



UNIT DESIGN: Clean Sweep

Failure was not an option when the Metropolitan Toronto Convention Centre decided to renovate its main dishroom in only six months.

By: Janice Cha

11/01/2012

When the Metropolitan Toronto Convention Centre (MTCC), Toronto, began its major dishroom renovation in spring 2011, it faced a diamond-hard deadline: the upcoming SWIFT/Sibos conference, a world-class event that would bring together 7,700 people in September.

The MTCC dishroom overhaul team faced more than a few hurdles. For starters, the six-month timeframe encompassed everything from schematic design and tear-down to installation and equipment start-up, plus the creation of new ventilation and [plumbing systems](#). Next, the dishroom's too-compact footprint had to remain the same despite the MTCC's steady annual increase in foodservice volume. Then there was the challenge to "green up" the new dishroom so it would reduce by 50% the amount of water and power used. Finally, the convention center had to remain open for business throughout the renovation.

"The annual SWIFT/Sibos event is one of the most influential conferences in the world. We could not fail to deliver with this group," says Richard Willett, MTCC F&B v.p.

The conference brings together reps from financial institutions, market infrastructures, multinational corporations and technology partners to do business and shape the future of the financial industry.

"There was no room for error," adds Camille Allman, MTCC's catering director and project coordinator.

This wasn't just any dishroom renovation. The compact space was the source of clean dishware for all foodservice operations at the MTCC, which for nearly 30 years has served as the largest convention and tradeshow facility in Canada. It hosts about 750 major events annually for more than 2 million visitors. The MTCC's foodservice operations play a huge role in its success, [accounting](#) for about 35% of MTCC's total annual revenue.

Getting Started

The MTCC contacted William Caruso & Associates in March 2011, asking the Denver-based design and consulting firm to review the overall project, assess the dishroom and come up with a plan. At the same time, Willett and Allman spent time washing dishes and consulting with the dishroom crew to get first-hand input on what changes would be needed.

Within weeks, the Caruso design team, which included Principal William Caruso, FFCSI, Principal and Design Director Stephen Young, FCSI, and Associate Project Manager Phillip Landgraf, had created a plan.

"We worked hand-in-hand with B&H, the onsite architects—they did the field measurements of the space, then we met onsite with MTCC owners and the architects to figure out the layout. I did the preliminary sketches that basically became the final concept," Young says. The sketches featured two flight-type dish machines, a glass-washing machine and a two-level [conveyor system](#).

Part of the process was educating the MTCC team about the [latest technology](#).

“The conveyor system was at first a big question mark in our minds,” Willett says. “We weren’t convinced it would handle the volume and were concerned that its many moving parts would mean more chance for error and breakdowns.” After touring several facilities and meeting with the manufacturer, the MTCC team was sold on the idea.

Before: Hot, Humid & Inefficient

The MTCC’s original dishroom, built in 1984, featured two aging flight-type dishmachines and a breakdown table—plus an utterly inefficient layout. The only way to move dish and glassware racks was for employees to manually carry them from one station to another across a wet, slippery floor. [Dish racks](#) were jammed in wherever they would fit. The lighting was poor, too. Inefficient dishmachines led to expensive overtime pay during crunch times. Workflow was chaotic.

“We’ve got an aging workforce, so the height and angles of equipment, the constant bending and lifting, weren’t easy on them,” Allman says. “Over the years, they’d created workarounds to compensate.”

On top of that, “the dishroom had limited ventilation, made worse by all the heat and humidity thrown off by the old dishmachines,” Young says. “The ceiling and floor tiles had lost the fight against the constant moisture long ago. Plumbing leaks from the dishroom were affecting lower levels of the convention center. And the existing dishmachines needed constant repair.”

After: Efficiency, Savings & Happy Workers

Young’s design team had three goals: maximizing throughput from the 1,800-sq.-ft. space, cutting dishroom utility costs by up to 50% and creating a more efficient, user-friendly space for dishroom workers.

Throughput came first, thanks to technology. “Instead of workers pushing or carrying racks of soiled dishes from carts to machine, we opted to install a two-level conveyor system to do the heavy lifting,” Young says. And in addition to two flight-type dishmachines, the team added a third dishmachine dedicated to glassware.

The new layout starts with a staging area for soiled ware along the north wall near the service hallway. In that space, up to six super-sized “Queen Mary” carts can be held at a time.

The main dishroom action takes place at a centralized area where workers scrap and sort china and glassware, all at one station, aided by two mobile soak sinks. Dishes are stacked on either of two conveyors that trundle the stacks directly to the flight-type dishmachines in the middle of the room. The positioning of the load-ends make it easy for a single worker to load both machines during moderate periods or for two people to load during peak times.

Employees place glassware into racks and give them an easy push onto an elevated roller belt. The upper-level belt feeds the racks directly into an automated conveyor-type dishmachine on the far end of the dishroom. Racks of clean glassware emerge onto a 22-ft.-long clean table with enough space to hold up to 12 racks.

“The two-level conveyor system improves efficiency and ergonomics since employees no longer have to bend and lift, or twist and turn, the heavy racks,” Young says.

Adding the dedicated glassware machine also results in cleaner ware since there’s no risk of food particles from china getting stuck on glassware,” Young adds.

A Greener, Brighter Dishroom

All three warewashers were specified for their energy- and water-saving abilities. The units feature energy-recovery technology, in which recirculated rinse water reduces water use and saves on energy costs. On the flight-type units in particular, because waste heat is captured and reused, the dishroom overall temperature stays at a comfortable level. The conveyor-type unit, meanwhile, saves water and energy by allowing racks to be accumulated and held so that it only operates with full loads.

Before the renovation, the dishroom's old flight-type dishmachines used water at a rate of 342 gal./hour—or about 1.04 million gal./year. The new flight-type units require only 90 gal./hour—which works out to a more than 70% drop in water use.

"When you factor in the costs of rinse water, sewer and energy use, the new dishroom is saving MTCC more than \$26,000 per year," Young says.

In addition to "green" machines, the new dishroom features non-slip flooring and brighter lighting. Even the walls got a makeover. "Now they're covered with something called White Rock, made specifically for clean rooms in pharmaceutical companies," Allman says. "Nothing sticks to them."

Labor: Working Smarter, Not Harder

Another goal for the project was to improve working conditions for the dishwashing team. But labor savings abound, too, thanks to efficiency improvements that help workers wash more dishes faster and with fewer people.

"Workers no longer have to wait for machines to recover after a cycle—now they can feed dirty dishes through continuously. And the conveyor system means we're able to bring soiled china to the workers, at their stations, instead of making them go to fetch it," Young says.

In addition, dishroom workers no longer have to deal with food waste. "All organic matter from the plates goes into a food digester, so they're not dealing with the food scraps found in typical dishrooms," Willett says. "The unit is part of our green initiative to reduce the amount of waste."

"The greater efficiency also has reduced chances of holding dirty dishes overnight for the morning crew—or paying for expensive overtime hours."

Finally, the new dishroom has opened up training opportunities. "MTCC dishroom workers are now in a position to multitask at various positions within the facility," Willett adds.

"We've been able to reduce overtime by about half, and in general have seen nearly 10% overall savings in labor costs," Willett says.

Advice To Others

Given the importance of the dishroom's inaugural behind-scenes performance during the SWIFT/Sibos convention, the design team adopted a suspenders-and-belt approach and asked the dishmachine and conveyor suppliers to send technicians armed with an inventory of spare parts during the conference.

"The equipment performed flawlessly. Still, everyone breathed easier knowing that the OEM reps were on hand to address any potential problems," Young says.

"Simply replacing the ancient dishmachines with new ones would not have made the MTCC system better," Young adds in retrospect. "Sure, they could have installed energy-efficient machines. But they would still have lacked any logic and flow. When you're doing a re-design, you also have to take into account the labor factor, the cost of doing business and the cost of utilities. You have to consider all the factors. Renovation is not just replacing equipment. It's looking at the big picture. That's what we accomplished at the MTCC."

FACT BOX

Metro Toronto Convention Center—Dishroom

MTCC SIZE: 2 million sq. ft. across two buildings

FOODSERVICE VOLUME: 1 million covers/year

MTCC MAIN DISHROOM SIZE: 1,800 sq. ft.

KEY PEOPLE

MTCC: Richard Willett, F&B v.p.; Camille Allman, catering director & project coordinator; Edward Dinnal, chief steward; Scott Muncaster, building manager

Design: William Caruso & Associates, Denver—William Caruso, principal; Stephen Young, principal, design director; Phillip Landgraf, associate project manager

Architects: B&H, Toronto—Adrian Berry

TOTAL DISHROOM PROJECT COST: \$850,000

EQUIPMENT PACKAGE: \$500,000

KEY EQUIPMENT LIST

1. Hobart flight-type dishmachine with Opti-Rinse and Energy Recovery
2. Hobart CleR conveyor-type warewasher
3. Aeroworks tray conveyor system
4. Orca waste digester

<http://www.fermag.com/home/single-article/unit-design-clean-sweep/02f37016b2.html>