With the entire lesson on his phone, which is projected on the screen, Hughes is no longer tied to the front of the class.

Today's hydronic classroom

Evolving equipment and classroom technology brings constant change to Alberta technical school

By Simon Blake

The Northern Alberta Institute of Technology (NAIT) in Edmonton has long been known for its training programs in hydronic heating. But like the technology itself, that training is constantly evolving. The classrooms, labs, teaching and delivery methods look considerably different today that they did just 10 years ago. *P&HVAC* recently had the opportunity to tour NAIT's hydronic training facilities with David Hughes, associate chair, pipe trades.

NAIT puts a strong emphasis on hands-on work and the labs are continuously being updated with new equipment. When a manufacturer brings out a new boiler, pump or other piece of equipment, they donate examples to trade colleges around the country to ensure that technicians receive up to date training. A look around the NAIT labs shows that boilers are now almost exclusively high efficiency condensing units. "We left one non-condensing unit just to teach service," says Hughes.

In the third portion of the hydronics installer program, students are required to pipe and wire a functional hydronic heating system entirely on their own. Typically a class has 24 students, but running that many boilers at one time isn't possible.

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"One of the biggest problems is that there is nowhere to dump heat," says Hughes. The heat is used where possible; one boiler heats the slab in the next room. At the time of P&HVAC's visit, steamfitter students were changing out the primary loop. But with potentially four to five million Btu/h, "we are talking about putting a huge glycol loop outdoors," says Hughes.

As well, the apprentices are learning more about on-demand water heaters these days. "We get a lot of demand for that training," he added. Homeowners don't maintain their units and they can clog up with calcium, which is bringing more work for service techs.

Another change is to encourage the use of pre-built hydronic panels – pre-piped with pumps, valves and controls – to get away from the "science experiment" look of so many custom-built hydronic installations.

Students learn how to build from scratch, but the panels make a neater job and prove less frightening to a homeowner seeing a series of pumps, mixing valves, piping and controls on a 4x8 sheet of plywood for the first time, says Hughes.

"The problem is, they are expensive," he adds.

Technology in the classroom

While instructors must stay current on the latest hydronic heating technology, they must also keep up to date on teaching technology.

This includes the adoption of things like Apple TV in the classroom, which allows the instructor to project from their computer or phone to a large screen. WolfVision "Ceiling Visualizers" – basically a camera suspended from the ceiling – allow instructors to project drawings or do product repair demonstrations on a desk and have them projected on the large screen for easy viewing. They can also control the technology from and have their entire presentation on their phone, which frees them to walk around the classroom rather than being tied to the front of the room.

"It's amazing what a difference all this has made to the institution," says Hughes.

Operating at capacity

NAIT's pipe trades division – plumbers, gas fitters and steamfitters – trains about 2,000 apprentices per year. Classrooms are always busy.

"The biggest problem is getting into a classroom to make changes because they are so busy." And because there is such a demand to train apprentices, there is no room for a pre-apprenticeship program, says Hughes.

However, NAIT does offer training for the Canadian Hydronics Council Hydronic Installer and Hydronic Designer certification through its continuing education – on weekends – or distance education (online) programs. Experienced technicians can also challenge the exams. More information is available at www.NAIT.ca/coned. ✚