Perched on a bluff high above the slow and muddy waters of the Missouri River sits a small A-frame cottage that was the humble start of one of the largest wineries in Missouri. In 1974, Curtis and Martha Bourgeois bought the cottage and lived there with their family while they built a home nearby. Several years later, one of the Bourgeois’ sons had the idea to plant a vineyard. The vineyard soon supported a home-winemaking hobby that quickly grew into a small winery, and by 1991 the winery was producing several hundred cases of wine. The family purchased an old brick building that used to house a restaurant and an abandoned hotel off Highway 70 to house the fast-growing winery.

The winery gained regional distribution and a strong following at the tasting room, but winemaking was split between cramped quarters inside and an outside area.

Winemaker Jacob Holman joined Les Bourgeois Vineyards in 1999 as a part-time staffer in the tasting room, he eventually moved into the lab and then production. For much of his time at Les Bourgeois, Holman was the one-man team in the cellar. He said that making wine outside may work in California or Washington, but it’s a little challenging in central Missouri.

During the summer, the winery had to spend a lot of money cooling the tanks down, and in the winter valves would freeze and Holman said he’d have to schedule routine cellar work around the weather. “There were times you couldn’t even get to the tanks,” he said.

By the time the company was ready to expand, Holman was the winemaker and played a key role in planning the expansion. He said he wanted a smooth flow of grapes from receiving and crushing through fermentation and bottling.

Aiming for smooth workflow
The old winery was housed in a converted restaurant with tanks, barrels and storage split between two rooms and the outside. Holman helped design a winery with

**Highlights**

- Missouri’s third-largest winery recently completed an expansion of its winemaking facilities.
- New winery equipment helps the winemaking team work with red hybrid grape varieties.
- Better workflow and technology has improved overall efficiency.

Tanks encircle an open area in the new winery to help facilitate better workflow.
tanks ringing a central work area and near the crush pad. “Having the space is by far the biggest benefit,” he said.

In 2010, the winery completed the 14,000-square-foot expansion and renovation that cost more than $2 million. The A-frame cottage is still standing today and is a popular place among locals and tourists to sip wine and while away a summer afternoon sitting on wooden decks perched above the river. The estate is also home to a stunning, glass-fronted restaurant with equally expansive views of the river and the modern winery with enough room to house a small brewery and distillery. Holmann is now part owner of the winery along with director of operations Cory Bomgaars, chief facilities engineer Jeff Lynch and Drew Lemberger, the former winemaker who oversees bottling, packaging and the warehouse.

When it’s time to harvest, Les Bourgeois uses its own Braud harvester, a piece of equipment that Bomgaars credits with greatly improving fruit quality. He said the machine gives him and Holman the luxury of deciding exactly when to pick.

The harvester dumps grapes into half-ton MacroBins that workers bring to the winery crush pad, which is located adjacent to the brick building that once housed the entire winery. The old winery building still holds some barrels and tanks used for wine storage. Holman said he doesn’t like to ferment in the old winery, though he’ll do so in a pinch (like this past harvest, when he ran out of tank space).

The old winery is home to some old, horizontal tanks that Curtis Bourgeois bought from a dairy in the 1980s. “We always called them pigs because of their shape,” he said. “So one year I decided to have a welder put ears, a nose and a tail on them.”

The “nose” is half of a beer keg, the “ears” are from a 55-gallon drum, and the tail is rebar. Holman said the tanks are now used to hold product used for distilling (see “One stop, all types of alcohol” on page 41) and are currently full of molasses wash.

A forklift driver will dump bins into a hopper located on a platform above the destemmer and press. The hopper is equipped with a screw conveyor that dumps grapes into a Vega 25 destemmer sourced through Carlsen & Associates in Healdsburg, Calif. A Waukesha must pump, also from Carlsen, then sends grapes directly to a press or to tanks. The juice and must is inoculated with a variety of yeasts from Laffort, Lallemand, Anchor, Lalvin and Fermicru.

Almost every lot ferments to dryness, and Holman said he co-inoculates all the reds with malolactic (ML) fermentation bacteria. “We started doing this four years ago,” he said. “With the temperatures falling at the end of harvest, we always had problems getting ML completed, so I changed strains and use the heat of the fermentation to get the ML through.”

White grapes are destemmed prior to pressing except for certain lots of Vidal grapes that are whole-cluster pressed for the winery’s sparkling wine.

The Les Bourgeois crew typically processes 30 tons per day and last year did a total of 680 tons.

The crush pad features two presses: a forklift driver will dump bins into a hopper located on a platform above the destemmer and press. The hopper is equipped with a screw conveyor that dumps grapes into a Vega 25 destemmer sourced through Carlsen & Associates in Healdsburg, Calif. A Waukesha must pump, also from Carlsen, then sends grapes directly to a press or to tanks. The juice and must is inoculated with a variety of yeasts from Laffort, Lallemand, Anchor, Lalvin and Fermicru.

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The crush pad features two presses: a second-hand Defranceschi and a new Puelo F-70 that Holman said is his preferred press because of its digital control that allow him to program his own press cycles or use one of the machine’s pre-set cycles.

When the crush pad isn’t being used to receive grapes, Holman said the area doubles as the winery’s barrel-preparation and staging area.

Barrels are washed with AaquaTools pressure washers, and when they are ready to be filled they are transferred to rooms beneath the old winery. Holman stacks the barrels on bunks with chocks, so he fills and racks them in place. The barrels are sourced from A&K Cooperage, World Cooperage, Canton Cooperage and Demptos Napa Cooperage.

Cellar workers also rack the barrels in place with Bulldog Pup racking wands and send the wine via transfer hoses to tanks for bottling with the winery’s GAI 3013 line fed with a flexible impeller pump by Prospero. Prior to bottling, all wines (except a Port-style wine) are filtered with a Velo Acciai unit. The wines are bottled in Vitro Packaging bottles, closed with Amorim corks and then sealed with Lafitte capsules.

Les Bourgeois produces a line of a sweet Concord and Riverboat red and white blends as well as a “Pink Fox” at around $10. Norton, Chardonel and Chambourcins sell for around $20. The winery also features a regular “Collector Series” of wines packaged with labels featuring original artwork. The 2012 Collector Series wine is a Vignoles/Traminette blend that sells for $25. Glazers distributes Les Bourgeois throughout the Midwest.
Technical upgrades make life easier

In addition to the extra space, Holman said he also has enjoyed working with the winemaking software VINx2, which replaced the pens and notebooks he used before. The software allows him to upload data from a desktop or mobile device as well as access data whenever or wherever he needs it. “That’s been a pretty good efficiency.”

A VinWizard system controls tank temperatures. Les Bourgeois has 53 tanks that range from just about 130 gallons to 12,000 gallons. Holman purchased most of them from Mueller in Springfield, Mo., and Spokane Industries in Spokane, Wash.

He said technical tastings used to happen in the basement below the restaurant, but the new sensory room affords a quiet and spacious area for analysis and discussion among the winemaking team. The winery’s former lab had barely enough space for one person, but now Holman can have a team of staff and interns running basic analysis on equipment by Fisher Scientific. (See “Triage for a Basic Wine/Grape Lab” on page 74.)

One piece of new equipment that Holman credited with helping to improve wine quality almost immediately was a Del Ozone machine. He said in the past the winery experienced some sanitation problems, but incorporating ozone has made it much easier for Holman to ensure the cellar team uses a standardized and effective sanitation process.

Grapes are dumped into a Carlsen & Associates hopper on the crush pad. Most white grapes and all red grapes are destemmed with a Vega 25 unit. About 20% of each lot of Norton grapes are pressed to improve the skin-to-juice ratio.
With the new winery completed, Les Bourgeois Vineyards had some extra space in its old winery. Those areas have been filled through partnerships with a local brewery and a joint-venture distillery.

“What we’re doing at this corner is a collection of local beverage companies, which is really fun,” said Cory Bomgaars, the winery’s director of operations. “The idea is to get like-minded folk who want to make local, craft beverages.”

Broadway Brewing in Columbia, Mo., is renting some production space for its beers, and Les Bourgeois teamed with a distiller for a small spirits program under a separate label.

Les Bourgeois winemaker Jacob Holman said the distillery partnership could be used to produce Les Bourgeois-branded grappas and brandies as well as contract distilling for other wineries in the state. He said wineries could distill flawed wines or purchase high-proof spirit for fortified wines.

The partnerships will also enable the winery to offer visitors a peek at the manufacturing process of all three main types of alcoholic beverages from wine to beer and spirits. “It’s a little alcohol world,” Holman said. “From the tourism angle, both of those projects really fit with what we’re doing on the corner here.”

A.A.

Other new equipment and improved technology helps the winemaking staff deal with the intricacies of hybrid grapes.

**Hybrid winemaking**

Bomgaars said Norton, which is Missouri’s state grape, produces exceptionally small grapes that yield only about 3ml of juice. With such a high ratio of skin to juice, about 20% of every Norton lot is pressed to get the juice off the skins.

Once in the tank, Bomgaars said the small berries can coalesce to form sections of thick grape material in the cap that in turn create hot pockets in the tank. These hot pockets can lead to unwanted notes of earthiness or mushrooms in the finished wine. To prevent the hot spots, Holman said Norton pump overs are done with the “fire hose method,” or directly through a two-inch hose and with a punch-down device. “This is just eliminating the irrigator and spraying (the cap) by hand using the hoe to break up clumps as they come to the surface,” he said.

Other pump overs for red varieties are facilitated with a Waukesha pumping to an irrigator up top. The tank tops are accessed via catwalks that run around the inside perimeter of the building.

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WINERY AWA
Missouri

YEAR BONDED
1985

DTC SALES
30%

VINEYARD ACREAGE
30

OWNERS
Curtis M. Bourgeois, Curtis H. Bourgeois, Cory Bomgaars, Jacob Holman, Drew Lemberger and Jeff Lynch

VP WINERY OPERATIONS
Cory Bomgaars

WINEMAKER
Jacob Holman

Building the Winery

Architect
Stephen Bourgeois

Excavation
CL Richardson Construction, (573) 657-4523

General contractor
Huebert Builders Inc., huebertbuilders.com

Metal fabrication
Ceco Building Systems, cecobuildings.com

Concrete
Huebert Builders Inc., huebertbuilders.com

Winery refrigeration
G&D Chillers, gdchillers.com

Flooring
Line-X, Line-X of Central Missouri, linex.com

THE CHALLENGE
The cellar at Les Bourgeois Vineyards had been split between a cramped space in a former restaurant and an outside area. A multi-million dollar expansion now houses a modern winery designed for better workflow and improved winemaking efficiency.

Making the Wine

Sorting table/hoppers
Carlsen & Associates via New World Winery Equipment, enotools.com

Destemmer
Vega 25, Carlsen & Associates via New World Winery Equipment, enotools.com

Tanks
Mueller, Paul Mueller Co., paulmueller.com; Spokane Industries, spokaneindustries.com

Barrels
Canton Cooperage, cantoncooperage.com; Demplos Napa Cooperage, demptosusa.com; A&K Cooperage, (660) 456-7227; World Cooperage, worldcooperage.com

Barrel washing
Aaquatools, New World Winery Equipment, enotools.com

Barrel racking
Bull Dog Pup, Bulldog Manufacturing, bulldogmfg.com

Filters, filtration services
Velo, Scott Laboratories, scottlab.com

Winemaking software
Cellar management: VinX2 by JX2 Technology, winery-software.com.au; Tank controls: Winwizard, Wine Technology America, winwizard.com

Bottling line
GAI 3013, Prospero Equipment Corp., prospero corp.biz

Yeast/nutrients
Laffort USA, laffortusa.com; Anchor and Lalvin, Lallemand, lalemmandwine.com; Fermicru, Scott Laboratories, scottlab.com

Malolactic bacteria
1-Step Alpha, Scott Laboratories, scottlab.com

Lab equipment
Fisher Scientific, fishersci.com

Tank mixer
Guth Mixer, Scott Laboratories, scottlab.com

Presses
Defranceschi, Valley Pipe & Supply, valleypipe.com; Pueblo F-70, New World Winery Equipment, enotools.com

Ozone machine
Del Ozone, delozonefoodsafety.com

Oak additions
eVoak, Oak Solutions Group, oaksolutionsgroup.com

Tannin additions
Scott Laboratories, scottlab.com

Pumps
Waukeshas, Carlsen & Associates, carlsenassociates.com; Prospero, prospero corp.biz

Packaging

Bottles
Vitro Packaging, vitropackaging.com

Corks
Amorim Cork America, amorima.com

Label design
Steve Hicks, stevehicks101.com

Label printing
U.S. Tape & Label, ustl.com

Capsules
Laffite Cork & Capsule, laffite-usa.com

Winery Services

Laboratory services
Gusmer Enterprises, gusmerenterprises.com; ETS Laboratories, etslabs.com

Web sales/POS/inventory software
Micros POS, POS System World, possystemworld.com; Fishbowl, fishbowlinventory.com

Financing/bank
Wood & Huston Bank, woodhuston.com

Growing the Grapes

Varieties
Norton, Chardonel, Vignoles, Trameintte, Vidal Blanc

Trellis systems
Single high wire and VSP
Holman said the region’s white wines are excellent, and he’d put them up against any white wine in the world. Vignoles in particular makes great wine, he said. “The reds have their challenges. The lack of tannin is always an issue.”

For Norton in particular, Holman said he throws tannin at it whenever he can. He uses evOak oak dust at the crusher and then ferments with oak chips. The wine then ages in up to 70% new oak, depending on how much Holman thinks it needs.

“It’s an oak sponge,” Bomgaars said of Norton.

Some reds also need to be chaptalized to boost the Brix level for fermentation. Holman said he adds fructose and glucose with cane sugar. He said he worked with Scott Laboratories to engineer the winery tanks to accommodate a Guth mixer that does an ideal job of incorporating the sugar addition.

Hybrids may have some unique challenges, but Bomgaars and Holman say the new winery makes the entire production process much smoother and more efficient.

With the new winery, plans for an expanded hospitality area, the restaurant and original A-frame, Les Bourgeois is poised to continue to grow with the wine industry in Missouri and the rest of the Midwest.