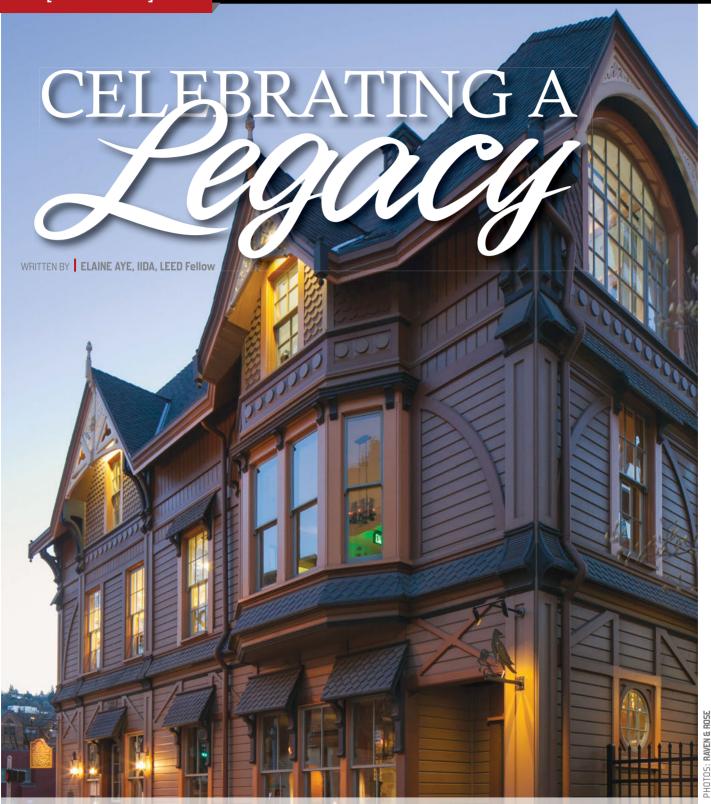
BUSINESS CASE FOR DEEP-ENERGY RETROFITS IMPROVE FENESTRATION PERFORMANCE FOOD WASTE TO ENERGY





Raven & Rose's owner and project team's dedication to sustainability resulted in extensive material preservation and reuse from the original interior and exterior of the Ladd Carriage House. As a result, the building remains on the National Register of Historic Places.

A NEW SUSTAINABLE RESTAURANT CREATES PARALLELS ACROSS TIME WITH ITS BUILDING'S HISTORIC ORIGINS

hen William Ladd arrived in Portland, Ore., in 1851, the newly incorporated city was mostly a trading post populated by a scant 820 people. Ladd came from New Hampshire—after a brief stop in San Francisco where he acquired a small liquor consignment—and opened up shop. He soon added eggs and local produce to his offerings, and his business acumen and holdings grew. As Ladd became a wealthy entrepreneur and early political figure, he bought land for his house, gardens and a carriage house for his horses in what now is downtown Portland.

Built in 1883, the Ladd Carriage House remains one of a handful of original structures to survive downtown development over time. During the past 131 years, the 7,061-square-foot carriage house eventually made its way onto the National Register of Historic Places. Now, the building welcomes the public into the Raven & Rose restaurant and The Rookery Bar, where Owner Lisa Mygrant makes clear connections to Ladd's life, the building's era and nature. The project received Gold certification under LEED



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for Retail Commercial Interiors, which is overseen by the Washington, D.C.-based U.S. Green Building Council.

According to Natalia Toral, Raven & Rose restaurant event and office manager, the owner was raised to live in harmony with the environment and LEED was a good fit for that. "Rather than approach the project

trying to figure out how to get points, she wanted to design for the smallest footprint we could in order to have a lasting impact," Toral recalls.

The owner worked with Portland-based firms, including Green Building Services (GBS), Carleton Hart Architecture, Innovative Designed Environments Associates (IDEA) Inc. interior design and Bremik Construction, to achieve sustainable aspirations while creating a premier restaurant.

Recipe for Success

The Ladd family sold the carriage house in 1926 and the structure was remodeled into mercantile space and offices. In 1969, a fire damaged the north elevation, which underwent repairs. The entire block was sold to First Christian Church in the 1970s

and the carriage house became home to a law firm before being listed on the National Register of Historic Places in 1980. Less than 10 years ago, however, plans for a new 23-story residential tower and underground parking garage on the block threatened the carriage house's existence.







Bars were thoughtfully created from recycled zinc (left) and Forest Stewardship Council-certified wood (right).



The building's original brick chimney was seismically unstable. After being carefully deconstructed, the circa-1883 bricks were reused as a wall that now frames the restaurant's wood-fired oven.

In 2007, a clever solution temporarily moved the 360-ton building a few blocks away during construction and returned it in 2008. A preservationist group restored the carriage house using a smattering of available historical photos. It was re-listed on the National Register of Historic Places in 2010 and Mygrant's family purchased the building the following year.

Designed in the late-19th-century English Stick style, the restored Ladd Carriage House was basically a shell with no pipes, ductwork or wiring when Mygrant considered it for her restaurant. "People are attracted to the space and so inquisitive about the building, and Lisa worked to make the interior complement the historic exterior," Toral explains. "As a result, there are so many things at Raven & Rose that speak to the historic influences both in the space and our operations."

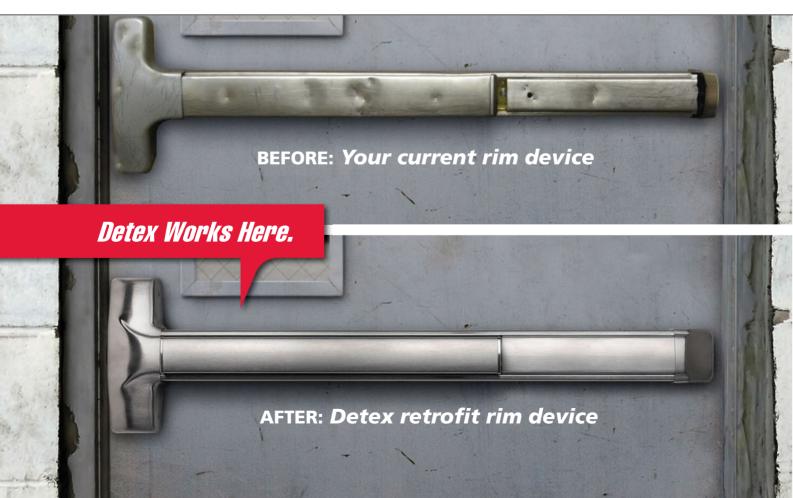
Mygrant turned the 3,000-square-foot first floor into a dining room with seating for 70 and the 3,000-square-foot former hayloft on the second floor into a bar that accommodates 50 guests. The east side of the building rises 3 stories with an additional 1,000-square-foot top section that once

served as residential quarters for Ladd's gardener and horse caretaker. This area is now Raven & Rose's offices.

Picture-perfect Solutions

Because the building was on the national historic register, the exterior had to remain unchanged, and this created a conundrum where ventilation was concerned. "In a restaurant, you have hundreds of little bits of equipment from the range hoods to cooking components, and the team had to figure out a way to exhaust the complete system. The only existing exhaust possibility was a chimney in the opposite area of where the kitchen needed to go," Toral says.

The architect located a rare 1885 photo that showed a small chimney originally rose on the back side of the building. Although the chimney hadn't been in place for 100 years, the historic review board allowed the team to build a historically accurate chimney in that spot and use it for exhaust. On the second-story interior, a large surround at the fireplace and bar area hides the exhaust equipment for all of the kitchen and HVAC systems. Without the historic photo and innovative solution to exhaust, the space



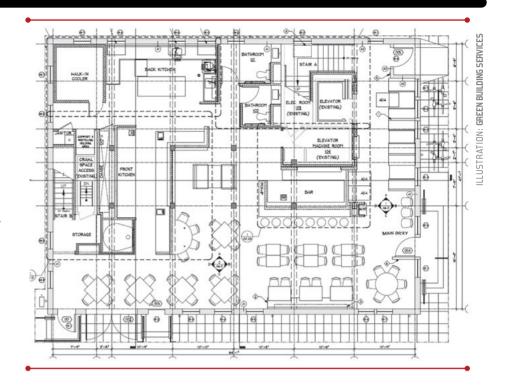
would have never been able to house a restaurant.

Another clever concept was born from limited surrounding exterior land. A restaurant requires carbonic systems for drinks, as well as HVAC compressors and motors. Now atop a garage, Raven & Rose leased two underground parking spaces below the restaurant for the equipment and ran lines through the floor directly to the equipment.

As the team installed extremely efficient HVAC controls, GBS' engineers came in to measure temperature, air speed and humidity in multiple areas to ensure the varying spaces would maintain thermal comfort for chefs, guests and employees. GBS also provided commissioning to verify that the energy-related systems were installed, calibrated and performing according to the owner's project requirements, basis of design and construction documents. The sustainable consulting firm also provided guidance on the restaurant's purchase of 50 percent green power.

The Art of Salvage

The building's original brick chimney spanned 3 stories but it was seismically un-



stable. During the restoration, the chimney was carefully deconstructed and all the 1883 bricks were saved. Mygrant had them reused as a wall that now frames the restaurant's wood-fired oven.

The Ladd Carriage House

was basically a shell with no pipes, ductwork or wiring when Lisa Mygrant considered it for her restaurant. Today, the interior complements the historic exterior.

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The soaring 35-foot ceiling in The Rookery Bar prominently displays the hayloft's original 131-year-old wooden trusses.

Of 65 total windows, 25 of the carriage house's original 1883 windows remain. Three original doors were retained, and new doors reflect their style.



Windows offer a view of the building through time. On the ground floor, new, energy-efficient windows dominate, but of 65 total windows, 25 of the carriage house's 1883 windows remain. In the upstairs bar, the team kept windows that were added to the north elevation after the building's fire because they so closely resembled the originals. New windows installed during the restoration match those from 1883. Three original doors were retained and two new ones were added: Raven & Rose's new front door and the carriage doors reflect the style of the 1883 doors.

Post-consumer, salvaged and reused products show patrons how these products elegantly translate into new uses and visually convey the Ladd Carriage House's history. The majority of furniture and fixtures are Forest Stewardship Councilcertified sustainably harvested wood, and several manufacturers were required to purchase FSC-certified wood to supply the restaurant. Former walnut crates once used to ship large cargo form the tables. The two bars in the space were custom made from FSC-certified wood to exactly fit the space. The bar countertop in the dining room was crafted from recycled zinc. The soaring 35-foot ceiling in The Rookery Bar also prominently displays the hayloft's original 131-year-old restored wooden trusses.

"We also kept the beadboard ceiling from the front three stories of the building—all we did was paint it," Toral explains. "And the original flooring remained in place as sub-flooring." In an unexpected nod to the carriage house's original purpose, Raven & Rose's new flooring stems from reclaimed wood first found in Kentucky horse-stable fencing.

Green and Greens

Low- and no-volatile organic compounds were important considerations and Mygrant opted not to lacquer the tables with formaldehyde-based coatings. Furniture was carefully selected to prevent offgassing materials. Kitchen products are biodegradable, edible, occur in nature or are otherwise non-caustic, and GBS worked closely with Toral to develop a green-cleaning policy customized to match restaurant practices.

In addition to the efficiency of the HVAC

system, LED and fluorescent fixtures reduce energy consumption, and the lighting system is 45 percent better than ASHRAE 90.1-2007 standards. Balancing lighting efficiency with restaurant lighting needs requires innovation, so the controls are on dimmers and segregated by zone to provide the precise lighting intensity appropriate to each section's function.

To limit transportation impacts, GBS helped Raven & Rose develop an alternative transportation plan with incentives for employees who bike to work or use public transportation, such as a free annual bike tune-up or subsidies for public-transit passes. Employees who commute via alternative transportation can also participate in an annual raffle for a \$100 gift certificate.

Mygrant instituted multiple measures that contribute to the welfare of the environment and her guests. A robust recycling program has employees recycling all plastic, glass and paper, so trash is very minimal. All food waste is collected and becomes feed for livestock or compost. Cooking oil is recycled into biodiesel.

"The owner is a huge advocate of seasonal eating, supporting local farms and letting the natural flavor of fresh food shine through in our menu, which is inspired by Irish and British countryside cooking," Toral says. In fact, Mygrant's own 40 chickens supply the restaurant with eggs, and lemons and pomegranates from her mother's northern California farm flavor food dishes and cocktails.

Given that Ladd started his Portland fortune by selling alcohol, eggs and local produce, a clear symmetry exists between Ladd's personal history and the restaurant. Mygrant's team has enhanced the correlation by naming seven cocktails made from their own label bourbons after people who had significant influence in the history of the building, such as Caroline's Fancy (named for Ladd's wife), Sim's Old Fashioned (named after one of Ladd's best friends, Simeon Reed) and, of course, Ladd's Manhattan (named for the man himself). "Many people who have lived here their entire lives know some things about Portland history, but few know anything about Ladd," Toral asserts. "We want to bring his legacy back."

Retrofit Materials

METAL FRAMING // Clark Dietrich, www.clarkdietrich.com

GYPSUM BOARD // ProRoc from CertainTeed Corp., www.certainteed.com

JOINT TAPE // CertainTeed

PLYWOOD // Weyerhaeuser, www. weyerhaeuser.com

WOOD DOORS // Lynden Door, www.lyndendoor.com

INTERIOR PAINT // Rodda Paint, www.roddapaint.com

EARTH PLASTER // Porcelina from American Clay, www.americanclay.com

RESILIENT FLOORING // Marmoleum from Forbo Flooring Systems, www.forbo-flooring.com

CARPET // Lees, www.leescarpets. com, and Atlas Carpet Mills, www.atlascarpetmills.com

HARDWOOD FLOORING //

Emerson Hardwood Co., www.emersonhardwood.com, and Pioneer Millworks, pioneermillworks.com

RUBBER FLOORING AND WALL BASE // Flexco, www.flexcofloors.com

TABLETOPS // Viridian Reclaimed Wood, viridianwood.com

ZINC BAR TOP // Bastille Metalworks, bastillemetalworks.com

LEATHER TILES // Ecodomo, ecodomo.com

TILE // Pratt & Larson Ceramics, www.prattandlarson.com

BATHROOM WALLCOVERING // Bradbury & Bradbury, www.bradbury.com

TOILET ACCESSORIES // Bobrick, www.bobrick.com

LIGHTING CIRCUITS // Wattstopper, www.wattstopper.com

FAN-COIL UNIT // Mitsubishi Electric, www.mitsubishipro.com

NATURAL-GAS HOT-WATER
BOILER // AERCO, www.aerco.com