



SITE DEVELOPMENT

WHAT DO I NEED TO KNOW ABOUT SUSTAINABLE SITE DEVELOPMENT FOR MY WINERY?

CHECKLIST OF QUESTIONS TO ANSWER

1.0 SUSTAINABLE SITE EVALUATION AND SELECTION

- Will I provide parking that does not exceed local jurisdictional requirements and includes one dedicated carpooling space for each 20 spaces?
- Will the landscaping use no potable water after the first year?
- Will plants that are displaced during construction be replaced with native plants? ([SL](#))
- Will storm water runoff be managed to limit disruption and pollution of natural water flows during construction and post occupancy in compliance with local regulations?
- Am I selecting a site that is located on a parcel that is best suited for building purposes – meets zoning requirements, doesn't displace agricultural land, maintains or enhances sustainable ecology, and is a good neighbor for existing businesses? ([GBI](#), [WBDG](#), [BTP](#))
- Is the site located on an EPA brownfield parcel?
- Will fire-safe landscaping techniques be used for all new landscaped areas?
- Will bike racks be installed to encourage bicycle transportation?
- Will the design conserve existing natural areas, restore damaged areas, provide natural habitat, and promote biodiversity?
- Will I use porous paving material instead of asphalt or concrete for exterior driveways and parking areas?
- Will my landscape provide shade within 5 years of occupancy for 50% or driveways/parking areas?
- Is my site located close to the workforce to reduce daily transportation requirements?
- Is my winery being located close or adjacent to the primary vineyard to reduce grape transportation miles?
- Does the site allow for a gravity flow process?
- Will my building have a vegetated roof that covers 50% of the roof area?
- Will I plant trees along the south and west face of the winery building?

2.0 SUSTAINABLE WINERY DESIGN (REDUCE/REUSE/RECYCLE)

- Will I install power stations to support electric vehicles/forklifts?
- Will a built-in recycling center be installed for winery operations waste?
- Will exterior lighting utilize cut-off fixtures so no light enters the night sky?
- Will I provide natural ventilation by developing design goals, planning airflow paths, identifying building uses that require special attention, and selecting appropriate ventilation devices? ([CBE](#))
- Will I exceed state energy building insulation guidelines by 20%?
- Will my design allow for a minimum of 50% of barrel storage area walls that are in contact with the earth or isolated from the exterior by other interior spaces?
- Will I have a minimum of 75% of the regularly occupied spaces with daylight levels of 25fc and line of site views to the outside?
- Will I use mass or cavity wall construction around conditioned spaces for reduction of thermal transfer?
- Will I install louvers or operable windows at or near floor level to bring in cool night air?
- Will louvers or operable windows be located in upper parts of the winery to exhaust hot air accumulated in the winery during the day?
- Will the building utilize reused/remodeled in at least 50% of the existing walls, floor and roof? ([BG](#))
- Will the lighting systems in regularly occupied spaces be interlocked with interior daylight levels to reduce electrical consumption?
- Will I reduce potable water usage by installing a collecting tank for wash-down water, pH adjusted, and used for irrigation of grounds?
- Will I install solar or wind power if the site location is suitable?
- Will my architects have a minimum LEED AP certification provided by the USGBC? ([BW](#))
- Will a minimum of 25% of the buildings power requirements be purchased from Green-E or equivalent utility for a minimum of 2 years?
- Will I install wall trellis to grow vines or shrubs or architecturally screen walls to reduce heat gain?

3.0 SUSTAINABLE MATERIAL SELECTION

- Will my light fixtures be fitted with electronic ballast lights and motion sensors?
- Will the design of my lighting system be for best energy efficiency?
- Is my lighting system capable of scheduled operations?
- Is there potential for night cooling or other thermal storage concepts?
- Will I meet or exceed insulation code requirements?
- Will my windows meet or exceed the code required minimum performance?
- Will I purchase high-efficiency motors and refrigeration systems?
- Will I schedule operations to reduce overall system size and increase efficiency?
- Am I located in an area where solar panel installation is practical?
- Am I located in an area where wind power is practical?
- Will I install a CO2 recovery system? The recovered CO2 can be used in the winery for gassing or bottle-filling operations.

- Will I use electro dialysis instead of energy intensive cold conditioning of white wines? Will I install fuel cells?
- Am I selecting building materials that will reduce maintenance/replacement costs over the life of the building?
- Will I incorporate cool roofing strategies using infrared reflecting materials or living 'green' roofs?
- Are my building materials produced, salvaged, refurbished, or remanufactured locally? ([GSD](#))
- Are my building materials longer lasting compared to conventional products?
- Will I use sustainable paving materials instead of petroleum dependent asphalt on my roadways?
- Will I consider permeable paving products to reduce water runoff?

4.0 ENHANCES SUSTAINABLE ACHIEVEMENT – These questions are intended to encourage improved and exceptional sustainability practices in your site selection and development. For example, using salvaged materials totaling 10% of the overall cost of construction materials instead of the 5% indicated in section 3 above.

- Will I provide two dedicated carpooling spaces for each 20 spaces of provided parking?
- Will I exceed by 40% the state energy guidelines for building insulation?
- Will my site exceed open space jurisdictional codes by 40%?
- Will my landscaping provide parking and street shade (within 5 years of occupancy) for 100% of said areas?
- Will 100% of my barrel storage area walls be in contact with the earth or isolated from the exterior by other interior spaces?
- Will 100% of the regularly occupied spaces have daylight levels of 25fc and line of site views to the outside?
- Will my building be reused or remodeled using 100% of existing walls, floor, and roof?
- Will 100% of all wood used in the building be FSC-Certified?
- Will I have a minimum of 40% of materials being manufactured and processed within 500 miles to reduce transportation/carbon footprint?
- Will I have a minimum of 20% of the overall cost of construction materials contain post- or pre-consumer recycled material?
- Will my building have a vegetated roof that covers 100% of the roof area?
- Will 50% of the buildings power requirements be purchased from Green-E or equivalent utility for a minimum of 2 years?
- Will I have a minimum of 10% of the overall cost of construction materials be dedicated to reused or salvaged materials?
- Will I have a minimum of 4% of the overall cost of construction materials be dedicated to materials from rapidly renewable resources?
- Will my paint use 100% recycled content?

RESOURCES:

[\(BW\) Boxwood](#)

[CA Department Resources Recycling and Recovery](#)

[\(GBI\) Green Building Initiative](#)

[King County Sustainable](#)

[Avalon Wine Carlton Winemakers Studio](#)

[\(WBDG\) Whole Building Design Guide](#)

[Sierra Nevada Brewing Company](#)

[\(BEES\) Building for Environmental and Economic Sustainability](#)

[\(CBE\) Center for the Built Environment](#)

[\(BG\) Building Green](#)

[\(BTP\) Building Technologies Program, U.S. Department of Energy](#)

[\(SL\) Colorado State University, Sustainable Landscaping Guide](#)

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