

# FROM THE FIELD

## An evening spent with apprentices

BY DAN FOLEY CONTRIBUTING WRITER

Charlie Ayres runs the HVAC apprenticeship program for ACCA – National Capital Chapter and has for over ten years, along with Warren Lupson. In addition, he teaches a class of fourth year apprentices. This is a volunteer position. Yes, he gets paid a stipend for teaching the class, but trust me when I say that this is a labor of love. Charlie's full time position is with a large mechanical contractor, Shapiro and Duncan located in Rockville, Md., as VP of Service and Special Projects.

Every December, Charlie invites me to present a class to his fourth year hydronics students. I can't do what Charlie does, as I am not a teacher. What I can do is share my 27 years of experience designing, installing and servicing hydronic systems. With a few skipped years, I have done this every year since 2004. I have come to look forward to this every year and thoroughly enjoy it. I think I get more out of it than the students.

First, let me express my respect and admiration for both the apprentices as well as their instructors. I typically get up at 4:30 am, leave my house by 5:10 am and arrive at the office at 5:45 am. By around 4:30 or 5 pm, I am tired, hungry and ready to go home. But not these guys. They started streaming into the classroom a little after 5 pm for a 5:30 pm starting time. Class runs from 5:30 pm to 8:30 pm, two nights a week, from September through early May. It is a four-year program.

Keep in mind they do this after working all day, sometimes outside in the cold or heat, sometimes after running service calls all day, and sometimes dirty and tired. Then, they get to battle D.C. rush hour traffic to get to class on time. They are away from their families two nights a week as they invest the time to better themselves. I was tired after one day. I cannot imagine doing this twice a week for four years. My hat is off to the apprentices who successfully navigate this four-year program and earn their certificates.

While I did not go through a four-year apprenticeship program, I have an affinity for those who have. Several of my technicians have graduated from the Virginia apprenticeship program, so I am well aware of the sacrifices and hard work that goes into earning a certificate. It is an honor to be invited to speak to Charlie's class once a year.

Charlie lays the foundation of hydronics theory and practice teaching out of the I=B=R Coursebook. When I come in, I like to show the students how to take the lessons they have learned and apply them in the real world. I showed them photos of actual jobsites, tubing layouts, mechanical rooms, and the reasons why we used certain products and piping arrangements on actual projects.

I took them through one of my projects from start to finish. I explained to them that nothing gets done until the job is sold. Then I went through the design, layout, equipment placement, piping and installation of one of my projects. I emphasized the importance of proper commissioning and used examples of some of our

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commissioning reports. I explained how we use a digital flow meter and flow hood to confirm proper water flow and air flow to each zone according to the design documents.

After a short 15-minute break, we got right back into the program. I spent the next 45 minutes discussing project documentation. I explained how I am now going back on jobs I installed 10 to 15 years ago to service or repair them. I look at these systems and try to remember what I was thinking when I piped a system or where certain pipes or ducts went.

It is very difficult to properly service a system without the proper documentation. The analogy I use is that it is like trying to find your way around a strange town without a road map. You may eventually get there, but it will not be by the most direct route. Time will be wasted tracing out dead ends.

I recommended that at minimum they have the equipment I&O manuals in a three-ring binder. A printout with piping and tubing layouts, duct layouts, flow diagrams, electrical schematics and sequence of operation should be included as well. I explained that this is the sign of a professional installation, and stressed the importance of these documents. I added that you do not need AutoCAD or expensive software to do this. A simple pencil sketch and hand-written notes with the sequence of operation will save the day when needed. Professional-looking documents can also be created with simple inexpensive drawing programs such as Visio or similar programs.

In the past two weeks alone, I have been called in to survey three non-performing projects. None of them had documentation on site, making my job that much harder. If the class learned nothing else that night, I hope they walked away with a better understanding and appreciation of project documentation.

We then quickly reviewed a cross section of some of my projects: commercial and residential, new and replacement, large jobs and small. I wanted to give them an idea of the types of systems they might run across in

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Charlie Ayres of Shapiro & Duncan, Rockville, Md., heads the ACCA-National Capital Chapter HVAC apprenticeship program.

explained, from the perspective of a business owner, what I was looking for in an employee. I discussed the importance of taking pride in your work and giving your best effort. I talked about the importance of improving yourself every day and making yourself a valuable employee. I suggested they spend 30 minutes every day reading trade publications, product manuals or industry textbooks to improve their knowledge. I even went over the little things that make a difference, such as appearance, neatness, showing up on time, checking your work and filling out paperwork. While this may seem dull or mundane, these small things are part of being professional.

The three hours flew by, and I soon found myself out of time. Another year in the books. I stuck around after class for a few minutes to chat with the students. I offered my business cards with an invitation to call me if they ever ran into something unusual. I did not guarantee that I would have the answer, but I gave the promise that I would give it a shot or refer them to someone who did have the answer.

By no means am I a polished instructor. I am just a regular guy who runs a mechanical contracting company who has seen a lot over the years. I feel obligated to pay back the old-timers who took the time to instruct me many years ago by spending some time sharing my experience with the up-and-comers. I have found I gain as much from the experience as those I am teaching. I would encourage my readers to do the same and see what I mean. It is just a few hours out of your schedule, and I promise you will find it worthwhile. ●

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the field. I then showed them some of the latest trends in mechanical contracting, such as solar and geothermal (or ground source) heat pumps. I explained that hydronics is what ties these systems together. A fundamental understanding of the basics of hydronics is essential to the proper application and installation of these systems.

At the end of the evening, I took a few minutes and



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