



A Program of the Master Builders Association in Partnership with King and Snohomish Counties

# **BUILT GREEN REMODEL CERTIFICATIONS**

## **2022 Pilot Version**

*Last updated: 11/02/2022*

The Built Green Remodel Checklist is designed for single-family remodeling projects that are holistically addressing their home's systems and functions to improve performance and function, but not significantly altering its structure.

The Remodel and Retrofit Certifications and labels represented in this checklist:

- Built Green Remodel certification
- Water Efficiency Retrofit Certification
- Energy Efficiency Retrofit Certification
- Net Zero Energy Label
- Zero Carbon Emissions Label

### **Built Green Remodel Certification**

The Built Green Remodel certification requires a holistic and systematic approach to a remodel. While it does not need to be a full-home or major remodel it will require all the functional systems within the home to be addressed to create a high-performance home.

This means superficial, decorative remodels, a partial remodel only pertaining to a few rooms, or exclusively to an addition will not be eligible for a Built Green Remodel certification, see more information on additions use case below.

Conversely, any remodel project that changes the existing structure or footprint by 75% or more, must certify under the Built Green [Single Family/ Townhome New Construction checklist](#). In practical terms, the scope of this amount of remodeling would include stripping all the interior finishes of the house including windows, plumbing, heating, wall material such as drywall, cabinets, fixtures and more. This will leave you with just the structural skeleton structure and foundation of the building. This level of remodel can also be referred to as a "full gut renovation" or major renovation.

### **Retrofit Certifications**

The Energy and Water Efficiency Retrofit certifications are available to projects that want to improve the performance, comfort, and resale value of the home, but not significantly alter or disrupt the structure.

### **Energy Labels**

The Net Zero Energy and Zero Carbon Emissions labels are available to all projects that improve the performance of a home to the point where the home generates as much energy as it requires over an annual period, and/or it eliminates the use of fossil fuels in the home and is 100% electricity-powered with zero on-site emissions generated from energy use.

## Step ladder approach to certification:

The Energy and Water Efficiency Retrofit labels can be obtained on their own. They can then be used to qualify towards a Built Green Remodel Certification in the future. They would take the place of the Energy and Site and Water sections in the Remodel Certifications requirements.

### Use Cases:

#### *Additions*

If the only new portion of the home is an addition, the home may still qualify for the Remodel Certification if they are addressing the energy and water efficiency of the whole home.

#### *Attached Additional Dwelling Units (AADU)*

1. If the AADU will remain a portion of the primary, existing structure, shares space heating and water heating systems, and is not sellable as a separate unit from the primary dwelling unit, then it would be treated as an addition under this checklist.
2. If a home is converting a portion of the primary, existing structure into an AADU to be condoized as a sellable ADU, and it does not use any of the primary unit's space heating or water heating systems, then the [Single-Family/Townhome New Construction checklist](#) would be required to certify the unit.

#### *Major Renovations/ Gut Renovations*

Any remodel project that changes the existing structure or footprint by 75% or more, must certify under the Built Green [Single Family/ Townhome New Construction checklist](#). The portions of the existing structure (i.e., framing, foundation, roof, etc) maintained as part of the final structure will be counted under the Deconstruction and Reuse, Salvaged Materials, and Carbon Neutral materials credits. The [Carbon Avoided Retrofit Estimator \(CARE\)](#) can be used to qualify for the embodied carbon calculation and reduction credit.

All requirements must be met to achieve any of the below certifications or labels.

## Built Green Remodel Certification Requirements

- ★ 3rd party verification required by program approved Built Green Verifier
- ★ Meet all applicable codes, regulations, and green building incentive requirements

### Energy

- Bring up attic and floor or crawl space insulation values to current WSEC-R insulation requirements.
- Blower door testing must achieve one of the following:
  - Homes built before 2009, ACH@50 7.0 or less, or document at least 20% improvement over an initial blower door test
  - Homes built after 2009, ACH@50 5.0 or less
  - Homes built 2015 or later, ACH@50 3.5 or less
- Ventilation must be balanced when ACH@50 is 3.0 or less.
- Commission/"tune-up" any existing and remaining HVAC and water heating equipment and systems. Any existing duct systems are to be PTCS duct leakage tested and which then reduces leakage by 50%. All ducts located in unconditioned space must be insulated to current WSEC-R insulation requirements.
- If you are going to replace HVAC system, must apply ACCA Manual J to size the appropriate system in BTU/sq ft. Minimum 15% of reduction in BTU/sq ft from existing baseline. Equipment must be high efficiency with UEF of 2.0 or higher and on [NEEA cold climate list](#).
- Combustion Air Conditioning Zone testing required on any combustion equipment
- Insulate any indoor water pipes that are exposed or added during remodel
- 100% LED lighting

### Site and Water

- Model at least 30% reduction in total water use, utilizing the Built Green Total Water Use modeling spreadsheet. Must achieve a minimum of 30% reduction in indoor water use, over a baseline of 53 gallons/per person/day.

Landscaping:

- Emphasize retention of mature or established vegetation. If vegetation is removed, healthy, mature shrubs and trees should be donated or sold for reuse by others.
  - Discuss relocation options with your contractor or landscaper; or use online social marketplaces to list the plants for rehoming.
- Prioritize native, drought-tolerant, or native-pollinator vegetation for all new landscaping
- No artificial turf or areas of impermeable lining covered by rocks present or installed
- Cover unvegetated areas or exposed soils with at least 3" of mulch
- Limit non-drought tolerant turf grasses to 30% of landscaping area or less

Irrigation (if applicable):

- If there is existing irrigation, upgrade the system with an evapotranspiration-based irrigation controller with a rain sensor and a leak detection system using a flow sensor. Program the controller to know the types of vegetation and soil are in each sprinkler zone.
- If new irrigation is installed, it is to be designed by a professional and installed in accordance with EPA WaterSense Program or equivalent. The system will be operated by a WaterSense-labelled evapotranspiration-based irrigation controller with a rain sensor and include a leak detection system using a flow sensor.

Infiltrate at least 60% of stormwater on-site; OR achieve a Seattle Green Factor score of 0.6 or higher

Any hardscape that is replaced or added must be either permeable hardscape or concrete that contains between 25-50% supplemental cementitious materials to reduce the use of carbon-intensive Portland cement. Excludes covered hardscape areas.

No zinc galvanized ridge caps, copper flashing or copper wires for moss prevention.

### **Materials and Indoor Air Quality**

Install moisture or leak detectors/alarms under sinks and tank-style water heaters. Water heaters with automatic leak shut-off valves preferred.

New kitchen exhaust fans installed are limited to 300 CFM maximum.

New spot fans installed must be Energy Star, under 110CFM, and quiet (1.0 or less).

- For ducted systems, use high-efficiency pleated filter, MERV 12 or better.
- Use less-toxic cleaners (e.g. EPA Safer choice, Green Seal labels preferred).
- Take measures to avoid problems due to construction fumes or dust for workers, occupants, and any existing ducting.
- Use a moisture meter and infrared scanner to identify moisture, air sealing, and insulative problem areas and correct them to code specifications.
- If an attached garage is present, it must be air sealed from the house with an automatic exhaust fan.
- Engage a salvage professional to conduct a salvage assessment of the areas in the home planned for removal or demolition.
- Create a jobsite recycling plan and maintain it. If project calls for large debris bins to be use, maintain at least two bins on site (one for waste, one for recycling). Use municipal composting where available.
- Using source-separation and comingled recycling facilities, project must receive an overall construction waste recycling rate of 50% or better. Unlike new construction projects, all demolished materials are included. See [Built Green Recycling Guidelines](#) for instructions on using source-separation and comingled recycling facilities.
- All new materials used in the home must include at least one indoor air quality (IAQ) attribute. IAQ attributes include:
  - CARB II compliant or Greenguard Gold Certified
  - No-added Urea Formaldehyde-free certified
  - Low or ultra-low VOC for wet-applied materials
- At least 75% new materials used in the home must include at least one environmental attribute. Environmental attributes include:
  - Rapidly Renewable with a harvest cycle 10 years or shorter
  - Carbon-storing, Carbon-neutral, or Climate-positive
  - Salvaged or reclaimed material
  - Recycled Content or upcycled from industry by-products (highest percentage available for material type)
  - Product certified by a recognized 3<sup>rd</sup>-party certification. Wood products must meet [Built Green's Wood Certification Guidelines](#), Tier 1 or 2.
  - Product has a minimum life cycle of 50 years
  - Raw materials sourced and product manufactured all within 500 miles

- Use no endangered species or old growth wood, includes conflict woods like Ipe, aka “Ironwood.” Excludes salvaged lumber materials.
- No new PVC or vinyl products installed on or inside the home (e.g. flooring, siding, windows, fencing, decking, etc)
- Any foam insulation [rigid or spray] must have a Global Warming Potential (GWP) of less than 6. (excludes miscellaneous use for air sealing). May not contain CFC, HCFC, HFC, HFO, or XPS

### **Homeowner Education and Operational Maintenance**

- Provide a homeowner’s kit that includes
  - Maintenance checklist of building and landscaping systems to maintain optimum performance. Checklist items should be categorized by frequency and recommended season for carrying out. Identify any checklist items where it is recommended or required by manufacturer warranty for maintenance by a professional.
  - All contractor and manufacturer warranty information for all new components in the home, and list of contacts should a warranty issue arise.
  - Provide Energy Efficiency Performance Summary report and Water Efficiency Performance Summary report

## **Water Efficiency Retrofit Certification Requirements**

- ★ 3rd party verification required by program approved Built Green Verifier
- ★ Meet all applicable codes, regulations, and green building incentive requirements
- Model at least 50% reduction in total water use, utilizing the Built Green Total Water Use modeling spreadsheet. Must achieve a minimum of 30% reduction in indoor water use, over a baseline of 53 gallons/per person/day.
- Landscaping:
  - Emphasize retention of mature or established vegetation. If vegetation is removed, healthy, mature shrubs and trees should be donated or sold for reuse by others.
    - Discuss relocation options with your contractor or landscaper; or use online social marketplaces to list the plants for rehoming.
  - Prioritize native, drought-tolerant, or native-pollinator vegetation for all new landscaping
  - No artificial turf or areas of impermeable lining covered by rocks present or installed

- Cover unvegetated areas or exposed soils with at least 3” of mulch
  - Limit non-drought tolerant turf grasses to 30% of landscaping area or less
- Irrigation (if applicable):
- If there is existing irrigation, upgrade the system with an evapotranspiration-based irrigation controller with a rain sensor and a leak detection system using a flow sensor. Program the controller to know the types of vegetation and soil are in each sprinkler zone.
  - If new irrigation is installed, it is to be designed by a professional and installed in accordance with EPA WaterSense Program or equivalent. The system will be operated by a WaterSense-labelled evapotranspiration-based irrigation controller with a rain sensor and include a leak detection system using a flow sensor.

## Energy Efficiency Retrofit Certification Requirements

- ★ 3rd party verification required by program approved Built Green Verifier
- ★ Meet all applicable codes, regulations, and green building incentive requirements
- Bring up attic and floor or crawl space insulation values to current WSEC-R insulation requirements.
- Blower door testing must achieve one of the following:
  - Homes built before 2009, ACH@50 7.0 or less, or document at least 20% improvement over an initial blower door test
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- Commission/"tune-up" any existing and remaining HVAC and water heating equipment and systems. Any existing duct systems are to be PTCS duct leakage tested and which then reduces leakage by 50%. All ducts located in unconditioned space must be insulated to current WSEC-R insulation requirements.
- If you are going to replace HVAC system must apply ACCA Manual J to size the appropriate system in BTU/sq ft. minimum of 15% reduction in BTU/sq ft from existing baseline. Equipment must be high efficiency with UEF of 2.0 or higher and on [NEEA cold climate list](#).
- Combustion Air Conditioning Zone testing required on any combustion equipment
- Insulate any indoor water pipes that are exposed or added during remodel

- If there is a garage, pre-wire a minimum of 30 amps circuit for alternative fuel vehicle charging
- 100% LED lighting

## Net Zero Energy Label Requirements

- ★ Meet Remodel Certification or Energy Efficiency Retrofit Certification requirements
- ★ 3rd party verification required by program approved Built Green Verifier
- Design and remodel to achieve net zero energy using approved modeling protocols; requires an ERI or HERS of 0 or lower
- NZE homes must not include any use of combustible fuels inside the home

## Zero Carbon Emissions Label Requirements

- ★ Meet Remodel Certification or Energy Efficiency Retrofit Certification requirements
- Home is all-electric; must not include any use of combustible fuels inside the home. No exceptions for direct vent fireplaces or tankless water heaters.