

Many years ago, the furnace in our house developed a crack in the heat exchanger and had to be replaced. At the time, I was really getting into hydronics and reasoned that if I wanted my customers to embrace it, I should be using it in my own home.

I ripped the gas section out of the furnace, installed a heating coil just under the air-conditioning A-coil, and then put in a gas-fired, power vented copper-tube boiler. Fortunately, everything I needed for the project fell off a truck, right in front of my house.

Control should have been very simple – existing thermostat calls, boiler, pump and fan come on; house gets heated. But I was not content to leave it at that. I added a Tekmar controller that had indoor-outdoor reset capability and would also run a future indirect domestic hot water (DHW) heater.

I was like a kid on Christmas morning when I had it all together and ready to fire up. I read the manual on the controller from front to back and proceeded to program it to within an inch of perfect. Design outdoor temperature, design indoor temperature, warm weather shutdown, boiler supply, boiler minimum return, forced air heating, *check check check*. I even programmed things that didn't apply to my application. It was going to be *great!*

My euphoria was short-lived when the heating season started. My family said it was cold in the house. I would check the thermostat in the hallway and it was at setpoint. That was not an acceptable explanation. Everything was running as it should and that didn't cut any ice either. My wife told me the toe-space grille in the kitchen was blowing 'cold' air over her ankles. Even a remote prospect of having to spend more time in the kitchen propelled me into action.

I realized that with indoor-outdoor control, the air coming off the heating coil wasn't always as hot as it had been with the furnace. Even though the house was still being heated, the *perception of comfort* was not the same. And then it also hit me that with cooler air, the fan was running longer cycles than before. We were spending a dime on electricity to save a nickel on gas.

I did what countless system operators have done over the decades. I cranked up the reset curve to get hotter water in the shoulder seasons and keep the customers happy.

The experience I've gained on my own simple system has been helpful over the years, particularly in understanding what comfort means to different people. The goal in what we do is to provide a comfortable indoor environment, and all the technology in the world can't always guarantee we'll be successful.

We've got a different boiler now, but the Tekmar settings are the same.