



Death Knell For The Short-Circuit Hood?

The short-circuit hood may not be on its deathbed, but its medical chart isn't looking too good. That was just one of the points that came out loud and clear when the Chicago regional chapters of Foodservice Consultants Society Int'l. and the Manufacturers' Agents Association for the Foodservice Industry recently put on a full-day ventilation seminar at Harper College in suburban Chicago.

More than 230 architects, building inspectors, consultants, dealers, fire marshals and operators signed up for "Up Your Stack," supported by a long list of ventilation makers who sponsored the day. It was a gigantic turnout, unheard of for a regional confab, and it proved that program chair George Zawacki, FCSI, had hit a very sore industry nerve.

No question that ventilation has always been a hot topic in foodservice, but it's only been in the past decade or so that anybody's had the technology to actually *measure* what goes on around the hood. The happy result, attendees learned, is that a lot of what used to be approximations can be tested and measured, and tiresome hot-air debate is giving way to refined results.

One of the discoveries in recent years, for those of you who don't focus every day on ventilation, is that the short-circuit hood doesn't quite do what everybody thought it did.

Originated as an answer to the energy crises of the 1970s, the idea was to bring makeup air straight in through the hood, thus satisfying code requirements for exhaust volume while reducing the cost of tempering the makeup air. Sounds good, and it was a popular solution. But now, even most manufacturers who sell them will try to steer you another way. The problem, now so clear in hindsight (and testing): First, why spend the fan energy exhausting air you already know *isn't* carrying effluent, and why let that flow create turbulence that actually disrupts the exhaust of the greasy, smoky cooking plume?

Short circuits can work in some situations, tests have shown. But not many. Where only low volumes are needed, they might work. But usually they're part of a package overspec'd to allow a margin of error, in which case other alternatives do the job better, and for less.

To a lesser but significant extent, the same is true for higher-speed air curtains, as shown by the Schlieren imaging system at the Commercial Kitchen Ventilation Lab in Wood Dale, Ill. There *is* such a thing as too much airflow, not only because it's an unnecessary HVAC cost, but because it creates turbulence that botches the exhaust plume. New low-speed air-curtain designs are much more effective.

The game is capture and containment, and the grease filter, too, is a major player, speakers noted. Again, with the benefit of advances in measurement technology, makers have discovered what many knew but couldn't quantify—those efficiency ratings were based on large-particle measurements, and smaller particles and vapors were escaping in large but unknown quantities. Fortunately, new filter designs now are tightening their grip with a bunch of innovative new techniques.

As presenters like Don Fisher of the Food Service Technology, Rich Swierczyna of the CKV Lab and a host of leading-edge manufacturers made clear, measurement technology has changed the key question. It's no longer how *much* air to exhaust, but *which* air to exhaust.

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