

## CASE STUDY

# CONDENSING ROOFTOP UNIT BRINGS GAS EFFICIENCY TO SPOKANE RESTAURANT

Due to a degrading rooftop unit at The Onion Bar & Grill in Spokane, Wash., the restaurant owners experienced high energy costs while the kitchen staff dealt with poor indoor air quality. To fix this, co-owners Ken Belisle and Roger Dadi partnered with Doc Holliday at Holliday Heating to find a cost-effective solution: the installation a new gas-fired condensing rooftop unit (C-RTU).



*The Onion Bar & Grill, Spokane, Wash.*

### THE HIGH-EFFICIENCY CHOICE IN COMMERCIAL VENTILATION

This emerging, high-efficiency technology is particularly advantageous for commercial buildings with high outside air percentages and long runtimes. As gas-fired C-RTUs are far more efficient than their non-condensing, gas-fired counterparts, The Onion Bar & Grill joins a growing number of businesses looking to support their bottom lines with significant gas and electric savings and favorable payback on their investments.

### SAVINGS, VALUE AND COMFORT

With the installation of a Reznor RHH-350 C-RTU powered by gas and electricity provided by Avista Utilities, The Onion Bar & Grill saved \$1,890 on their utility bills during the 2015/2016 heating season. In addition, by significantly reducing operating costs, the C-RTU installation increased the building's asset value to the tune of \$37,800.

And the benefits didn't stop at the bottom line. By eliminating recirculated air, the C-RTU provides kitchen staff with 100-percent-conditioned outdoor air to vastly improve their indoor comfort.

**Table 1.** Financial Metrics

C-RTU Costs and Paybacks	Full 2015/2016 Heating Season
<b>Annual Gas Savings</b> (therms)	<b>1,902</b>
<b>Annual Gas Cost Savings</b> (\$)	<b>\$1,617</b>
<b>Annual Electric Savings</b> (kWh)	<b>3,003</b>
<b>Annual Electric Cost Savings</b> (\$)	<b>\$273</b>
<b>Net Energy Cost Savings</b> (\$)	<b>\$1,890</b>
<b>Total Incremental Installed Cost</b> (\$)	<b>\$2,529</b>
<b>Payback of Incremental Cost</b> (years)	<b>1.3</b>



*These units are head-and-shoulders above non-condensing units in terms of efficiency.*



*Chris Holliday, Project Manager, Holliday Heating*

**Table 2.** Conventional RTU vs. C-RTU Performance

2016/2017 Heating Season Metrics	Non-condensing RTU Baseline	C-RTU
<b>Thermal Efficiency (TE)</b>	<b>75%</b>	<b>91%</b>
<b>Airflow (cfm)</b>	<b>3,350</b>	<b>5,800</b>
<b>Gas Usage (therms)</b>	<b>7,236</b>	<b>5,334</b>
<b>Electric Usage in Fan (kWh)</b>	<b>8,177</b>	<b>5,174</b>
<b>EFLH high fire (hours)</b>	<b>1,930</b>	<b>1,645</b>

### HIGH EFFICIENCY MEANS QUICK PAYBACK

While non-condensing RTUs operate at manageable thermal efficiencies of around 75%, The Onion Bar & Grill's new C-RTU operates at an impressive 91% thermal efficiency. Although the C-RTU unit comes with added costs to manage condensate, these profound savings on both on gas and electricity more than compensate for the investment. In fact, Ken Belisle and Roger Dadin managed to reclaim these costs in under 16 months and continue to save substantially on their utility expenses.



Reznor RHH-350 C-RTU  
 Photo credit: Gas Technology Institute

**//** *We are very satisfied with the new rooftop unit. I spend 30-plus hours a week in the kitchen and over the past year we noticed cooler summers and more comfortable winters with the fresh air coming in.* **//**

*Daniel Butler, Kitchen Manager, The Onion Bar & Grill*

## TO LEARN MORE,

Contact Christine Riegler at [CRiegler@neea.org](mailto:CRiegler@neea.org) or visit [betterbricks.com/solutions/hvac/c-rtus](http://betterbricks.com/solutions/hvac/c-rtus).