

Once and Future Kitchens

Merrill Shindler talks to visionary kitchen designer Mark Stech-Novak about game-changing equipment of the recent past and what innovations will show up in the near future. Plus opinions from a bevy of other savants.

To speak with Mark Stech-Novak about kitchen design is to tumble down a futuristic conceptual rabbit hole. Ideas are floated that seem more Ray Bradbury than **Mario Batali**—like the notion of the chef who doesn't go to his equipment...his equipment comes to him. The mind boggles—and yet much of it's within the realm of possibility. Stech-Novak has designed state-of-the-art kitchens for **Alain Ducasse**, **Wolfgang Puck**, **Thomas Keller**, **Eric Ripert**, **Michael Tusk**, **Nathan Myhrvold**, **David Chang**, and **Jean-Georges Vongerichten**, among others. And he has much to say about where we've been—and how we're going to be cooking next.

Food Arts: *You are the very essence of the kitchen equipment futurist. Where do you think we're going?*

Mark Stech-Novak: The intersection of laboratory and kitchen is really where the seeds will grow. You need kitchens that are production facilities, not just gastro-playpens for the culinary intellectual. But for those production facilities to become kitchens of the future, the stove-makers and the metal-benders, the freight-carriers and ketchup-makers must all be involved. Nothing in the chain can be taken for granted.

FA: *Please explain...*

MSN: Design has urbanized. Just as the ultra-hip desired living space is a loft with an open floor plan, gastronomy wants this same aesthetic—an atelier for the technique-hungry chef. And as an urban chef cannot have the space of the country manor, he makes do with less, creating more variety with multipurpose tools. This isn't just about technology. To move from our energy-guzzling food system, technology needs to be embraced on so many levels—and rejected when it's more tampering than tech.

FA: *Do we need to rethink how cooking is done? Do we need to go back to the beginning?*



The future is now. Nathan Myhrvold's Cooking Lab is equipped with Rational combi ovens, a Wood Stone wood-burning oven, and a modernist batterie, including a rotary evaporator, an immersion circulator, a cryogenic freezer, and more.

MSN: Not really. The changes in kitchen equipment are not earth-saving in efficiency, functionality, or productivity. But still—today's combi oven is more efficient than it was in, say, 1999. But not to a degree that is transformational for the industry energy balance sheet. The gas-fired appliances we use today don't differ significantly from those of the last millennium.

You only need to go to a European equipment conference and see the leaps in reduced chemical usage, lower energy consumption, reduced carbon footprint in manufacturing, and so forth. But in the real world, where millions of people are fed every day, the cost of reengineering, testing, retooling, and remarketing new products often just dies in the boardroom. The question is: How do we create, distinguish ourselves, and grow—while constrained by the credo: You must do more with less. The corollary credo is: Cooking with a conscience is our collective burden.

FA: *So...your prognostication?*

MSN: I have said this many times to many clients: I can build

Past Innovation, Future Predictions

We cast our net throughout the industry and came up with some fascinating observations—and notable glimpses into the future:

KEN SCHIMPF KDS Consulting & Design, New York City:

The most important innovation of the past 25 years is induction. While induction has been around for decades, it's fairly recent that it has been regularly showing up in kitchens. It's precise, it's quick, and it's green—84 percent of the energy consumed by the unit is supplied *directly* to the cooking vessel and not to heating the surrounding air. Gas flames, by comparison, supply something less than 50 percent to the vessel; the rest is waste heat. Not only is this obviously more energy efficient in use, it also imposes less heat load in the space that must be dealt with by the HVAC.

Looking to the future, I predict that pervasive, affordable, and practical green technologies will be ubiquitous in commercial kitchens in the next 25 years. The commercial kitchen's impact on the environment is the ludicrous irony of our industry, which I'm told has the largest carbon footprint per square foot of any industry. This is taking into account the life cycle from growing and raising foodstuffs, through processing, delivery to the kitchens for further processing, to the plate, and finally washing the plate. At the same time, I will venture to say no industry is as reliant on a healthy planet as the restaurant industry.



JIMI YUI YuiDesign, Takoma Park, Maryland:

The biggest game changer of the past 25 years has been a combination of sous-vide equipment, vacuum machine, and the medical recirculator. The technology pushed the boundary of cooking methods and produced ideas that changed the culinary world.

And the same is true for the future. It belongs to water, one of the most valuable commodities we have. I speak of water filtration like Vivreau, Fresh, Natura—these products challenge the notion of bottled water as a luxury experience in restaurants. We also have to look into the future to localized high-efficiency alternative energy—something better than the next generation solar/battery system—systems that can make restaurants self-sustaining.



BRAD BELLETO Vision360Design, Dallas:

Clearly the biggest game changer has been rapid cook ovens. So many more hospitality places have been able to offer food in smaller spaces and without the need for highly trained labor. Just look at places like Starbucks, Subway, and Dunkin' Donuts—thousands of units can now offer food, expanding the life span of these companies. The Turbo Chef line in particular has put many places into the food business and at the same time has been able to educate "government" people about this new technology and its proper use. It's like a convection oven on steroids, doesn't need a hood, is three times faster than standard units—it takes the heat and runs the airflow up to 60 miles per hour.

And for the future: The expanding role and type of induction cooking. The energy saving and the safety value

of this style of cooking have played a bigger and bigger role, but now we're finding all kinds of new ways of using this technology, and so it's more a *technology* that will dominate, as opposed to just one piece of *equipment*.

Across the spectrum of kitchen designers and chefs, there's great praise for two of the most respected pieces of new equipment to emerge in the past quarter century. One is the Wood Stone wood-burning oven, a fixture in hundreds of restaurants around the world. No less a fan than Wolfgang Puck—who has more than 90 Wood Stones in his restaurants, says, "If I could only have one piece of cooking equipment in my kitchen, it would be my Wood Stone oven." And as a corollary piece of equipment, the combi oven is viewed as an essential piece of equipment—a game changer for the many chefs who rely on its versatility at culinary facilities that range from California Pizza Kitchen and the Cheesecake Factory to the Chicago Art Institute and the George W. Bush Presidential Library and Museum. It used to be that you needed a stovetop and a gas oven to cook; now, wood and combi define food preparation in 2014.



There is also a new wave of restaurant kitchens that are no longer what we think of as kitchens. They're food laboratories, in which new tastes and techniques are relentlessly developed. Indeed, José Andrés has a ThinkFoodTank in Washington, D.C., that develops dishes for his many restaurants. Ferran Adrià famously shut down elBulli to spend his

time in endless experimentation. The kitchen at Mugaritz in Errenteria, Spain, is barely recognizable as a kitchen at all; it has the sleek, futuristic look of the Holodeck on the Starship Enterprise. The kitchen at Noma in Copenhagen features a research library and an herb garden. And Moto in Chicago has several kitchens—including a research facility dedicated to green technology.

And, of course, we don't actually have to look into the future to see the future. At his Husk restaurants in Charleston, South Carolina, and Nashville, Sean Brock has gone state-of-the-art by going back—not to the future, but to the past. In Charleston, he uses a wood-burning Mugnaini Tuscan Grill which, according to general manager Dan Latimer, is like an old-fashioned pizza oven, but with a wood-burning fire that never goes out. "We lit it back in November of 2010, and it's been burning hickory and oak ever since." In Nashville, it's an Argentine-inspired Grillworks unit, with an open grate that allows the ashes to drop onto a platform, where all sort of dishes can be cooked—like chicken hearts roasted in the embers with West African mustard onions. It's a high temperature unit, running from 800 to 1,000 degrees, in which Brock heats his Le Creuset cookware. It's almost primitive—yet it's futurist as well. A very now style of cooking—with its feet well planted in history. —M.S.



Left to right: Polyscience sous-vide professional classic thermal circulator. Vac-star easy vacuum sealer. Alto-Shaam Combi Therm combi oven. Wood Stone wood-burning oven.

you a palace of gastronomic dreams, a kitchen of beauty, function, and form, but a great chef can make a five course meal with a Bic lighter and a knife. Somewhere in between lives a space for creating food.

FA: That makes molecular gastronomy seem way out in left field...Are these techno-chefs losing touch with real cooking, and are they living in the real world?

MSN: The techno-radicals! In Spain, Ferran Adrià became the wild-eyed chemist of the kitchen. For him, there's an intersection of laboratory and kitchen. Rotating evaporators and centrifuges, freeze driers, and anti-griddles needed to be sourced for the new pioneers of molecular gastronomy. And yes—it can be said that post-millennium kitchens are at cross purpose: ar-

tisanal and rustic to one side and labo-slick to the other.

FA: So what does it all add up to?

MSN: When Myhrvold asked me to design his kitchen, it was apparent that there would be a lasting move to an analytical view of food. Simple burners and ovens no longer were accurate enough. Cold was a manipulative element, interposed into process. Uncommon states of matter from gas to liquid to solid became common alterations for foods. The goal to transform foods, to find their essence, to paraphrase their qualities and transpose those qualities into another form became the grail quest of modern cuisine.

FA: Back in 1999—exactly 15 years ago—you wrote a story for

Food Arts that looked into the future. Can we check on how that future is doing? First of all, there was molecular stasis "refrigeration." You wrote: "The technology isn't there yet, but, given the massive amounts of energy sucked up by refrigeration, it would only take another energy crisis to provide the economic incentive to develop such alternative means of food preservation...."

MSN: Wait another 30 years for that. People toy with what absolute zero can do. The Japanese freeze tuna on ships at minus 86. I'm putting that into kitchens now—it's pretty commonplace at high-end properties. It's from the realm of science, real laboratory stuff.

FA: Concerning mini-ovens with multiple abilities, you wrote: "These are on my drawing board right now. Nothing about these ov-

ens is really difficult to achieve; first-class on any airplane has pretty much the same concept in its galley. The major difference is that I intend to incorporate laser or xenon light technology into mine."

MSN: It's gotten as far as the combi oven, which is steadily shrinking in footprint, and is now more reliable, less finicky, an imposing beast in the rough world of the kitchen. There are companies in Germany that are working on mini-ovens, but they're still 10 years away. They need to make changes in the molecular structure of the walls of the oven, to make them out of three different types of metal, each of which will react differently.

FA: Of induction cooking, you wrote: "The current methodology is to heat a pan on the surface. In my prototype, the surface is the pan and is removable and exchangeable." ➤



A Viking island suite is the centerpiece of the glass-enclosed finishing kitchen Ken Schimpf designed for Travelle at The Langham, Chicago. Below: Jimi Yui designed a \$1.2 million kitchen that seems to almost float in the air for Lincoln Ristorante in New York City. Photo by Joseph Scafuro.

MSN: We're there. We have induction. But what you can induce is mono-directional. I'm talking about the anti-griddle and induction combined.

FA: You wrote of pull-down cowl broilers that were "completely new to commercial kitchens...their ability to incinerate and exhaust effluent at its source, doing away with the need for clunky range hoods to handle huge masses of stinky, messy, greasy air."

MSN: Every fast-food restaurant has one, if you look at the way burgers are made. But you don't have it for fine dining restaurants. There is a company that's working on it. And, there's a company that's developing a "food iron"—like you'd iron your clothes.

FA: Sounds like the way I used to make grilled cheese sandwiches in college. Now, when it comes to catalytic cleaning, you wrote:



"The difference here is that the workstation will do it via light... and in not too many years, hand-held laser saws should replace most mechanical cutting devices, perhaps even kitchen knives."

MSN: Well, at least the catalytic cleaners exist already—most of us have self-cleaning ovens in our homes. You turn the temp up so high it carbonizes the grease. And we're using catalytic generators to make ozonated water, electrolytic water. In Japan, hospital dishwashers all wash with ozonated water.

FA: Now organizational software—that doesn't sound so far out in left field...

MSN: Ah, but there's so much. How do you interact with your refrigerator? We're building the IOS platform to allow us to do everything in the refrigerator from a smartphone or laptop. It's Bluetooth—the next generation. You can place orders without ever having to go to a counter. There'll be a projection of a keyboard on the table in front of you that can be ordered from. We're going to tag everything with RFID (Radio Frequency Identification) e-tags—you swipe everything from fish to meat, and it will track from loading dock to stomach.

There's so much more that Stech-Novak sees in the future: xenon heat lamps, spun polymer amalgams, centrifugally heated plates, ultraviolet and ultrasound dishwashers, seated cooks, ergonomic surfaces, cloned food. And the always elusive gastrospeen. Fifteen years ago, he wrote that the world was: "Just waiting for me to invent it." The world still waits. But someday, someday...

Merrill Shindler is an editor of *Los Angeles Zagat Survey*, restaurant critic for the *San Gabriel Valley Newspaper Group*, and host of a weekly radio show on KABC-AM, Los Angeles.