



# THE OLD VINES RESTAURANT

West Kelowna, BC

Elegance in Wood



# THE HOODED MERGANSER RESTAURANT

Penticton, BC



*Hooded Merganser Restaurant*



*Old Vines Restaurant*

## Table of Contents

3	Introduction
4	<b>Hooded Merganser Restaurant Bar and Grill, Penticton, BC</b> <ul style="list-style-type: none"><li>• Building Design</li><li>• Fire and Life Safety</li><li>• Structure</li><li>• Sustainable Design Features</li></ul>
9	<b>Old Vines Restaurant at Quails' Gate Estate Winery, West Kelowna, BC</b> <ul style="list-style-type: none"><li>• Building Design</li><li>• Fire and Life Safety</li><li>• Structure</li><li>• Interior Millwork</li></ul>
14	Conclusion
15	Project Credits Hooded Merganser Restaurant Bar and Grill Old Vines Restaurant/ Quails' Gate Estate Winery

## Introduction

Eating and drinking are social activities best enjoyed in a warm, relaxing and comfortable atmosphere. These activities have had a long association with wood, which has traditionally been used for making tables, chairs and other furniture as well as for wine casks and beer barrels. Wood floors and exposed beams have been features of hostelrys and restaurants across the world for centuries, and continue to lend a unique quality to contemporary dining establishments. The two examples included here are both located in the Okanagan Valley in the southern interior of British Columbia. Although they are very different in architectural character, they both use wood with great effectiveness to create the appropriate dining ambience.



## Hooded Merganser Restaurant Bar and Grill

Penticton, BC

## Hooded Merganser Restaurant Bar and Grill

### Building Design

The Hooded Merganser Restaurant Bar and Grill is located on the Okanagan Lake waterfront in Penticton, British Columbia. This location marks the northern extremity of the Sonoran Desert, that extends southward, in a virtually unbroken line through the United States and into Mexico. The surrounding landscape is one of lakes, rolling hills, orchards and vineyards with the Okanagan Lake shore, itself flanked to the east and west by sculptural clay bluffs.

The Hooded Merganser is part of the larger Lakeside Resort Hotel, whose unique property extends into the lake as a legacy from the time when the CPR Railway delivered box cars to the lakefront, to be filled with fruit and floated up by barge to northern communities. This historic right-of-access to a wharf structure offered the opportunity for the restaurant to be built not on the lakeshore itself, but on a piled deck over the water. Access to the restaurant and the adjacent boat moorage is via bridges from the shore.





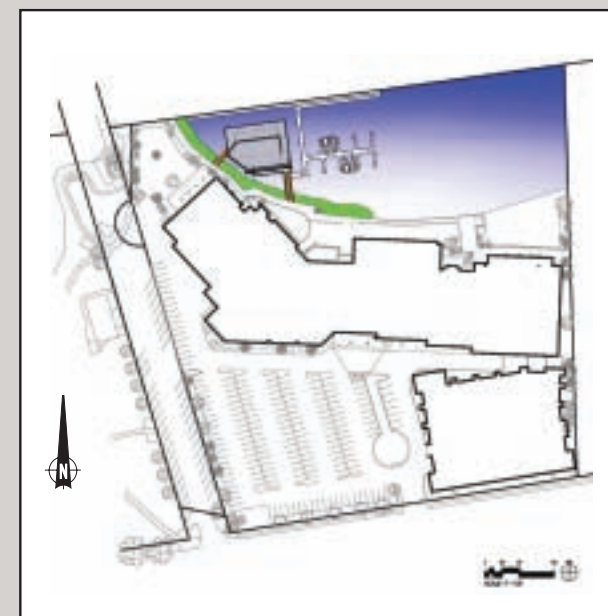
The Hooded Merganser is based on a simple and rational concept, executed with artistry and sensitivity to environment and site. The structure is expressive and exposed, truthful to the essential properties of the materials it employs.

The design team looked to the unique landscape for inspiration in establishing the form and character of the building. These elements include the motion of waves on the waters of Okanagan Lake and the distinctive shape of the clay bluffs.

The restaurant structure is a 6000 ft<sup>2</sup> (555 m<sup>2</sup>) single storey free standing building, of which approximately 4000 ft<sup>2</sup> (375 m<sup>2</sup>) is enclosed, and 2000 ft<sup>2</sup> (180 m<sup>2</sup>) is a covered exterior terrace.

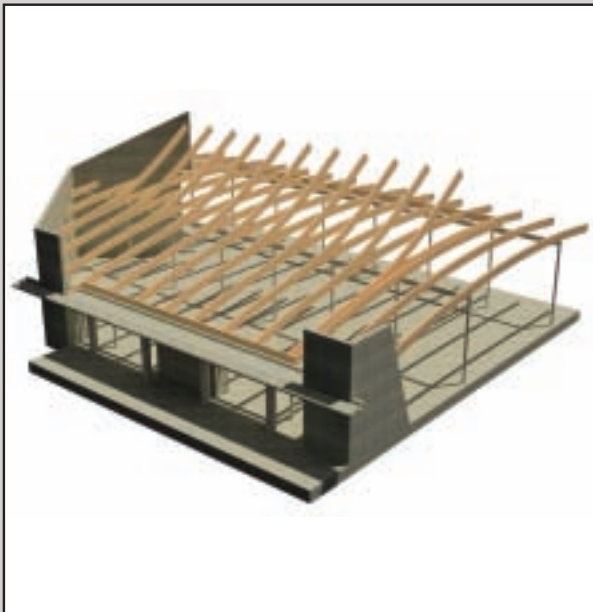
The enclosed portion of the building comprises a central eating area and bar of 120 seat capacity, flanked by support spaces including kitchen and washroom facilities. The eating area has direct access to the exterior concrete decks that overlook the lake.

The concept of a light curved roof buttressed by concrete masses was developed early in the design. The exterior was constructed from poured concrete walls acting as buttresses that provide the necessary shear elements on the east and west ends. (See *Structure Section*, page 7) A concrete gutter was used to tie the two buttress elements together as well as to collect rainwater and provide shelter to the approach from the access bridge.



The shape of the gutter reinforces the fluid nature of the roof form and collects potential high volumes of rain from sudden rain flashes common in the spring. As the gutter fills, the water pours out of the ends as a waterfall. Concrete was chosen for its durability as well as its sculptural properties.

Floating above the buttresses, the engineered wood roof structure incorporates a double curve that creates a dynamic effect, rising over the seating area from south to north and forming a clerestory extending the length of the building in the east-west direction. Expansive glass walls provide views not only from within the restaurant but also through the building, from the adjacent shore.



*The Hooded Merganser Restaurant rendering*





## Fire and Life Safety

As a restaurant facility, the Hooded Merganser is classified as a Group A, Division 2, assembly occupancy under the British Columbia building code (BCBC). The building is protected by an automatic sprinkler system and has a fire alarm system. With the building being only a single storey in height but having limited access for firefighting, by having the sprinkler protection, the maximum building area allowed for such a building under the BCBC is 51,700 ft<sup>2</sup> (4,800 m<sup>2</sup>). Such a building was permitted to be of either combustible or non-combustible construction,

or some combination, and the roof was not required to be designed to provide any minimum fire-resistance rating. The only fire-resistance rated construction required was for a 1 hour fire separation between the mechanical room and the restaurant area. Because of the distance of the building from other adjacent buildings, an extensive amount of window openings were permitted in the exterior walls and were not required to be protected by fire-rated closures.

With no fire-resistance rating required for the roof, the heavy timber roof elements and supports would not have to conform to the minimum sizes prescribed by the BCBC. With the exception of the heavy timber roof, the building has been constructed from non-combustible materials including a suspended concrete slab deck. Poured concrete was used to construct the buttresses that provide rigidity to the structure, while steel columns were used to support the wood roof.



## Structure

Due to the channelling effect of the hills that line the east and west side of the lake, Penticton experiences extremely strong winds, and this - combined with the owner's desire for a transparent building to maximize views - led to some challenges in the design of the structure. Resolving them effectively and achieving a lightness of appearance and agility of form required the structural engineer, *Equilibrium Consulting Inc.* to draw on the complementary structural properties of concrete, wood and steel.

The service areas on the west side of the building provided the opportunity to create a series of diagonal concrete shear walls that anchor one side of the roof, and provide resistance to wind loads in both the east-west and north-south directions. A light steel moment frame spans the north elevation, keeping the façade open for glazing, while an inclined concrete buttress, L-shaped in plan, anchors the southeast corner and at the same time creates a seating nook in the restaurant area.

The primary roof structure is a series of shallow glulam arches spanning north-south. These arches are 5 1/8 x 16 1/2 in. (130 x 420 mm) on 6 ft (1800 mm) centres and are supported on hollow steel section (HSS) columns at either end. The roof diaphragm is made up of 1 1/2 in. (38 mm) tongue and groove Douglas fir decking and a layer of 3/8 in. (9 mm) plywood. The diaphragm forces are collected by a drag strut in the form of a 3 1/8 x 16 1/2 in. (80 x 420 mm) glulam beam that connects the ends of the main arches on the south side of the building. At the



north end of the building, the projecting glulam ribs are finished with a transverse glulam fascia that protects the beam ends from exposure to weather.

The illusion of a double curved roof was created by inverting a second series of single curved glulams on top of the first, to create a continuous north facing clerestory. The form alludes to the motion of waves, as well as letting light into the interior without using extensive skylights, which would have weakened the roof diaphragm. The upturned glulams were notched into the main glulam arches and secured with vertical lag bolts. Fabricating them in two parts, and combining them in the field, reduced the overall dimensions of the glulam beams and reduced transportation costs.

A standing seam metal deck capable of bending to a double curve is laid on top of rigid insulation and provides the exterior finish that completes the structure.

The floor construction is a concrete suspended deck on steel piles filled with concrete. The floor finish is exposed concrete with radiant floor heating. Insulation is sandwiched between two layers of concrete. Concrete was chosen for the floor structure due to its durability in conditions of prolonged exposure to moisture.

In this building, every element is performing multiple functions: as structure, enclosure and finished surface – reflecting a truly integrated design process.

## Sustainable Design Features

The British Columbia Ministry of Environment required environmental improvements equal to the area of the building to be provided. The design team proposed 6000 square feet (equal to lake area impacted by building) of lake edge to be converted from concrete retaining walls to a naturalized landscape, to enhance fish and wildlife habitat. Today this new habitat is home for the many baby ducks and fish that gravitate to the green belt for food or to rest, and occasionally we even see a Hooded Merganser. The mechanical system incorporates radiant floor heating that connects to the new ground source heat pump system incorporated into the main hotel. The new heat pump system services all the buildings on the property and uses the laundry and pool as a heat sink. The large glazed areas include low E-glazing in anodized aluminum frames.





## Old Vines Restaurant at Quails' Gate Estate Winery

West Kelowna, BC

## Old Vines Restaurant at Quails' Gate Estate Winery

### Building Design

In 2005, the Old Vines Restaurant was added to the Quails' Gate Estate Winery property. Quails' Gate is one of the oldest family run wineries in British Columbia's Okanagan Valley. Located in West Kelowna, the vineyards occupy former orchard land, on a sloping site with panoramic views over Okanagan Lake. As agri-tourism has developed in the region, so Quails' Gate has added to its original facilities in order to offer a wider range of services and enhance the experience of its visitors.

Originally, the public face of the winery was a small wine shop, located in a historic, earthen floored farmhouse near the corner of the property at the intersection of two major roads. Then the winery added a covered barbecue pit for summer visitors in a location adjacent to the existing wine warehouse, overlooking the vineyard. It was this barbecue pit with its cedar post and beam construction that became the departure point for the creation of the Old Vines Restaurant in 2005.





Designed by *Ian Annand Architect*, the 6000 ft<sup>2</sup> (555 m<sup>2</sup>) restaurant carries on the architectural vocabulary of the barbecue pit structure, incorporating it into an extended facility that now includes a restaurant with kitchen, bar and inside seating for 90 patrons. The structure is almost entirely of wood, with exposed Western Red Cedar posts, beams, joists and decking.

The structural frame is continued outside the building on the south and west sides to create a covered outdoor seating terrace and to provide shade from the summer sun. The terrace offers spectacular views over the vineyard to the lake. Rough sawn cedar was used throughout, both for its appearance, and for continuity with the existing structure of the barbecue pit.

The simple palette of natural materials is extended to the floor and wall finishes and to the millwork in the bar area. The floor is slate, laid on a radiantly heated concrete slab and transitions to fieldstone pavers on the outside terrace. The west wall of the restaurant is entirely composed of sliding folding doors in wood and glass.



## Fire and Life Safety

The building is classified under the British Columbia Building Code (1998), as a Group A, Division 2, assembly occupancy. With its small size, the building was permitted to be of combustible construction and not required to be sprinklered. However, sprinklers were installed, as directed by the owner, as an additional safety measure, given the relatively isolated location of the site. Fire separation was required from the adjacent warehouse occupancy, but this was already achieved by the concrete tilt-up construction of the warehouse wall.





## Structure

The primary structural grid is 12 ft x 12 ft (3.6 x 3.6 m), the same module that had been used for the pre-existing barbecue shelter. The columns are 8 x 8 in. (203 x 203 mm) Western Red Cedar, and support two layers of paired Western Red Cedar beams running in opposite directions, which in turn support Western Red Cedar roof joists.

Each beam consists of two 2 x 10 in. (38 x 240 mm) select structural grade material, bolted through the column to the beam pair on the opposite side. Above these two layers of paired beams, 2 x 10 in. (38 x 240 mm) and 2 x 8 in. (38 x 190 mm) Western Red Cedar joists are laid at 16 in. (400 mm) centres to support 2 x 4 in. (38 x 89 mm) cedar decking.

At the rear of the building, structural engineers *CWMM Consulting Engineers Ltd.* provided lateral resistance elements using conventional 2 x 6 in. (38 x 140 mm) frame walls in the washroom and kitchen areas. However, at the front of the building it was necessary to install a 42 in. (1080 mm) deep truss - with steel bottom chord and diagonal bracing, and cedar top chord - between Hollow Structural Sections (HSS) columns one bay back from the exterior wall. This construction strategy was used to avoid shear walls or cross bracing that would have compromised views from inside the building, or access to the exterior seating area. These columns were clad with cedar to match the other posts.



## Interior Millwork

The Old Vines Restaurant and the nearby wine shop are also notable for the locally built bars, counters and storage units designed by Vancouver-based *Maxam Design*. The overall approach taken to the fit-out of the public spaces was driven by the desire to achieve a clean and uncluttered look, and to complement the straightforward cedar structure with simple and elegant finishes and fittings using a limited palette of natural materials.

To complement the light colour of the cedar structure, the bar, waitress station and display cases are finished in a dark coloured Wenge veneer, over medium density fibreboard and plywood casework, although the bar itself has an impressive solid Maple countertop. In some

places, the structural columns were finished with an additional layer of cedar to conceal bolt heads and create a shallow cavity in which to run electrical conduit to the column mounted light fixtures.

The wine shop features a 33 ft (10 m) long tasting bar that cleverly incorporates storage and display shelves, chiller units, point of sale terminals, sinks and spittoons. With a Maple veneer over plywood countertop, the tasting bar dominates the space. Reclaimed Douglas fir flooring adds an age-mellowed touch, while cedar wainscoting provides a warm backdrop for the rows of gleaming bottles in the many moveable display cases.





## Conclusion

In these restaurant projects, wood was selected for its ability to perform in a number of different roles. Most notably it continues its traditional association with the food and beverage industry, where it has long been key in the creation of a comfortable, warm and inviting ambience conducive to relaxed wining and dining. The two restaurants provide a contrast in their use of wood; Old Vines is a simple post and beam structure nestled unobtrusively into its hillside site, evoking a timeless simplicity, whereas the Hooded Merganser exploits the expressive potential of engineered wood to create a contemporary structure that sits like a sculpture in its prominent waterfront location. Both in their own way are equally successful.

# Project Credits

## Hooded Merganser Restaurant Bar and Grill

	Address	City	Prov.	PC	Phone	Website
<b>Client</b> RPB Hotels and Resorts	21 Lakeshore Drive	Penticton	BC	V2A 7M5	1 800 663 9400	www.pentictonlakesideresort.com
<b>Architect</b> Bevanda Architecture Inc.	208-399 Main Street	Penticton	BC	V2A 5B4	250 492 1005	www.bevanda.ca
<b>Structural Engineer</b> Equilibrium Consulting Inc.	202- 388 West 8th Ave.	Vancouver	BC	V5Y 3X2	604 730 1422	www.eqcanada.com
<b>Marine Engineer</b> Westmar Consultants Inc.	400-233 West 1st Street	North Vancouver	BC	V7M 1B3	604 985 6488	www.westmar.com
<b>Mechanical Engineer</b> Stantec Consulting Ltd.	400-1620 Dickson Ave.	Kelowna	BC	V1Y 9Y2	250 860 3225	www.stantec.com
<b>Electrical Engineer</b> Falcon Engineering Ltd.	210-1715 Dickson Ave.	Kelowna	BC	V1Y 9G6	250 762 9993	www.falcon.ca
<b>General Contractor</b> Greyback Construction Ltd.	402 Warren Ave. East	Penticton	BC	V2A 3M2	250 493 7972	www.greyback.com

## Old Vines Restaurant at Quails' Gate Estate Winery

	Address	City	Prov.	PC	Phone	Website
<b>Client</b> Quails' Gate Estate Winery	3303 Boucherie Road	West Kelowna	BC	V1Z 2H3	250 769 4451	www.quailsgate.com
<b>Architect</b> Ian Annand Architect	7133 Granville Street	Vancouver	BC	V6P 4X6	604 608 2640	www.iana-architect.ca
<b>Structural Engineer</b> CWMM Consulting Engineers Ltd.	2nd floor, 1412 West 7th Ave.	Vancouver	BC	V6H 1C1	604 731 6584	www.cwmm.com
<b>Mechanical Engineer</b> Cobalt Engineering	305-625 Howe Street	Vancouver	BC	V6C 2T6	604 687 1800	www.cobaltengineering.com
<b>Electrical Engineer</b> Falcon Engineering Ltd.	210-1715 Dickson Ave.	Kelowna	BC	V1Y 9G6	250 762 9993	www.falcon.ca
<b>Interior Design</b> Maxam Design International Inc.	604-675 Hastings Street	West Vancouver	BC	V6B 1N2	604 681 0548	www.maxam.ca
<b>General Contractor</b> Norson Construction Ltd.	1120 Stevens Road	West Kelowna	BC	V1Z 1G1	250 769 9324	www.norson.com

<b>Photography</b> Stephanie Tracey, Photography West Ltd.	3022 Tutt Street	Kelowna	BC	V1Y 2H5	250 860 3563	www.photographywest.ca
<b>Photography</b> Gord Wylie, BC Images & Prints Inc.	1000 Lakeshore Dr.	Penticton	BC	V2A 1C1	250 490 9088	www.bcimages.com



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