

Voluntary Green Building Checklist - White Salmon, WA

For Developers, Builders, Homeowners & City Staff involved with city lands and buildings.

The following categories and suggested measures are inspired by the LEED (Leadership in Energy and Environmental Design) Green Building Rating System. The goal of LEED and the City of White Salmon is to create better buildings that:

- Reduce contributions to global climate change
- Enhance individual human health
- Protect and restore water resources
- Protect and enhance biodiversity and ecosystem services
- Promote sustainable and regenerative material cycles
- Enhance community quality of life

Minimum Standards

LEED certified buildings must meet these prerequisites which are a minimum standard for any Green Buildings:

- **Construction Activity Pollution Prevention** – During construction, soil erosion measures must meet EPA stormwater permit requirements or local standards.
- **Meter & Track Building Energy Systems** - Install metering and measuring systems to track energy use over time.
- **Minimum Energy Performance** – The project must meet minimum 2004 American Society of Heating and Air-Conditioning Engineers (ASHRAE) levels of energy efficiency as a minimum standard.
- **Fundamental Refrigerant Management** – CFC-based refrigerants, which deplete the ozone layer and cause global warming, are not allowed.
- **Storage and Collection of Recyclables** – The building must facilitate recycling of wastes generated by its occupants.
- **Indoor Air Quality** – The building must comply with minimum 2004 ASHRAE ventilation requirements to maximize indoor air quality as a minimum standard.
- **Environmental Tobacco Smoke Control** – Smoking must be prohibited or limited to designated areas.

1. Location & Transportation

- **Surrounding Density and Diverse Uses:** Conserve land and encourage development in areas with existing infrastructure.
- **Access to Quality Transit:** Encourage development in locations that have access to various forms of transportation.
- **High-Priority Site:** Encourage development in areas with development constraints (i.e. historic district, brownfield site, infill location).

2. Sustainable Sites

Buildings place a substantial burden on the surrounding environment. The measures listed are to protect the ecosystem:

- **Site Selection** - Building may not be developed on prime farmland, lower than five feet above elevation of 100-year flood event, on habitat for species on endangered or threatened list, within 100 feet of wetlands or local setback requirements, on land within 50 feet of a water body, or land which prior to acquisition was public, unless applicant provides compensatory public land.
- **Community Connectivity** - Building constructed on previously developed site and close to services is preferable - with pedestrian access to services.
- **Brownfield Site** - build and restore a previously contaminated site.
- **Preserve/restore greenfield** areas on as much of the site as possible. A "greenfield" is an area that has not been graded, compacted, cleared, or disturbed and that supports (or could support) open space, habitat, or natural hydrology.
- **Protect /restore habitat** - At undeveloped sites, limit disturbance to outlined distances from site structures. On previously developed or graded sites, restore or protect portions of open site area.
- **Stormwater Quantity Control** - Reduce runoff and improve water quality. Rain gardens, vegetated roofs and permeable pavement are all good strategies. Employ Green Stormwater Infrastructure. [What is Green Infrastructure? | US EPA](#)
- **Stormwater Quality Control** - Implement stormwater management plan that reduces impervious cover, promotes infiltration, eliminates source of contaminants and removes pollutants. Rain gardens and bioswales are green stormwater filter strategies.
- **Heat Island Reduction Roof** - Minimize heat island effects from new construction. Vegetated roof, undercover parking, solar PV on roof and use of reflective roof coatings such as white paint are good strategies.
- **Heat Island Effect non-roof** - Shade one-half of site or use materials that reflect, rather than absorb, solar rays.
- **Public Transportation Access** - locate development close to bus lines or other public transportation.
- **Bicycle Storage** - Provide secure bicycle racks and or covered storage within 200 yards of building entrance
- Provide **EV charging** stations. Provide preferred parking for EVs and hybrids.
- **Parking Capacity** - Do not exceed minimum zoning requirements for parking capacity and provide preferred parking for programs that facilitate shared vehicle usage.
- **Maximize open space** - provide vegetated open space equal to building footprint
- **Light Pollution Reduction** - direct interior lighting sources away from windows and illuminate only areas required for safety and comfort. See Dark Sky Lighting section 7.

3. Water Efficiency

Water use in commercial buildings can be reduced by as much as 30 percent through simple measures relating to landscaping and water fixtures.

- **Indoor Water Use Reduction** - Reduce indoor water consumption. Install low flow faucets (these may already be required), metering faucets, electronic eye faucets, low flow and dual flush toilets (these may already be required), waterless urinals, water efficient washing machines and dishwashers. Find water-saving products and tips at [WaterSense | US EPA](#)
- **Reduce potable water** use for building sewage conveyance.
- **Outdoor Water Use Reduction** - Reduce outdoor water consumption. Reduce irrigation in the surrounding landscape and reduce the project's water requirements by having water resistant plants and drip irrigation on at times of least evaporation.

- **Reduce Water for Landscaping** – Limit or eliminate use of potable water for landscape irrigation. Collect rainwater for irrigation.
- **Plant native** and drought tolerant plants.
- **Avoid turf** - Plant mow-no-more lawn alternative and let your lawn go brown during the late summer dry season.
- **Water metering** - Track water consumption to identify additional opportunities to save water.

4. Energy and Atmosphere

Buildings consume almost 40 percent of the nation’s energy and 70 percent of its electricity. As most domestic electricity results in emission of greenhouse gasses, buildings contribute substantially to global warming.

- **Renewable Energy Production** - Provide building electricity from renewable sources like solar & wind.
- **Optimize Energy Performance** - Invest in energy efficient appliances and create an energy performance target.
- **Storage** - Invest in energy storage to alleviate peak demand stresses on the grid
- **Energy efficient envelope** for your building using WA Energy Code as a minimum, and do better. Take your insulation wall R-values and window U-values down. Create a continuous envelope of insulation. Places like the roof-wall connection need special attention during design so that the ceiling insulation will not be compromised at the juncture.
- **Passive Solar** - Site your building to take advantage of sun and protect from prevailing winds. Passive solar energy is “free”, but requires thought during the design stage.
- **Instant Hot Water** - On-demand electric water heaters don’t store and heat water until it is needed
- **Use timers to keep heat off** when building uninhabited and use programmable thermostats to heat only when needed.
- **Use timers and motion sensors** for lighting to conserve energy
- Look for **electric alternatives** to natural gas when appliance shopping. Electric heat pump space and water heating, on-demand electric water heaters, and induction cooktops are examples. Find information at <https://www.energystar.gov/>
- **Commissioning of Building Energy Systems** – The commissioning program verifies that the building’s energy related systems are performing according to the owner’s project requirements. Commissioning should take place within 10 months of occupancy.

5. Materials and Resources

Construction waste amounts to as much as 40 percent to the total waste stream in the United States. These are measures to reduce waste and limit extraction from the planet. When choosing materials, think about the life-cycle of the product. For example, Steel is 100% recyclable, but concrete can only be downcycled, it can never be concrete again.

- **Reduce Building Life-Cycle Impact** - Examples such as historic building reuse, renovation of abandoned buildings or building material reuse all meet the requirements.
- **Divert construction waste** - If you are doing demolition, re-use all that you can from the existing site. Take good used materials to Gorge Rebuild-it Center Hood River, or other reuse stores. Try to keep existing buildings in service.
- Use salvaged, refurbished or **reused materials**

- Use materials with **Recycled Content**
- **Regional Materials** of building materials or products must be extracted, harvested or recovered and manufactured within 500 miles of the project site. The closer the better.
- Use **rapidly Renewable Materials** like cork, straw and bamboo.
- **Sourcing of Raw Materials** - Use products that are sustainably sourced.
- Use wood products certified in accordance **with Forest Stewardship Council's** (FSC) criteria for wood building components. FSC products assure chain of custody sustainability.
- Use materials/products with an **Environmental Product Declaration** (EPD), which is a transparent, objective report that communicates what a product is made of and how it impacts the environment across its entire life cycle.

6. Indoor Environmental Quality (IAQ)

Americans spend an average of ninety percent of their time indoors, where they are often exposed to air pollutants as much as 100 times higher than outdoor levels. Here are points to assure clean indoor air.

- **Utilize Daylighting** - Reduce use of electrical lighting by creating spaces that utilize natural light. Clerestory windows are more energy efficient than skylights
 - Put lights on a timer or motion control as appropriate
 - Controllability of Lighting – Provide individual lighting controls for occupants. Studies show that natural light and ability to control one's environmental comfort results in less sick days.
- Use **Low emitting materials** such as low VOC (volatile organic compounds)
 - Low-Emitting Adhesives and Solvents – Indoor adhesives and sealants shall comply with published low-emitting requirements, such as Green Seal.
 - Low-Emitting Paints and Coatings – Interior paints and coatings shall comply with published low-emitting requirements.
 - Low-Emitting Carpet Systems – Carpets must meet requirements of Carpet and Rug Institutes Green label plus program.
 - Low-Emitting Composite Wood and Agrifiber – Wood and agrifiber shall have no added urea-formaldehyde resins.
 - Indoor Chemical and Pollutant Source Control – Minimize exposure of building occupants to potentially hazardous particulates and chemical pollutants. Use safe cleaning products pesticides
- **Controllability of Thermal Comfort** – Provide individual comfort controls for building occupants.
- **Employ Indoor Air Quality Strategies:** Naturally vented spaces, improved filtration, carbon dioxide monitoring, etc.
 - Tobacco Smoke Control – Smoking must be prohibited or limited to designated areas.
 - Outdoor Air Delivery Monitoring – Install permanent monitoring systems that provide feedback on ventilation system performance.
 - Increased Ventilation – Provide additional outdoor air ventilation to improve indoor air quality.
 - Construction Indoor Air Quality– Take measures to reduce indoor air pollution during the construction/renovation process.
 - Before Occupancy –Flush out building, perform air quality testing or take other measures to assure healthful air quality prior to occupancy.

7. Dark Sky Lighting

White Salmon's code adheres to International Dark Sky Assoc. standards. Be familiar with the code before purchasing fixtures. The following is an excerpt from [8.40.020 - Outdoor lighting standards, White Salmon Municipal Code](#).

- A. General Standards. The following general standards apply to all exterior lighting:
 - a. All exterior lighting shall be designed, located and lamped so as to prevent:
 - i. Overlighting
 - ii. Energy waste
 - iii. Glare
 - iv. Light trespass
 - v. Skyglow
 - b. The city encourages residents to turn off all non-essential exterior, commercial and residential lighting after business hours and when not needed. Exterior lights should be equipped with timers, and outdoor security lighting should be equipped with motion sensors.
 - c. Canopy lights, such as service station lighting shall be fully recessed or fully shielded so as to ensure that no light source is visible from, or causes glare on, public rights-of-way or adjacent properties.
 - d. Area lights. All area lights shall be full cut-off type fixtures.

8. Regional Issues

- Wildfires happen every year in grasslands, forest stands, and private property throughout the greater Columbia Gorge. Efforts should be made to reduce fire risk around the building. Find info here: <https://www.ucdwa.org/forestry-firewise> and here: <http://www.firewise.org/wildfire-preparedness/be-firewise/home-and-landscape.aspx>
- Wildlife urban interface - Because of shrinking habitat and natural food supply, bears, deer, & cougars do sometimes appear in town. Call (877) 933-9847 and ask for Todd Jacobsen, Wildlife Conflict Biologist. Work to preserve habitats and forests. Following LEED inspired green building Sustainable Sites will help preserve habitat.
- Erosion is an issue for a town on a hill. Green stormwater tactics and reduction of pavement help stormwater filter slowly into the earth, replenishing the water table and reducing erosion.

9. Building Operations Sustainability

- **Safe Cleaning supplies** - use of non-toxic biodegradable ingredients in eco-friendly packaging is an example
- **Alternatives to Pesticides** - use of plant derived substances, “soft” chemicals like soap, or introducing predators, are examples
- **Office Recycling** - designate an area in the office to be devoted to paper, ink and other office related recycling
- **Composting** - designate an area outside your building to be devoted to a compost bin, and designate a person to manage it.
- **Plastics recycling** - designate an area of your building convenient for both users and for pick-up of recycling, with appropriate bins