



Cowhorn Vineyard & Garden Tasting Room and Case Storage

LOCATION

Jacksonville, Oregon

OWNERS

Barbara and Bill Steele

GREEN HAMMER DESIGN-BUILD TEAM

Architect – Erica Dunn, AIA, LEED AP

Construction Manager – Mike Liggett

Living Building Challenge Consultant – Alex Boetzel, Certified Passive House Consultant

BUILDING CERTIFICATION

Living Building™ Certification

PARTNERS

Energy Trust of Oregon's Path to Net Zero Program

Interior Design by Brienne Wasmer, 2Yoke Design

Structural Engineering by Zac Blodgett, The Structural Department

Solid Ground Landscapes



green hammer
Designed for People. Built for Life.™



A Living Building Rooted in Biodynamic® Farming Principles

Cowhorn Vineyard & Garden is located in Southern Oregon's Applegate Valley near a meandering river and oak forest. One of the first Demeter-certified Biodynamic® commercial farms and estate wineries in the United States, Cowhorn has garnered numerous awards and media attention over the years. Most recently, the 2014 Cowhorn Spiral 36 was named to *Forbes'* Top 10 Best Wines of 2015, the 2012 Cowhorn Syrah 20 made *Wine Enthusiast's* 2015 Editor's Choice awards, and the winery was highlighted in *Sunset Magazine's* "The Best of Wine Country" issue (October 2015).

"Our farming and winemaking philosophy is similar to our building philosophy – by focusing on restorative rather than extractive processes, we produce higher-quality wine with fewer resources."

– Barbara Steele, Cowhorn Vineyard & Garden founder and co-winemaker.

Using state-of-the-art technology, winemakers Bill and Barbara Steele gently nudge native yeast through the fermentation process on a mission to make fine wine with few inputs, going from grapes to glass as purely as possible. Cowhorn's 25-acre vineyard currently produces about 4,000 cases of wine a year—a mix of Syrah, Grenache, Viognier and white Rhône blends. The commercial farm produces about 8,000 pounds of produce—primarily asparagus—each year.

The World's First Winery to Achieve Living Building Certification

In May 2018, the Tasting Room at Cowhorn Vineyard & Garden officially earned Living Building™ Certification, making it the first commercial building in Oregon and the first winery in the world to earn the rigorous green building standard. Cowhorn partnered with Green Hammer, a unified design-build firm based in Portland, Oregon, to design and build the 2,200-square-foot tasting room, which includes a case storage area.

"We are always excited to work with clients who share our mission to create buildings that are regenerative, positive, and create a healthier environment for future generations,"

– Stephen Aiguier, Green Hammer founder and CEO

Administered by the Living Future Institute (living-future.org/lbc), the Living Building Challenge (LBC) is widely considered the world's most rigorous green building standard. As of May 2018, only 20 buildings worldwide have achieved Living Building certification.

To become a certified Living Building, a project must meet 20 imperatives within seven performance areas (or "Petals"): Place, Energy, Water, Materials, Health & Happiness, Equity and Beauty.

Living Buildings exclude the use of toxic and bioaccumulative substances pervasive in most building materials (known as "Red Listed" ingredients). Living Buildings also produce more renewable energy than they consume, maintain ecological water flow, and meet additional requirements related to each petal.

Becoming a certified Living Building requires actual, rather than modeled or anticipated outcomes. Since opening in May 2016, the 15.96 kW photovoltaic system on top of the Tasting Room at Cowhorn Vineyard & Garden produced, on average, 175% of the building's total energy needs. All of the building's water requirements are met by an appropriately sized, closed-loop system, where water is supplied by an on-site well and wastewater is treated on site and restored to the groundwater.

Read more about the green and restorative attributes of the Tasting Room at Cowhorn Vineyard & Garden on the back page.



Photo by Claire Thompson

The contrast of texture and color in the tasting room aims to celebrate the cycle of life, death and rebirth, inherent to all natural processes. - 2Yoke Design

A Herculean Effort

Of the seven Petals that Green Hammer tracked throughout the design-build process, the Materials Petal by far represented the greatest challenge, according to Alex Boetzel, Green Hammer's Director of Operations and Sustainability. He managed the LBC certification process for the Tasting Room at Cowhorn Vineyard & Garden. "Only those who have actually pursued this standard to its end truly understand just how extremely challenging an effort it is to achieve the Material Petal."

"Our design build team has diverse skills, a depth of experience and a process-driven unified team approach that enables us to respond to and address questions quickly and effectively," Boetzel says. "We selected, tracked and documented hundreds of materials in-house, which streamlined the decisions necessary to meet the incredibly rigorous metrics of the LBC."

LBC requires project teams to document the steps taken to avoid Red Listed materials. Because manufacturers are often not comfortable releasing critical ingredient information, it may take weeks of communicating with manufacturers only to find out that the building material does not meet the LBC Materials Petal requirements.

"The tasting room at Cowhorn Vineyard and Garden is a beautiful example of what a business can achieve when it engages a unified design-build team right from the start," says Amanda Sturgeon, CEO of the ILFI and author of *Creating Biophilic Buildings*. "By enlisting the help of an experienced, forward-thinking firm like Green Hammer, Cowhorn achieved what no other winery has been able to achieve while creating a beautiful, inviting space where the public can enjoy its wine."

Cowhorn Wine's Place in History

- Since the Living Building Challenge was launched in 2006, only 20 projects worldwide have achieved Living Building Certification.
- Cowhorn Vineyard & Garden is the world's first winery to achieve Living Building Certification.
- The Tasting Room at Cowhorn Vineyard & Garden is the first commercial building in Oregon to achieve Living Building Certification.



Visitors to Cowhorn's tasting room experience exceptional indoor air quality.

Petal Power – Measuring Actual Outcomes

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- **MATERIALS PETAL:** Green Hammer rigorously reviewed every single building material slated for installation—ranging from hardware to drywall—to determine if it was free of Living Building Challenge “Red-Listed” ingredients such as halocarbons like PVC and flame-retardants, bisphenol A (BPA), and heavy metals.
- **MATERIALS PETAL:** Mirroring Cowhorn’s approach to farming, the materials selected for the Tasting Room were handpicked for their simplicity, natural beauty and chemical make-up, yet they reflect the sophistication of Cowhorn’s award-winning wine-making process.
- **MATERIALS PETAL:** In an effort to boost the local economy and reduce carbon emissions, Green Hammer verified that the vast majority of building materials came from within 600 miles of the construction site or closer.
- **MATERIALS PETAL:** Green Hammer worked with Sustainable Northwest Wood to ensure that only Forest Stewardship Council®-certified wood was used in building construction.
- **MATERIALS PETAL:** Wood, cork, glass, steel and other natural building materials bring outdoor elements inside.
- **MATERIALS PETAL:** Construction waste was massively reduced, and refuse was reused or recycled whenever possible.
- **MATERIALS PETAL:** The project team accounted for the embodied carbon impact of the entire project and purchased carbon offsets for 80 tons of CO2.
- **EQUITY PETAL:** The tasting room is situated in the middle of a stunning working farm. Everyone is welcome and efforts are made to accommodate them.
- **EQUITY PETAL:** A bench along the main road allows cyclists and others to take a break and enjoy looking at the project.
- **BEAUTY PETAL:** Sited between the winery, vineyard, pump house and sheds, the new tasting room places patrons at the center of the farm, giving them an up-close look at Cowhorn’s sustainable approach to growing grapes and producing exceptional wine.
- **BEAUTY PETAL:** Akin to the wine it showcases, the tasting room is a physical expression and celebration of the beauty of Southern Oregon’s Applegate Valley.
- **WATER PETAL:** Cowhorn’s water system is an appropriately sized, ecologically closed-loop system, where water is supplied by an on-site well and wastewater is treated on site and restored to the groundwater.
- **WATER PETAL:** None of Cowhorn’s stormwater enters the municipal stormwater system or is purposefully discharged into the river. All stormwater is managed on site through bioswales and drywells.
- **WATER PETAL:** To reduce its water consumption, the tasting room utilizes low-flow water fixtures and native and drought-resistant plants. The building uses, on average, less water in a year than an average household of three uses in two months.
- **ENERGY PETAL:** The building incorporates a super-insulated, air-tight building envelope, high-performance HVAC systems (including advanced heat recovery ventilation), and 100% LED lighting—all of which help the tasting room and adjacent case storage building minimize their energy loads.
- **ENERGY PETAL:** Triple-paned, gas-filled windows meet the standards of Passive House Institute US and Passive House International.
- **ENERGY PETAL:** With a heat pump water heater, Cowhorn utilizes the most efficient water-heating technology available today.
- **ENERGY PETAL:** A 15.96 kW photovoltaic system produces 175% of the energy needs of the tasting room and cold storage area.
- **ENERGY PETAL:** Over the life of the PV system, 445 tons of carbon dioxide will be eliminated from the footprint of Cowhorn Vineyard & Garden. This is the equivalent of planting more than 10,000 trees, displacing the CO2 emissions from 50 homes and eliminated 216 tons of coal from a coal-fired power plant. In the construction of this new building, 75% of materials were sourced within 5,000 km of the construction site, thereby reducing the project’s carbon footprint.
- **ENERGY PETAL:** The building incorporates monitoring equipment that shows real-time data about renewable energy generation, raising awareness among the more than 2,000 annual guests.
- **HEALTH & HAPPINESS PETAL:** The building’s ventilation and heating systems provide exceptional indoor air quality. The building encourages people to gather together.



The exterior materials were selected as a physical reminder that great wine improves with age. The unfinished cedar will silver gracefully with age. – Erica Dunn, Green Hammer Architect

Primary Contacts

For more information about Cowhorn Vineyard & Garden, Green Hammer or the Living Building Challenge, please contact:

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