

What Every Old Building Wants To Be

By Joe Chauncey, LEED® Architect



BEFORE

AFTER

If you are thinking about building a winery and an existing building sits on the ideal piece of property, consider remodeling to give it a second life. Many wineries begin in a basement or a garage and when that space becomes cramped and inefficient because of a desire for increased capacity, winemakers start looking for other options. Although older buildings rarely offer the optimum winemaking environment they can be adapted into serviceable, sometimes beautiful solutions that can save time and money and possibly offer a vernacular that you would not be able to afford if you were to start from scratch. According to the U.S. Green Building Council, building construction and demolition adds 136 million tons of waste to U.S. landfills each year. An old brick building on Main Street, an unused barn, and small, older warehouses have all been successfully transformed in to working wineries through thoughtful adaptive reuse and are helping to reduce this number.

There are many things to consider when turning an existing building into a winery. At Boxwood the first three items to address on our list are:

- **Does the building have any contaminants?** You must test the building before committing to remodeling, especially if you don't know its history. This is a fairly simple process of collecting air and material samples and sending them to a lab for analysis. One such lab that is set up for this process is ETS in St. Helena, California. Through analysis, they can tell you whether the building has airborne or structural contaminants that would be harmful to your wine and whether they can be mitigated.
- **What are the building's construction materials?** Wood, concrete, masonry, steel? In general exposed wood and wine don't mix well except in the barrel, however, wood can be used in certain areas above the wash level in your fermentation room and if encapsulated with other materials. Wood should not be exposed in the barrel room where humidity will be high and the wine is stored for long periods of time. Steel is susceptible to the highly corrosive gasses that are a byproduct of fermentation unless it is properly coated and maintained. Cleaning chemicals like bleach can reside in unsealed concrete or masonry and will create problems with TCA contamination in the wine. With all of these potential issues you may be

wondering what will work, however, if used and finished properly each of these materials will work very well in your winery.

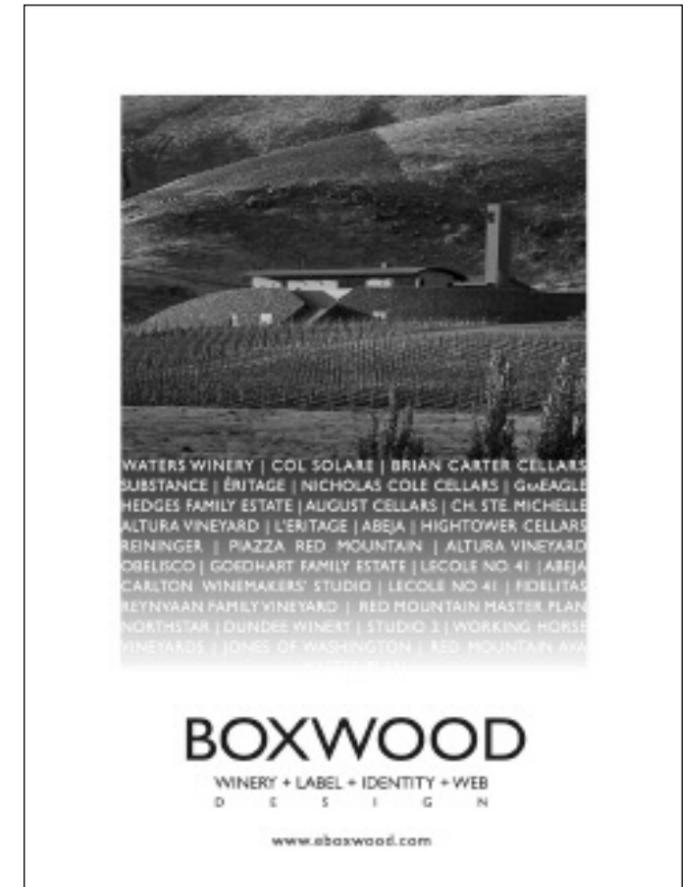
- **Is there any existing insulation?** If so, how much? For example, if you have an existing pre-engineered steel building or a pole structure, constructing a self-supporting insulated box inside the building shell is your best option for the barrel room. This is the only way we have found to get enough insulation without potential damage to the existing structure. An old thick walled masonry building without insulation would actually make a better winery than a thin walled insulated building. A "thin wall" building with a metal skin and batt insulation allows heat (and cold) to penetrate more quickly than a "thick wall" building made from concrete, masonry or stone with or without sandwiched insulation. Thick wall buildings absorb heat all day long and release it at night with little impact to the inside temperature. Avoiding rapid temperature changes is paramount so there is no substitution for mass.

Once you determine the answers to these questions, then the next set of issues concerning drainage, process waste, cooling, service access, pump or gravity, barrel stacking, fermentation tank sizes, etc. can be addressed.

We completed the remodel of Hightower Cellars last year and it offers an interesting case study. Tim and Kelly Hightower began making wine 13 years ago in Woodinville, Washington. While maintaining their day jobs they made wine nights, weekends, and during well timed vacation slots. Their first release was a 1997 Cabernet Sauvignon. In 2002 they bought 15 acres of prime vineyard land with water rights, a horse stable, garage, and a double wide home on Red Mountain in Washington State. They adapted the stable into a 1200 case/year, one room facility with a working patio where they literally "do" everything from crush to bottle. They built an insulated box within the shell of the stable which was their best option for barrel storage and had it completed in time for crush in the fall. Everything worked as planned but the following summer, with temperatures soaring into the 100 degree range, they discovered that heat would be their most formidable foe. A through the wall air conditioner ran 24/7 to keep the aging wine within the desired temperature range and they understood that this was not a sustainable, long-term solution.

As their volume grew steadily each year, they knew that they would have to do something to better insulate the building or tear it down to make way for a new winery.

The Hightowers asked Boxwood to develop a 10 year master plan for their property. Their goal was to find a way to grow their annual capacity to 2500 cases within five years, plan for a new home, and build a new 5000 case/year winery in 10 years. We determined that the best location for the new winery was at the site of the existing manufactured home and the best place for the new home was at the rear of their acreage to maximize views and privacy. Following this master plan meant that they could expand their existing winery and add a



new tasting room. When the new winery is built the old winery will become a guest house and case storage facility further extending its life.

We knew from experience that more insulation would help but would not be enough to get the kind of environment they needed to make their ultra-premium wine. We designed a super-insulated roof system for the existing building and the addition. We chose Durisol block for the barrel room addition and the new tasting room to gain both mass and insulation. This 12x12x24 inch form looks like an oversized concrete block from a distance, however, it is made from mineralized wood chips in a concrete matrix. It has a hollow core with an insulation panel and room for reinforcing steel and grout. It is designed to be covered with finishes like wood, stucco, or dry-wall unless you happen to like the look of the raw material (as we all did) and you are building in a climate with little rain like Red Mountain. We chose to skim-coat the block with grout and then sand it down to expose pieces of the wood fiber. The resulting texture is unique and handsome.

To reduce solar gain on the existing thin walled building we designed a bris soleil or sun screen. Normally used to shade fenestration, we felt that shading the walls would offer some of the same benefits. Z shaped furring was attached through the metal skin and dimensional "boards" made from fiber reinforced cement were fastened to the furring with a gap between each board. The new sun screen provided shade for the metal



together. The broad soaring roof provides protection from the sun while tasting wine and enjoying views of their Out of Line Vineyard, Yakima Valley, and the Horse Heaven Hills.

Hightower Cellars' adaptive reuse of an old stable as a winery offers the benefits of new energy efficient additions utilizing simple, effective, sustainable materials and the continued use of an existing building that helped it fulfill its dream – to remain a winery. As a bonus, we at Boxwood have all become big fans of their wine which we find to be perfectly balanced and extracted with combinations of black and red fruits, herbs, and Red Mountain terroir.

Hightower Cellars – Red Mountain, WA

www.hightowercellars.com

Owner/Winemaker.....Kelly and Tim Hightower
Design Team.....Joe Chauncey & Kristen Atchity Fritsch, Boxwood
Landscape Architect.....Jackie Hightower

skin and allowed any heat to be ventilated out of the cavity through the gaps between the boards. On the tasting patio the screen was made from recycled barrel staves in a basket weave pattern to add texture and interest to the wall. We were so excited about a new use for old wine barrels that we formed a work party to erect the screen with Tim, Kelly and Tim's mother, Jackie, who has her own vineyard on Red Mountain.

The tasting room addition allowed us the opportunity to celebrate, through the architecture, the place where it all comes

Joe Chauncey founded Boxwood, a Seattle architectural firm specializing in holistic and sustainable design solutions in 1989. Joe and his staff regularly work in the Midwest and currently have projects in Nebraska. The firm has completed wineries in Washington and Oregon. Kristen Atchity Fritsch, a Hastings, Nebraska native, celebrated her 10th anniversary with Boxwood earlier this year.

