

Stratus Vineyards Ontario's First LEED® Certified Building

Integrated Green Design Dramatically Reduces Energy Needs

Right from the onset of design, the wine-making team at the new Stratus Vineyards had a strong vision of what they wanted to achieve: an environmentally friendly operation that produced super premium wines through a "Gravity Flow" process with the product cascading naturally from receipt of grapes through to finished wine.

The challenge: most gravity flow wineries are set into hillsides taking advantage of the slope to move the product in stages from high to low points in the winery. Located in the heart of Niagara-on-the-Lake's flat grape-growing region, Stratus did not have this hillside. Sandwell, partnering with Architect and project lead designer Les Andrew, accepted the challenge, and through innovative design and the use of central twin, 5000 litre capacity elevator tanks, created an ultra-modern showpiece for Gravity Flow winemaking. And, at the same time, the team developed a showpiece for sustainability and best practice environmental conservation features.

The final result has been recognized worldwide as the facility has become the first building of any sort in Ontario, as well as the world's first winery, to be certified under LEED® (Leadership in Energy and Environmental Design), the international standard in sustainable architecture.

A Winemaker's Dream

A sea of stainless and galvanized steel, the 1870 m² production floor has every conceivable piece of ultra-modern equipment. The grapes are carefully hand sorted using custom designed, gentle handling equipment to convey the fruit from picking boxes to elevated oak Grenier wood and stainless steel fermenters. After fermentation is complete, each individual fermenter is emptied into either a travelling bladder press or a



New Stratus Winery complex.



Alan Greer, Sandwell Project Engineer and Adrian Pembroke, Newman Brothers Ltd. on main production floor.

stationary basket press. Once pressed, the juice is moved up and down in the elevator tanks during the process, avoiding pumping through tubes, which winemakers believe can destroy the quality of the final wine. To quote the winemaker J.L. Groux, "in this winery, the grapes take the elevator, all mortals use the stairs". The exacting temperature and humidity control necessary to produce great wines is maintained throughout the process, not only during fermentation but also during barrel aging in specially

designed cellars. A centralized control system (available 24 hours a day through in-house PCs or via the Internet) allows the winemakers to control all facets of the process at a moment's notice.

A "Natural" Building

The complex includes almost 25 kilometres of power and lighting wiring systems, 8 kilometres of control wiring and almost 2.5 kilometres of copper piping to allow instant heating or cooling of the winemaking process or HVAC control of the barrel cellars, offices and retail areas of the winery. Yet, the true magic of the design is hidden 70 metres below the parking lot: an environmentally friendly geothermal heating and cooling system (based around 24 deep wells) that slashes hydro bills by 80 percent.


Energy efficiencies are further enhanced through the extensive use of daylighting. Natural light has been demonstrated to have a positive effect on productivity and psychological well-being – to say nothing of reducing reliance on HVAC systems.

Stratus Vineyards

continued from page 1



Assistant Winemaker Richie Roberts with central twin, 5000 litre capacity elevator tanks.

The production area has a band of Clerestory windows around the top of the structure while the office, tasting and retail areas feature extensive walls of glass. Natural light floods all areas. Adjoining roof overhangs screen out direct sunlight and resulting heat fluctuations during the summer months. A low-emission coating on the glass reduces heat loss from the building while still allowing light and heat to enter. Electric lights are equipped to ensure that areas with abundant daylight can be adjusted independent of those with less. 



Overview of Barrel Room (or Barrel Cellar). Richie Roberts tests the product.



Tasting Room looks out on surrounding vineyards and in on Barrel Room.



Juliet Dunn, Concierge, pours a glass of wine in Retail Area.



Retail shelves stocked with the final product.

Sandwell Project Gallery

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