Energy Efficient
Water Heating Solutions

Reference Guide to Products and Services

Presented by Dipesh Parekh and Rohan Scafe
Rinnai Global Capabilities

- Based in Nagoya, Japan with over 10,000 employees world-wide
- Over 29 Global Subsidiaries and Affiliates in 43 countries
- Established in 1920 - Tankless introduced to NA in 1999.
- Used in Japan’s first “low carbon certified” building
- Certified CSA Testing Laboratory
- North American Headquarters located in Peachtree City, GA
- #1 Tankless Water Heater Manufacturer in U.S. and Canada
“Quality is our Destiny”

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
Products for every application

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
Current Product Portfolio

Emergency Replacement

Planned Replacement and New Construction

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
Transforming the way water is heated
Products that change the way water is heated

Existing Boiler Room

Same Boiler Room with Multiple Solutions
Example: 1,000,000 Btu System

One Rinnai tankless
disabled:
loss of 16% DHW

Tank disabled:
100% loss of DHW

One unit disabled:
50% loss of DHW
TRS can **Track the Load** from one fixture to the entire facility under peak demand.

![Graph showing energy consumption over time for Boiler and TRS systems.](image-url)
Multi-Zoned Installations provide VE opportunities

Eliminate large, complicated and expensive central systems

- Ability to separate DHW from high temp HW without expensive mixing valves
- Shorter recirculation loops reduces pump size and saves energy
- Space savings with smaller, wall-mount TRW
- Redundancy provides maximum uptime

$15 to $25K Mixing Valve

Zoned Guest Rooms, 1 per floor or every other floor

Guest Rooms 120°F

Kitchen / Laundry 140°F

Overall lower cost to install
### Alignment of Sustainability Goals

**2025 Sustainability and Social Impact Goals: Reduce Environmental Impacts**

**Goal**
Reduce environmental footprint by 15% | 30% | 45% across the portfolio by 2025
(from a 2016 baseline; for water / carbon / waste on an intensity basis)

**Supporting Goals**

<table>
<thead>
<tr>
<th>Water</th>
<th>Carbon Emissions</th>
<th>Waste</th>
<th>Renewable Energy</th>
</tr>
</thead>
</table>
| Reduce water intensity by 15% | Reduce carbon intensity by 30%
Commit to analyze the opportunity to set a science-based target by 2018 | Reduce waste to landfill by 45%
Reduce food waste by 50% | Achieve a minimum of 30%
renewable energy use |

- Zoned Water Heating
- Strategically Locate tankless,
- Integrated Recirculation

All can reduce waste by reducing time to purge cold water from lines

- High efficiency technology
- Superior load tracking
- Integrated recirculation control

All reduce energy usage and reduce carbon emissions

- Tankless technology has a longer expected life vs tanks
- Parts are field replaceable
- Parts are easily recyclable

Rinnai products reduce the impact to landfills

- Tankless technology is the preferred back-up to solar thermal water heating systems

Renewal systems such as solar thermal all require a back-up and method to handle peak demands

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Rinnai Commercial Impact to Sustainability
# Rinnai Life Cycle Cost Analysis - Hospitality

## (2) Tankless Racks TRS04 and TRS06

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total LCC</th>
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</thead>
<tbody>
<tr>
<td>Equipment Cost (Year 7 HX replacement)</td>
<td>$28,500</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$4,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$32,500</td>
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<tr>
<td>Installation Cost (Year 7 HX replacement)</td>
<td>$12,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$1,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$13,000</td>
</tr>
<tr>
<td>Utility Rebate(s)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
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<tr>
<td><strong>Total Installed Cost</strong></td>
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<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$5,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$45,500</td>
</tr>
<tr>
<td>Annual Maintenance</td>
<td>$ -</td>
<td>$2,000</td>
<td>$ -</td>
<td>$2,000</td>
<td>$ -</td>
<td>$2,000</td>
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<td>$2,000</td>
<td>$ -</td>
<td>$2,000</td>
<td>$10,000</td>
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<tr>
<td><strong>Total Operating</strong></td>
<td>$11,670</td>
<td>$13,670</td>
<td>$11,670</td>
<td>$13,670</td>
<td>$11,670</td>
<td>$13,670</td>
<td>$11,670</td>
<td>$13,670</td>
<td>$11,670</td>
<td>$13,670</td>
<td>$126,700</td>
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<tr>
<td>Productivity Add Inputs (revPAR and ADR)</td>
<td>100</td>
<td>36,500</td>
<td>$2,500,000</td>
<td>68</td>
<td>0.70</td>
<td>97.85</td>
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<td>Productivity Add Offset</td>
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<td>$1,957</td>
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<tr>
<td><strong>Total Cumulative A&amp;M Cost</strong></td>
<td>$50,213</td>
<td>$61,926</td>
<td>$71,639</td>
<td>$83,352</td>
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<td>$104,778</td>
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<td>$131,204</td>
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Rebates may be available in some areas for tankless NG water heaters.

## (4) NG Tank (100 Gal.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total LCC</th>
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<tbody>
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<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$24,000</td>
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<td>$ -</td>
<td>$ -</td>
<td>$72,000</td>
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<td>$ -</td>
<td>$ -</td>
<td>$8,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$24,000</td>
</tr>
<tr>
<td>Utility Rebate(s)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Total Installed Cost</strong></td>
<td>$32,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$32,000</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$96,000</td>
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<tr>
<td>Annual Maintenance</td>
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<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
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<td>$ -</td>
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<tr>
<td><strong>Total Operating</strong></td>
<td>$13,670</td>
<td>$13,670</td>
<td>$13,670</td>
<td>$13,670</td>
<td>$13,670</td>
<td>$13,670</td>
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<td>$13,670</td>
<td>$13,670</td>
<td>$13,670</td>
<td>$136,700</td>
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<tr>
<td><strong>Total Cumulative A&amp;M Cost</strong></td>
<td>$45,670</td>
<td>$59,340</td>
<td>$73,010</td>
<td>$86,680</td>
<td>$132,350</td>
<td>$146,020</td>
<td>$159,690</td>
<td>$173,360</td>
<td>$187,030</td>
<td>$232,700</td>
<td>$232,700</td>
</tr>
</tbody>
</table>

Rebates may be available in some areas for tankless NG water heaters.
Rinnai Commercial CU199 SENSEI

• Flexible installation options
  – (Interior/Exterior, Natural Gas/Propane)
• 97% Thermal Efficiency
• Common Vent up to 12 units/~2.4MMBTU (6” PVC)
• Warranty
  • 8 years or 12,000 operation hours heat exchanger
  • 5 year parts
  • 2 years labor*
Focused on 3 ideals to Captivate Customers:
1. Installation Ease
2. Operational Performance
3. Serviceability

Every component was designed to be removed in under 10 minutes
Real-time Status
Remote diagnostics and alerts
Shorter maintenance time
Control and convenience
Rinnai Tankless Rack Systems - TRS™

Tankless Rack System™
Up to 25 units working together
327:1 Turndown Ration = Superior Load Tracking

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
Demand Duo™ Commercial Family of Products

80 gal / 199K BTU
Standard Efficiency
Demand Duo 80
CHS19980HE (iN/iP)

119 gal / 199K BTU
High Efficiency
Demand Duo 119
CHS199100CU (iN/iP)

119 gal / 398K BTU
High Efficiency
Demand Duo 2
CHS398100CU (iN/iP)

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
Demand Duo™ - How It Works

HE Commercial Water heater

Rinnai Demand Duo Hybrid Commercial Water Heater

Removed the heat source from the tank

Larger tank + 90% utilization = more hot water

Benefits:
1. Reduced Thermal Stress on the Tank
2. Easily replaced components
3. More Hot Water Capacity
4. Consistent Hot Water Temperature
The Demand Duo™ Value Proposition

So, would you rather replace this at ~$7000

Or this at ~$400?

Heating occurs in the tankless heat exchanger – not the tank

Set-point temperature water delivered to the tank

Removes stress from tank

Extends the life of the product

RESULT = 2x warranty (8 years HEX / 6 years Tank)

2x warranty – similar cost - repair vs replace = lower cost of ownership

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
## Demand Duo Warranty

<table>
<thead>
<tr>
<th></th>
<th>Demand Duo 119</th>
<th>Demand Duo 2</th>
<th>Demand Duo 80</th>
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<tbody>
<tr>
<td><strong>Heat Exchanger</strong></td>
<td></td>
<td>Commercial</td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHS199100CU</td>
<td>CHS19980HE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHS398100CU</td>
<td></td>
</tr>
<tr>
<td><strong>Storage Tank</strong></td>
<td></td>
<td>8 years</td>
<td>5 years</td>
</tr>
<tr>
<td><strong>Parts and</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Components</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reasonable Labor</strong></td>
<td></td>
<td></td>
<td>2 years*</td>
</tr>
</tbody>
</table>

*Limitations apply, see Rinnai Limited Warranty Terms and conditions located in the installation and operation manual.

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED
How Rinnai National Accounts Started…

Rinnai Sales: “What do you like about this water heater?”

Customer: “Nothing, it’s expensive and it has to be replaced every 3 years.”

Rinnai Sales: “Great, you should try our Demand Duo.”

Customer: “Ok, what’s your National Accounts 24/7 phone number?”

Rinnai: “We don’t have one…”

Customer: “Sorry Rinnai, I can’t live without 24/7 replacement service. I hate the product, but love the service.”
Sizing, Energy and Space Savings using a Commercial Tankless Solution

Rinnai Corporation
Role

• Manage a Team Engineers serving North America
• Sizing, design and quotation
• Custom engineered solutions via Made-to-Order (MTO)
  - piping, pump, controls, tank, design drawings and more
• Return-on-investment (ROI) calculations: cost, savings, carbon emissions and life cycle cost analysis
• Commercial system installation and troubleshooting support
• Consultation: Owners, MEPs, Architects, Mechanical Contractors, Facilities Managers, Builders, Developers and more
Sizing Fundamentals – Important Factors

- Hot water demand: How much hot water is required during peak?
- Incoming ground water temperature: Ground water temperature could increase system size by up to 40% in northern regions
- Altitude: Air to gas ratio is affected at high altitude
- Existing distribution water line size
- Mechanical space
- Available gas load: Tankless systems require high input rate. Must ensure gas meter, regulator and lines are sized for maximum input rate of system
Sizing Fundamentals – Formulas

Rate of heat transfer:

\[ \text{Btuh} = \text{GPH} \times \Delta T \times 8.33 \]
\[ \text{Btuh} = \text{Q} \times \Delta T \times 500 \]

GPH: Gallons per hr  
Q: Water flow rate (gpm)  
ΔT: Temperature rise (°F)

Btuh: Defined as the quantity of energy necessary to raise the temperature of 1 lb of water 1 °F in 1 hour

Used to determine energy loads

Mixed water temperature:

\[ P = \frac{(T_m - T_c)}{(T_h - T_c)} \]

P: Hot water multiplier  
T_m: Temperature of mixed water (°F)  
T_c: Temperature of cold water (°F)  
T_h: Temperature of hot water (°F)

Hot Water Flow Rate (gpm) = Mixed Temperature Flow Rate × P

Max Flow Rate of Round Pipe (Q)

\[ Q = 2.448d^{2.5}V \]

Q = flow rate (gpm)  
D = pipe diameter (inches)  
V = pipe velocity (ft/s)

Friction Head Loss (h):

\[ h = 0.000623q^2 \times \frac{L}{d^5} \]

H = friction head (ft)  
q = flow rate (gpm)  
L = pipe length (ft)  
d = pipe diameter (inch)  
2.31 ft head = 1 PSI

©Rinnai Corporation
Sizing Fundamentals – Ground Water Temperature Map

Fig. 40 Approx. ground water temperatures
Courtesy of epa.gov, accessed September 2012
ASHRAE

Hot Water Fixture Units and the Modified Hunter’s Curve:

- FU: An arbitrary unit assigned to different types of plumbing fixtures
- Most plumbing fixtures are assigned a FU
- Used when sizing tankless, instantaneous, on-demand water heaters (systems that do not incorporate storage)
- Used in conjunction with the Modified Hunter’s Curve to estimate water flow rates
- The Modified Hunter’s Curves are specific to the application
- Diversity is included in the curves

ASPE

GALLONS PER HOUR (GPH) REQUIREMENT: an estimated measure of the total gallons of hot water the building will use during peak periods. Fixture GPH is specified by technical publications such as American Society of Plumbing Engineers (ASPE) or the fixture manufacturer. This method is used for sizing storage water heating systems.

Determining design load (Btuh):
Design load (Btuh) = GPH x ΔT x 8.33
ΔT: temperature rise (F)
8.33: weight of water (8.33lb/gal)

Engines = Design load (Btuh) / Engine max. input (Btuh) x Engine TE.

Tank vol. (gals.) = Design GPH x 0.20
Sizing Example – Central Plant w/ Tankless Only

ASHRAE | 55 Suite Hotel | Location: Suburban Atlanta, GA | GWT: 65F | Supply temp: 120F | ΔT : 55F

Flow rate/engine (CU199) @ 55F rise: 7 gpm

Engines :37/7 = 5 engines or 1-TRW03 + 1-TRW02
Sizing Example – Central Plant w/Storage

**ASPE**

Determine design load (Btuh):
Design load (Btuh) = GPH x ΔT x 8.33
ΔT: temperature rise (°F)
8.33: weight of water (8.33 lb/gal)

Engine qty. = Design load (Btuh)
Engine max. input (Btuh) x Engine TE.
Tank vol. (gals.) = Design GPH x 0.2

Design load: 660 x 55 x 8.33 = 302,379 Btuh

Engine qty. = \(\frac{302,379}{199,000} \times .97 = 1.6 \sim 2\) engines

Tank vol. = 660 x 0.2 = 130 \sim 119 gal
Energy Savings

Items needed:
• Job must be sized by Rinnai
• Make and model of spec’d or existing system
• Storage capacity
• Thermal efficiency
• Tank standby loss
• Age of tanks
• Utility rates
Space Savings

Rinnai 5 - Tankless

FLOOR SPACE = 0 SQFT

2-199/100 Water Heater

H: 75.75 in = 6.61 ft
Dia: 33.12” = 2.76 ft

FLOOR SPACE : 16+ SQFT
(includes space for clearances)

Value add to business owners:

1. Tighter mechanical room
2. Reduce material cost for new construction or major renovation
3. Saved space can be used to generate revenue for businesses
4. Low operational and maintenance cost
5. Longer life
## System Comparison

Weigh advantages of each system to select option that is right for you

<table>
<thead>
<tr>
<th>Tankless Rack Systems</th>
<th>Storage Water Heating Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Standby Loss</td>
<td>Tank standby loss</td>
</tr>
<tr>
<td>No floor space (except Free Standing TRS)</td>
<td>Floor space required</td>
</tr>
<tr>
<td>Larger gas lines</td>
<td>Smaller gas line</td>
</tr>
<tr>
<td>Precise temperature control</td>
<td>Water temperature controlled by tank aquastat</td>
</tr>
<tr>
<td>Fully modulating system with Electronic Manifold Control (325:1 turn down ratio)</td>
<td>Modulation at higher Btuh input (25:1 turn down ratio)</td>
</tr>
<tr>
<td>Lower operating cost</td>
<td>Higher operating cost</td>
</tr>
</tbody>
</table>

CREATING A HEALTHIER WAY OF LIVING

©Rinnai Corporation 39
Engineering Support

8:00AM – 8:00PM EST

*100% Sizing Guarantee

24/7/365 Technical Support | 866.383.0707 | engineering@rinnai.us

* No change to original fixture list and design parameters
Questions?
Thank you
Pinellas County Schools learns how Rinnai Demand Duo Hybrid Water Heaters can ensure a reliable supply of hot water, reduce operating costs, and provide long-lasting dependability.

Like any other public school system, Pinellas County Schools in Florida operates on a tight budget and answer to a host of external parties. So, it’s no surprise that they are always looking for ways to maximize efficiency and cut costs effectively, to better serve students, meet educational needs, and reduce long-term operational expenses.

When water heating systems start failing in the Pinellas County Schools, the district begins searching for a dependable, efficient, and sustainable solution for the school and its academic staff. What they needed was a hot water solution that didn’t have the same reliability and short setup times as the units they currently used. Moreover, they needed a system that offered reliability, to avoid a complete loss of hot water during the school day. What they found was Rinnai’s Demand Duo Hybrid Water Heating System.

**Case Studies**

**Countieside High School, Pinellas County School System**

The school system in Pinellas County, Florida, decided to replace their antiquated water heating system with Rinnai’s Demand Duo Hybrid Water Heating System. This allowed the school to reduce their energy costs and improve their overall efficiency. The school is now able to provide hot water to students and faculty throughout the day, without any disruptions.

**Tamarac Middle School, Pinellas County School System**

Tamarac Middle School in Pinellas County, Florida, installed Rinnai’s Demand Duo Hybrid Water Heating System to replace their old water heating system. This allowed the school to reduce their energy costs and improve their overall efficiency. The school is now able to provide hot water to students and faculty throughout the day, without any disruptions.

**Brewing Company**

A local brewery in Pinellas County, Florida, installed Rinnai’s Demand Duo Hybrid Water Heating System to replace their old water heating system. This allowed the brewery to reduce their energy costs and improve their overall efficiency. The brewery is now able to provide hot water to their staff and customers throughout the day, without any disruptions.

**ADVANTAGES FOR BREWERS**

- Improved process control and consistency
- Increased efficiency and productivity
- Reduced water use and energy consumption
- Improved overall operational efficiency

**Rinnai**

Rinnai Corporation is a leading manufacturer of water heating systems, providing a reliable supply of hot water for homes and businesses worldwide. Their Demand Duo Hybrid Water Heating System is designed to provide long-lasting dependability, reduce energy costs, and improve overall efficiency. Rinnai Corporation is committed to providing innovative and sustainable solutions for the water heating industry.

**ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED**
110-Room Courtyard

Application: 110-Room Full Service Hotel w/ kitchen, bar and laundry

Replaced: Original spec was 4 AO Smith BTH 100/199

Install Date: Winter 2015

Location: Mid West / Canfield, OH

Equipment: 2 - TRW04iN + TRS06iN = (14 RUC98iN

Venting: 3 - Common Vent kits, Horizontal Terminations, Multiple

Accessories: Extensions

Output: 2- REU-MSB-M, multiple MSB-C1 2.8M BTU, (2.0 for rooms and 800K for kitchen / laundry)

Comments: TRS designed with split systems – 1 supplying the rooms; (10 units) and one supplying the kitchen, (4 units, not shown), bar and laundry.
183-Room Full Service Hotel

Application: 183-Room Full Service Hotel w/ kitchen, bar and laundry

Replaced: 7 AO Smith BTH 400A – 100 gallon

Install Date: Spring 2014

Location: Mid West / Perrysburg, OH

Equipment: 4 - TRW04iN + TRS04iN = (20 RUC98iN)

Venting: 3 - Common Vent kits, Horizontal Terminations, Multiple

Accessories: Extensions

Output: 2 - MCC-91, 5 - REU-MSB-M, multiple

Comments: 3.2M BTU, 2500 GPH @ 140 F

TRS designed with split systems – 1 supplying the rooms (16 units) and one supplying the kitchen (4 units, not shown), bar and laundry
**112-Room Hotel**

<table>
<thead>
<tr>
<th><strong>Application:</strong></th>
<th>112-Room Hotel w/ small kitchen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Replaced:</strong></td>
<td>New Construction</td>
</tr>
<tr>
<td><strong>Install Date:</strong></td>
<td>Summer 2013</td>
</tr>
<tr>
<td><strong>Location:</strong></td>
<td>Mid Atlantic / Virginia</td>
</tr>
<tr>
<td><strong>Equipment:</strong></td>
<td>2 – TRS06iN</td>
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<tr>
<td><strong>Venting:</strong></td>
<td>2 - Common vent kits, horizontal terminations, multiple extensions, elbows and 45s</td>
</tr>
<tr>
<td><strong>Accessories:</strong></td>
<td>2 - MCC-91, 3 - REU-MSB-M, multiple MSB-C1</td>
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<tr>
<td><strong>Output:</strong></td>
<td>3.2M BTU, 2500 GPH @ 140 F</td>
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<tr>
<td><strong>Comments:</strong></td>
<td>TRS designed with split systems – 1 supplying the rooms (16 units) and one supplying the kitchen (4 units, not shown), bar and laundry</td>
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Full Service Hotel

<table>
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<th>Full Service Hotel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replaced:</td>
<td>6- 100Gal / 199K BTU high efficiency tanks</td>
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<tr>
<td>Install Date:</td>
<td>March 2016</td>
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<tr>
<td>Equipment:</td>
<td>6 – Demand Duo™ CHS199100iN</td>
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<tr>
<td>Venting:</td>
<td>8” PP Common Vent, Exhaust Only</td>
</tr>
<tr>
<td>Accessories:</td>
<td>None</td>
</tr>
<tr>
<td>Comments:</td>
<td>Provides hot water for hotel of 120 rooms</td>
</tr>
</tbody>
</table>
86-Room Full Service Hotel

<table>
<thead>
<tr>
<th>Application:</th>
<th>Primary hot water for guest rooms, laundry and kitchen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replaced:</td>
<td>New construction</td>
</tr>
<tr>
<td>Install Date:</td>
<td>September 2015</td>
</tr>
<tr>
<td>Location:</td>
<td>Oklahoma</td>
</tr>
<tr>
<td>Equipment:</td>
<td>2 TRS06 (12 units total) feeding a 300 gallon storage tank</td>
</tr>
<tr>
<td>Venting:</td>
<td>2 Common Vent kits, extension pieces, side wall termination</td>
</tr>
<tr>
<td>Accessories:</td>
<td>6-MCC91-2 commercial temperature controllers</td>
</tr>
<tr>
<td>Output:</td>
<td>1.2M BTU/ ~1400 GPH</td>
</tr>
<tr>
<td>Energy Info:</td>
<td>TBD</td>
</tr>
<tr>
<td>Comments:</td>
<td>This 4 star hotel is located just outside downtown OKC and Will Roger's International Airport. This project was specified for commercial tanks but went with Rinnai Tankless Rack System and storage</td>
</tr>
</tbody>
</table>
80-Room Full Service Hotel

Application: 80-Room Hotel w/ kitchen, bar and laundry
Replaced: renovation
Install Date: Fall 2013
Location: 2 – TRW04eN wall rack system
Equipment: External – no venting required
Venting: 1 - MCC-91, 1 - REU-MSB-M, multiple
Accessories: MSB-C1
Output: 1.6M BTU delivering approximately 3300 GPH
Energy Info: Roof units free up space utilized by large storage. TRS will effectively track the hot water demand of this hotel and deliver hot water only when needed. The energy savings is realized by using high efficiency 95% condensing tankless and 105:1 TDR which allows modulation from 15.2K BTU up to 1.6M BTU.