PW
PRACTICAL
WINERY & VINEYARD
SEPTEMBER/OCTOBER 2009

30 years of service

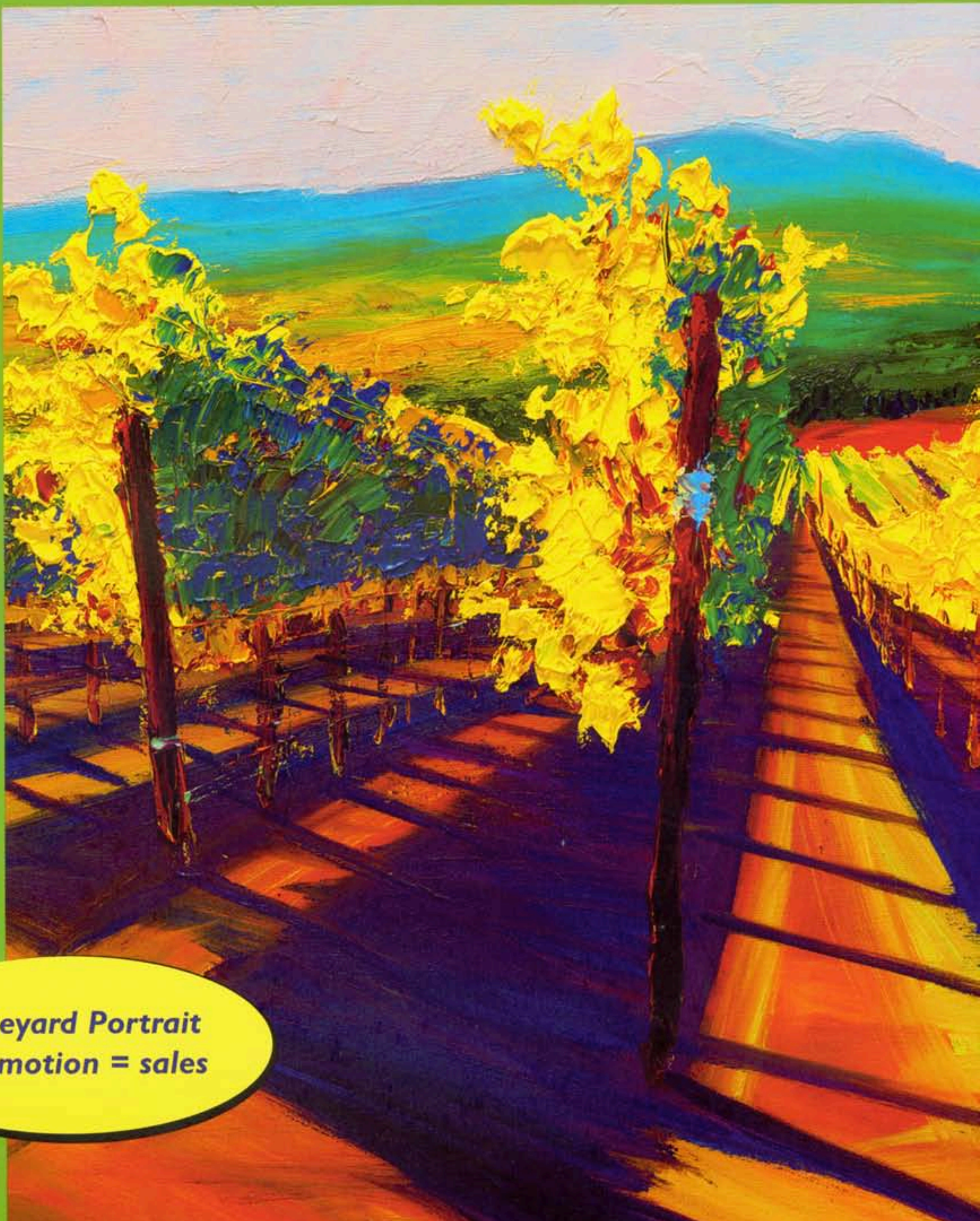
Carbon footprints of vineyard operations

BOTTLING SERIES —
Preventing oxygen ingress
Impact of oxygen levels

SMART VITICULTURE
Grape prices, wine quality

Key elements winery e-commerce

SHOWCASE
PROFESSIONAL SERVICES



Vineyard Portrait promotion = sales

Practical Winery & Vineyard
P.O. Box 3629
San Rafael, CA 94912-9830
Address Service Requested

PRSRT STD
U.S. POSTAGE
PAID
BIRMINGHAM, AL.
PERMIT No. 527

SILVER OAK CELLARS

Technology and brand legacy interwoven in new facility

BY Tom Taylor, Partner,
Matt Hollis, Project Manager
Taylor Lombardo Architects,
San Francisco, CA

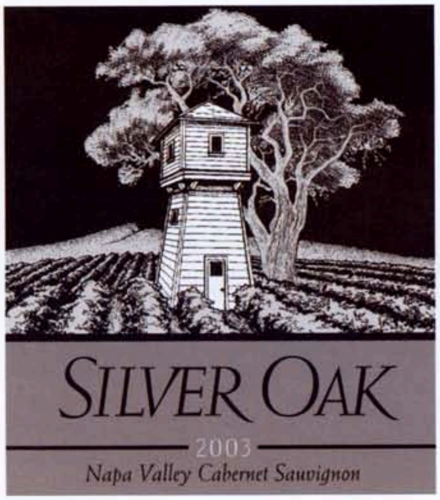
Silver Oak Cellars originally directed Taylor Lombardo Architects (San Francisco, CA), to design an interior remodel and a small strategic addition to its Oakville, CA campus. The existing structures varied in age and their complex configuration put constraints on production flow.

In January 2006, during the design process, a 100-year flood from the Napa River invaded the winery, that was followed by a devestating fire at Silver Oak Cellars in the same month. Both events elevated the required design solution from a relatively modest renovation to a complete demolition and redesign.

Because of Silver Oak's high public profile and loyal customer base, substantial efforts were made to maintain a connection to the winery's heritage. High winery visitation at both daily and biannual release parties warranted coordination to assure the smooth flow of guests and to separate public from non-public spaces. The previous facility mixed production's receiving/truck circulation with visitor autos and pedestrians.

Site planning was organized around a loop circulation to enable smooth delivery and fire protection. One-way traffic minimized the required driveway width, allowing for more landscaping and less impervious surfaces. A loose U-shape frames the central courtyard with expansive views to the west. The courtyard is the primary exterior event space, scaled to accommodate guests during the biannual release parties.

New buildings comprise approximately 68,000 square feet of enclosed space, densely clustered on the compact 3.7-acre site. Due to the area's tendency to flood, the entire site was raised between 3 and 5 feet with a 2:1 slope berm at the perimeter. The elevated building pad also provides an enhanced view from the courtyard and



built structures over the surrounding vineyards.

Primary building components include: Hospitality, Administration, Production, and Utility. Although public visitation would be concentrated in only certain designated areas, Silver Oak Cellars directed that there would be "no Back-of-House," meaning no areas of the project would be left aesthetically ignored.

The traditional agricultural vernacular associated with the classic stone wineries of Napa Valley served as inspiration for the design. Primary exterior materials consist of reclaimed stone, stained cedar siding, burgundy-painted aluminum-clad windows, and a zinc-colored metal roof. The new facility references the original pre-flood and pre-fire campus while striking a distinct image for the winery's future.

The **Hospitality Building** is the most visually prominent and centrally located of the structures. Although attached to the Production Building, the structural design is fundamentally different and required isolation from the metal production building. Stone cladding, sometimes on both sides of the wall, called for reinforced CMU (concrete bock) walls. Seismically, this very rigid building needs to move independently of the relatively flexible engineered metal structure of the Production Building.

The more public areas of the Hospitality Building received a traditional post and beam timber frame by Timber Creations. The large tasting

Natural light permitted by the central ridge skylight is supplemented by pendant fixtures suspended from the purlins of the metal roof above and centered on the tank aisles. Sheet drainage at the floor is directed toward a centered grated trench drain.

43 stainless steel fermentation tanks allow simultaneous processing in the event that all fruit is delivered and crushed in the same week.

WINERY DESIGN

Below the scissor-truss timber frame roof of the Hospitality Building, 2,825 bottles of assorted sizes stored in the climate-controlled VIW Room represent the entire Silver Oak Cellars *oeuvre* dating back to the first vintage in 1974.

room and bar, large dining area and kitchen, VIW (very important wines) wine library, history room, offices, conference rooms, lab, and winemakers area are all located in this building. Large sliding pocket doors between the dining area and the covered exterior space create a 30-foot-wide portal blurring the distinction between the interior and exterior.

The **Administration Building** is an L-shaped stone and board and batten structure which fits neatly into the northeast corner of the site, framing a manicured vegetable garden in a raised grid of Corten steel planters. The first floor includes wine and miscellaneous storage, an employee exercise room, and employee break area. Offices and conference rooms with views of surrounding vineyards and the Yolo Ridge beyond are on the second floor.

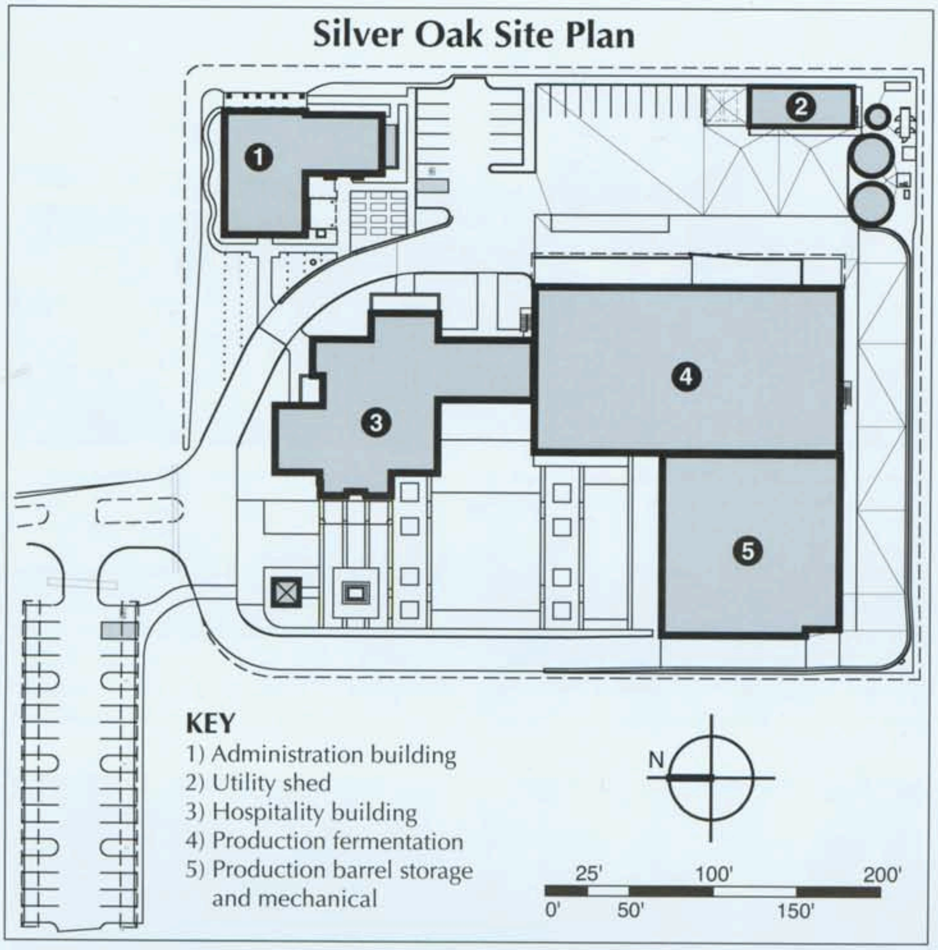
Tucked discretely in the southeast corner of the site, the **Utility Building** combines multiple functions previously scattered across the entire site into one structure. The building

The raised 3.7 acre building site hovers at the same height as the top of the adjacent vineyard. From left to right: Hospitality Building (with iconic water tower in front and obscured Administration Building behind), Fermentation, and Barrel Storage.

encloses the fire protection pump, process waste settling equipment, trash bin enclosure, and domestic water supply filtration equipment.

An adjacent yard includes a propane tank, 10,500-gallon domestic water tank, generator, electrical transformer, and two 46,000-gallon fire protection water tanks. From a facility management perspective, the consolidation of infrastructure components into one central "utility corner" is both convenient and practical.

The **Production Building** is a metal building clad with exterior finishes to resemble a large barn topped by three cupolas. Soule Building Systems sup-



plied a rigid frame structure composed of standard components within a "custom" design. A typical bay maximizes structural efficiency with a minimum number of members enabling a 10,700 square foot room to be unobstructed by interior posts. The rigid frame was delivered on flatbed trucks and erected quickly by crane, reducing costs significantly.

The metal building choice was desirable from a maintenance perspective. The owner accepted the upfront capital expense of coating the metal frame with a galvanized finish. This cost is offset by reduced maintenance, as the galvanized finish is highly effective against corrosion normally associated with high humidity or prolonged exposure to sulfur and other chemicals. Compared to an epoxy paint finish (10-year maintenance cycle), galvanized coatings are reputed to last in excess of 25 years.

The Production Building is illuminated by several alternating rows of 70-watt compact fluorescent domes and linear 32-watt fluorescent T8 lamps, all pedant-mounted at a consistent height above the floor and aligned with the tank aisles. The electrical lighting is augmented by a 10-foot wide x 40-foot long Kalwall ridge skylite which affords ample ambient light without undesired solar gain in a large space without climate control.

Although water resistance and durability were major considerations when choosing interior finishes for the Production Building, the silvery metal finish of the aluminum catwalks and stainless steel tanks are matched by the galvanized rigid frame and light gauge structural members maintaining a consistent palette throughout.

In addition to the galvanized structural members, rigid-insulated metal-lined polyurethane panels are clad with vertical-corrugated Galvalume®-finished metal panels. All perimeter interior walls are lined by a four-foot-high concrete stemwall base, stone-clad on the exterior. The stem wall provides an added measure of durability against errant forklift, scissor lift, and automobile traffic.

Black integral-colored concrete was used in all floors and stem walls. All vertical concrete surfaces are dry-sacked to minimize niches for bacterial refuge and to reinforce the homogenous black patina.

Silver Oak Cellars management does not allow the use of chlorine anywhere on the campus. In contrast to the warm-colored interiors of the Hospitality and Administration buildings where wood finishes are prevalent, there are effectively no wood surfaces in the Production Building.

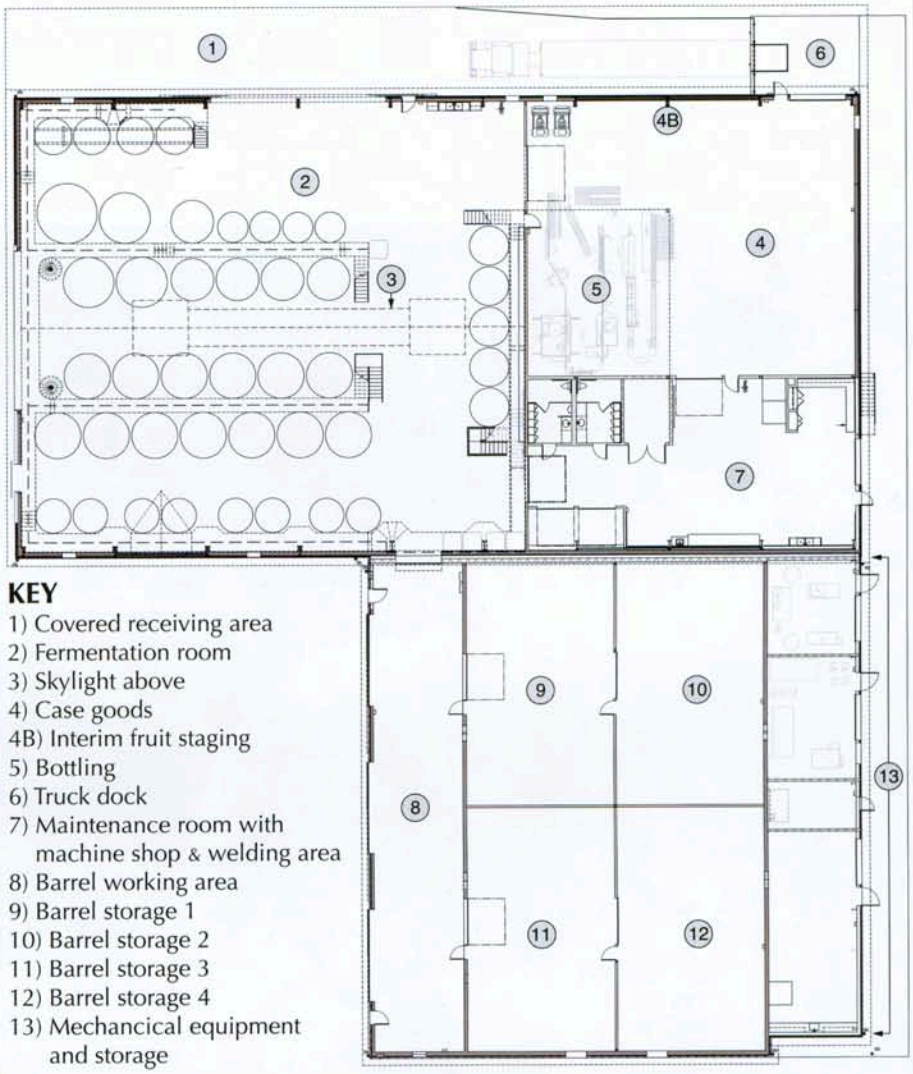
Forty-three stainless steel tanks of various capacities facilitate fermentation and blending of 30,000 cases of wine per vintage. For a traditional Bordeaux blend, Cabernet Sauvignon, Merlot, Cabernet Franc, and Petit Verdot are fermented separately and blended before barreling.

Insulated 4-inch diameter cold glycol and 2½-inch diameter warm glycol lines discretely hang from Unistrut trapezes below the catwalks. Because the tanks vary in diameter, the aisles range in width from 7 feet to 12 feet.

Tony LeBlanc (Chief Operating Officer) remarks, "We installed the Tank Net system for temperature control, and have been very pleased with the functionality. It is very easy to use, and with programmable preset parameters, we can quickly assign tank temperature protocols from a menu of options with specific alarm set-points. With these settings, we are assured that a list of employees will get an email or text message notification if the tank is not within our narrow band of parameters.

"The tanks are set up to automatically switch between heating and cooling modes, so the programs contain both high and low control. Tank Net integrates very well with our wine tracking software, Wine Makers Database (WMDB), and Tank Net provides online monitoring of facility functions for barrel room temperature and humidity, as well as glycol output temperature for chilling units."

Silver Oak Floor Plan



KEY
1) Covered receiving area
2) Fermentation room
3) Skylight above
4) Case goods
4B) Interim fruit staging
5) Bottling
6) Truck dock
7) Maintenance room with machine shop & welding area
8) Barrel working area
9) Barrel storage 1
10) Barrel storage 2
11) Barrel storage 3
12) Barrel storage 4
13) Mechancical equipment and storage

The **Covered Receiving Area** has a 20-foot deep and 182-foot long cantilevered awning structure without intermediary structural posts. Two 20-foot wide door portals create a flexible production floor. Since completion of construction, the configuration of sorting tables relative to the crushing and destemming equipment has been changed several times in an effort to optimize the assembly line and explore all options before settling on a single layout. This flexibility is allowed by strategically placed electrical and hose stations, ample drainage, and minimal structural obstructions.

The case goods room is directly adjacent to the truck dock for ease of quickly loading vehicles with outgoing bottled wine. This convenient location also facilitates the dual function of the refrigerated case goods room, which serves as interim storage for incoming fruit. As grapes are delivered in MacroBins® to the covered receiving area, forklifts move the MacroBins into the case goods storage room (maintained at 55°F). Chilled MacroBins stack neatly, waiting to be dumped into hoppers in the spill-over crush area of the fermentation room.

When not in use, all crush equipment is lifted via forklift into the loft storage area, through second-story garage doors. This area went largely unprogrammed during the design process and was deemed bonus storage space as it became clear during construction just how big it actually was. The floors are 1¼" thick epoxy-painted plywood for durability and maintenance. Electrical, refrigeration, and mechanical control panels are relegated to this back room, allowing the prime real estate of fermentation room walls to be kept clear for catwalks and pipe routing.

Because the **Barrel Storage** was conceived as a tilt-up concrete structure, the inherent flexibility and speed of construction afforded by the tilt-up method allowed the contractor the luxury of building other buildings first. As rigid insulation wraps the exterior of the perimeter concrete walls, consistent temperature of the thermal mass of the concrete is maintained and controlled by interior fan coil units.

Barrels are stacked six-high, in a "tight-pack" configuration on movable metal barrel pallets. In this manner, barrel pallets are arranged in a compact layout, which sacrifices access between the pallet aisles for greater density.

Although distinctions such as vineyard-block and harvest serve to determine where certain barrels are stored, all wine stored at the facility is Cabernet Sauvignon. Silver Oak uses new American oak barrels exclusively.

Ample CO_2 exhaust is provided on the perimeter wall bases, and fan coil units are rafter-mounted to maintain a constant 58°F temperature.

Because no racking or barrel working occurs in the barrel storage area, the concrete floor has no drainage or slopes.

A 108-foot long by 20-foot wide space was conceived as a supporting counterpart to the four barrel storage rooms, immediately adjacent. With a single trench drain running down its center, the gentle drainage slopes in the floor allow smooth forklift traffic flow that would otherwise be problematic with multiple area drains.

Towering barrel stacks are systematically deconstructed and spread into an interim single-high array for racking and barrel working. This area is also designed to open up to the courtyard, doubling as a serving area for large hospitality events.

Lining the south side of the Barrel Storage Rooms, a row of rooms form the heart of the facility's infrastructure. Storage, Electrical, Mechanical, and Plumbing Rooms were arranged based on logic of the pipe order, that is supported on stainless steel Unistrut mounted to the north wall. Electrical conduits are routed with glycol, water, and gas lines as they pass through the Mechanical and Plumbing Rooms and continue to Fermentation and Barrel Storage.

Conventional wisdom dictates that electrical conduits may run through "wet" rooms while glycol and water lines are discouraged from passing through spaces with an electrical transformer, distribution board, and photovoltaic support equipment where an inevitable leak would cause otherwise avoidable damage.

Conclusion

By working in close partnership during the planning phase and maintaining a high level of coordination during the construction phase, winemaker, architect, and general contractor were able to design/ build a winery tailor-made to suit Silver Oak's program requirements. ■

Taylor Lombardo Architects Design Team

Partner-in-Charge: Tom Taylor
Partner: Maurice Lombardo
Project Managers: Beth Bernhardt, Matt Hollis
Project team: Pam Lao, Shannon Slattery, Odessa Schneider
Contractor: Cello & Maudru Construction
Consulting Design Architect: Michael Folwell
Interiors: Martha Angus Inc.
Structural: Hohbach-Lewin
Mechanical, Plumbing, Refrigeration: The Engineering Partnership
Electrical Engineer: Ray E. Slaughter & Associates
Lighting: H. E. Banks
Civil: Summit Engineering
Landscape: Bertotti Landscaping, Inc.
Geotechnical: RGH
Solar panel installers: Sunlight Electric