to your home can extend your independence by years, which makes good financial sense. For the best value in home remodeling, start early and adopt a long-term approach.



Benefits of a Green Remodel

A Healthy Home
Selecting non- or least-toxic materials and incorporating design features to maximize ventilation and natural light can improve indoor air quality and provide a heightened sense of well-being.

Cost Savings
A Green Remodel will save you money in the long run:
- Products chosen for efficiency and durability cost less to operate and maintain.
- Energy and water efficient appliances reduce your utility bills.
- Universal Design is attractive to buyers so your home may sell at a premium.
- The longer you are independent in your home, the longer you may avoid expensive out of home care.

Durability & Comfort
Durable materials, natural finishes, high quality lighting (aging eyes require more light to see effectively) and good design details create attractive, comfortable and lasting spaces that require little to no adjustment to accommodate new or future uses.

Added Value
Well-planned home remodels hold their value over time. Homes designed to welcome various ages and abilities are marketable to a larger population, a key benefit for resale.

Environmental Efficiency
Green remodels consider resource efficiency, waste minimization, green operations & maintenance, habitat and open space protection, and improving air and water quality.

RESOURCES - General Green Building Resources

American Institute of Architects: Offers resources for anyone seeking information about architects and their colleagues. www.aiaseattle.org . . . . . (206) 448-4938

Built Green: The Master Builders Association of King & Snohomish Counties.
www.builtgreen.net . . . . . (425) 460-8238

EcoCool Remodel Tool: King County's one stop shop for green remodels and resources.
www.ecocoolremodel.com . . . . . (206) 296-8480

EcoHaus: A green home improvement store located at 4121 1st Avenue South Seattle, WA 98134.
www.ecohaus.com . . . . . (206) 315-1974

ENERGY STAR: An EPA/Federal government-backed program helping consumers through tax incentives.
www.energystar.gov 1 (888) 782-7937

Energy Star Northwest: A regionally specific program funded by the EPA.
www.northwestenergystar.com . . . . . 1(800) 539-9362

Green Pages: A directory from the Northwest Ecobuilding Guild of green contractors and materials. Publications are available at EcoHaus, the RE Store, and Second Use.
www.ecobuilding.org . . . . . (206) 575-2222

GreenTools: King County's Solid Waste Division green building program provides residential green building case-studies, remodel guides and more.
www.greentools.us . . . . . (206) 296-8480

Home Performance Washington: An association of Washington State businesses offering whole house energy efficiency, comfort, and indoor air quality review and services.
www.homeperformancewashington.org . . . . . (425) 390-4503

Home Resource Network of Seattle: A contractor referral network specializing in green remodels.
www.HRNseattle.com. . . . . (206) 524-4981

King County's Online Materials Exchange: http://your.kingcounty.gov/solidwaste/exchange/index.asp

King County's Sustainable Building Practices: Every resource you need for greening the built environment in King County. www.kingcounty.gov/environment/stewardship/sustainable-building.aspx

PSE Energy Advisor: Energy specialists assisting PSE residential and business customers.
www.pse.com/solutions/foryourhome/Pages/energyAdvisors.aspx 1 (800) 562-1482

Recycling Options: Locations of recycling centers, green living news and information on how to recycle almost anything.
http://your.kingcounty.gov/solidwaste/wdidw/ . . . . . (206) 296-4466

Re-Store: Salvaged building materials and building deconstruction services. Located at 1440 NW 52nd St Seattle, WA 98107 www.re-store.org . . . . . (206) 297-9119

Seattle City Light Conservation Help Line: (206) 684-3800

Second Use: Recovers reusable building materials from their remodeling and demolition projects.
7953 2nd Avenue South Seattle, WA 98108-4204 98108-4204, www.seconduse.com. . . (206) 763-6929