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SUSTAINABILITY CORNER

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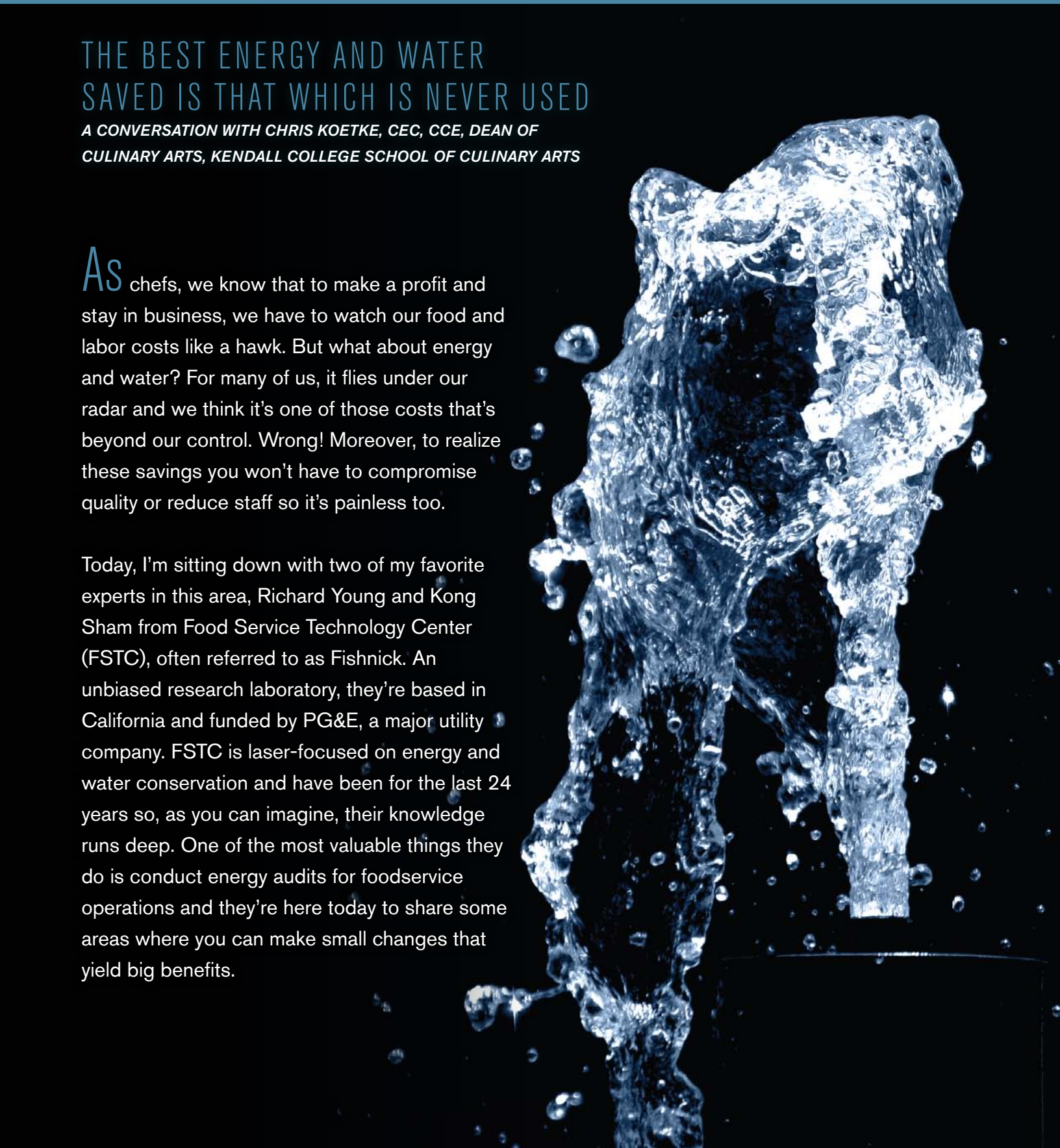
THE BEST ENERGY AND WATER SAVED IS THAT WHICH IS NEVER USED

A CONVERSATION WITH CHRIS KOETKE, CEC, CCE, DEAN OF CULINARY ARTS, KENDALL COLLEGE SCHOOL OF CULINARY ARTS



As chefs, we know that to make a profit and stay in business, we have to watch our food and labor costs like a hawk. But what about energy and water? For many of us, it flies under our radar and we think it's one of those costs that's beyond our control. Wrong! Moreover, to realize these savings you won't have to compromise quality or reduce staff so it's painless too.

Today, I'm sitting down with two of my favorite experts in this area, Richard Young and Kong Sham from Food Service Technology Center (FSTC), often referred to as Fishnick. An unbiased research laboratory, they're based in California and funded by PG&E, a major utility company. FSTC is laser-focused on energy and water conservation and have been for the last 24 years so, as you can imagine, their knowledge runs deep. One of the most valuable things they do is conduct energy audits for foodservice operations and they're here today to share some areas where you can make small changes that yield big benefits.

CK: Although you represent a utility company that sells natural gas and electricity, I know FSTC also focuses on water conservation. What's the connection?

RY: Water and energy are the ying and yang of the foodservice world because water drives the use of energy and vice versa. For example, a dish machine uses water, but it must also use energy to move and heat that water.

CK: So tell me how you help operators.

RY: We help in a few ways. We do energy-efficiency testing on foodservice equipment for ENERGY STAR® and you'll see on the **equipment testing page** of our website that currently we have well over a hundred reports and design guides on dozens of different appliance types. There are also **life-cycle calculators** that can help you compare energy costs between what you're using now and the energy-efficient options. We do complimentary energy audits of individual foodservice operations and make recommendations on how they can save money. For example, my colleague, Kong Sham, just spent a week at the University of California, San Diego, going through their foodservice operations with a fine-tooth comb.

CK: Looking back, when you first started doing these audits, what was the one big revelation or preconceived notion that changed the way you think and how you operate?

RY: One of the things we realized early on is that different pieces of equipment doing similar jobs can use vastly different amounts of energy. For example, a fryer may cost you $600 - $1,000 a year to operate, but an under-fired boiler costs closer to $4,000 - $6,000 per year in energy costs. The revenue stream is probably the same or better for the fryer, yet the broiler costs 5-6 times as much to operate.

CK: Wow! What that says to me is that when we teach our students in culinary schools how to cost out recipes, we look at food and labor, but never consider energy. This could be a brand new way of thinking; would that be feasible?

RY: Some of the big chains, either by accident or design, have done just that. McDonald's uses thermostatically controlled double-sided griddles that have a standby mode to minimize energy use when not being used. Burger King, on the other hand, started out using a heavy chain broiler that

ran full-tilt all the time, but wasted a huge amount of energy. In essence, McDonald's makes the same product at about the same price-point, but it costs a lot less to cook. Burger King has since upgraded their process to use less energy.

CK: So would it be fair to say that QSR operations have been at the forefront of sustainability?

RY: Yes, that's true from an equipment standpoint because they build so many square feet of restaurants so fast that they can take advantage of evolving technology immediately, unlike independents who may only buy a new piece of equipment every four or five years. McDonald's is one of the biggest energy users in the United States, using hundreds of millions of dollars of energy annually and if they can reduce energy use by 10 percent, that's a lot of money!

CK: Given your years of experience and thousands of restaurant audits, what have you learned from these establishments that you could share with ACF members?

RY: First and foremost, operators need to pay as close attention to their energy purchases as they do their food costs. Track how much you're using and how much it costs per therm or kilowatt hour; the first step in savings is knowing your starting point. Secondly, there is a lot of energy and water waste distributed across the facility – a faucet drip here, a worn-out gasket over there, and the list goes on. None are a big deal alone, but it adds up to death by 1,000 small cuts.

CK: So you're saying the devil is in the details?

RY: Yes, and it's often very simple stuff. If it looks wasteful, it is. Oven doors that don't shut completely, lights that burn 24 hours a day in storerooms and other areas not in constant use, worn-out gaskets – it all piles up and there are multiple effects. For example, a dripping faucet wastes water, but also impacts sewer costs and, if it's hot water, that adds energy too.

CK: So what are the top three or four things an operator can do?

RY: Here are some quick and easy changes that costs relatively little but yield big results.

1. Change to low-flow pre-rinse spray valves.

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These guys are used hours each day, use lots of hot water, and send hundreds of gallons of water into the sewer. Some old models can use up to 4.5 gallons a minute. We've found some low-flow models that use as little as 1.2 gallons per minute and are every bit as efficient. Our water **cost calculator** can show you how dramatic the savings can be. They're so inexpensive to buy and easy to change that it's a no-brainer.

2. Replace incandescent lighting with compact fluorescents (CFLs). It's surprising if you count up all of the old-style light bulbs in managers' offices, walk-ins, exhaust hoods, storage rooms and bathrooms. CFLs will pay for themselves in energy savings plus they have a longer life so the net cost is less.
3. Change out the old-school fluorescent tubes (T12s) for new T8s. T12s are 1970s technology and they're both inefficient and the light is poor quality due to the constant flicker. T8s have little visible flicker and provide more light for the wattage. It's easy to tell what you have; the old T12s are 1.5-inch tubes, while T8s are only one inch in diameter; also, the number is printed on the end of the tube. You'll have to replace ballasts so there's a little cost there, but the reduced flicker and additional energy savings make it worthwhile.
4. Clean your refrigerator's coils. We don't think about it, but there are so many systems in a restaurant that run on refrigeration – ice machines, drink machines, walk-ins and reach-ins, prep tables, etc. I was in a tiny smoothie shop and there were eight refrigeration systems in that one little café. Cleaning the coils just once a month can save a lot of energy and it also helps the compressors last longer too. Again, it's easy and cost-free other than a little labor.

CK: You've been at many of the ACF Regional Conferences and National Conventions. What are some of the comments you hear from chefs and what have been some of their "aha moments?"

RY: When we did our leaky faucet demo, a lot of the chefs were pretty good at guessing the leak rate. They knew it was costing them, but they just didn't spend the time to fix it. Many were pretty good at our "4-on-the-door" refrigeration checkup (gaskets, door alignment, door closer, and strip curtain) but again they let little problems drag on and cost them big money. It's like hearing the dentist say you should floss regularly; you know you should but somehow it doesn't always happen. In terms of "aha moments," they were really surprised at the operation cost difference between counter-top steamers. Steamers with the same size and function can vary tremendously in operation costs. A boiler-based steamer can cost $3,000 a year to operate, while an ENERGY STAR® steamer only uses about $500 worth of energy. That's because the boiler-based steamer continuously makes steam and sends water down the drain. The ENERGY STAR® steamer has a sealed cavity that retains the water and only cranks up when it's being used.

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CK: If you look into a crystal ball, what do you see happening with the costs of energy and water?

RY: The price of water will continue to rise; it's a constrained resource and we're already behind the demand curve. As that demand continues to rise, things will get worse and costs will rise accordingly. It's much the same with energy due to our dependence on fossil fuels. In addition, our circa-World War II energy infrastructure is badly in need of overhaul and bringing on new energy sources, such as renewable and nuclear, will require substantial investments and time. All that means that not all that far into the future, we may look back on today as "cheap energy" times.

CK: We recently saw news that President Obama has signed a small business bill into effect that will allow operators to expense up to $250,000 of equipment and improvements. If someone wanted to take advantage of that, what equipment investments would pay off most for them?

RY: This is a wonderful opportunity to save some tax money with an investment that will keep on yielding dividends. Here are a few good bangs for the buck and remember that ENERGY STAR®-rated equipment is always the best choice.

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- Steamers. Like the example we talked about earlier, a good ENERGY STAR® steamer can save you thousands of dollars a year and pay for itself in a year
- Fryers. A new, energy-efficient fryer could cut the energy used by half.
- Ice Machines. Switch from a water-cooled to air-cooled system. Depending on cost of water in your location, you could recoup your costs in a couple of years.
- Demand Ventilation. This system operates based on temperature sensors and an infrared beam to provide ventilation only as needed.
- Lighting. We talked earlier about replacing incandescent and outdated fluorescent tubes, but that's often only in the back of the house. For front of the house, try the new dimmable LED lamps. They're a little pricey at about $100 apiece but again, the operational cost is greatly reduced, the lifespan is greatly increased and the esthetic is stunning.

CK: Thanks so much for taking time to talk to us today. This is information ACF members can take to the bank – literally! For a wealth of information on energy and water conservation as well as unbiased testing on energy-saving equipment visit www.fishnick.com.

ABOUT KENDALL COLLEGE'S SCHOOL OF CULINARY ARTS

Founded in 1985, the School of Culinary Arts at Kendall College is among the premier culinary-training programs in the United States, offering associate and bachelor's degrees and certificates in culinary arts as well as associate degrees and certificates in baking and pastry. The school occupies a stunning "Riverworks" campus near downtown Chicago. The American Culinary Federation Education Foundation Accrediting Commission has accredited the Culinary Arts Associate and Baking & Pastry Associate programs since 1988. Kendall, which celebrated its 75th anniversary in 2009, also operates Schools of Hospitality Management, Business and Education. Kendall College is accredited by the Higher Learning Commission and a member of the North Central Association, **www.ncahlc.org, 1-312-263-0456.** Kendall College is a member of the Laureate International Universities network. For more information, visit **www.kendall.edu.**

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