LETTERS

Drain Water Heat Recovery

In regard to November's Emerging Technologies column, "Drain Water Heat Recovery," nice article, but one statement seems to be a bit off. The authors state "On-demand drain water heat recovery units are durable and easily integrated into existing and new construction." It has been my personal experience from numerous efforts to demonstrate this technology at Army installations that finding suitable places to install it in existing structures is extremely difficult. Often the drain lines mix warm drain water with cold drain water prior to locations in which it is feasible to install the drain water heater, thereby making the amount of heat that can be reclaimed small. Replumbing is almost never, if ever, cost effective. Of course, in new construction this issue can be alleviated by designing the drain system to accommodate the heat exchanger installation.

David M. Underwood, P.E., Member ASHRAE, Champaign, Ill.

The Author Responds

David Underwood's points are well taken. In new construction, drain water heat recovery can be accommodated easily, provided that it is incorporated into the plumbing design in the first place. An exception is a single-story house built on a slab, in which case there is little if any vertical length of drain pipe into which a drain water heat exchanger can be inserted. For existing dwellings, we were more than a little too casual in the article about the ease of retrofit (mea culpa). One situation where retrofit could be done expeditiously is where vertical drainpipe from a shower runs down an unfinished basement wall, out in the open. The more common case where walls would need to opened up to access drain and supply water pipes has little chance of being a cost-effective retrofit.

John Dieckmann, Member ASHRAE, Lexington, Mass.

Optimizing Chilled Water Plants

In September's "Optimizing Design & Control of Chilled Water Plants, Part 2: Condenser Water System Design" by Steven T. Taylor, P.E., in Figure 5 on the chilled water side of the heat exchanger, I suggest a bypass valve be added at the primary chilled water pump suction side (between chiller return and supply lines), so that during full economizer (no mechanical cooling needed), chilled water return doesn't have to be pumped through chiller evaporators after leaving the heat exchanger. This bypass valve functions differently from the bypass valve at the chilled water pump discharge side, whose main function is to maintain minimum flow through the chiller evaporator. This approach will further improve the chiller plant efficiency during water economizer cycle.

Dawen Lu, P.E., Member ASHRAE, Glen Allen, Va.

The Author Responds

I agree, and in fact we always include this bypass on our projects to improve efficiency and also to allow chiller isolation and servicing when on water-side economizer only. Leaving it out was an oversight. The bypass is shown clouded in the corrected schematic below and is included in the online version of the article.

Steven T. Taylor, P.E., Fellow ASHRAE, Alameda, Calif.