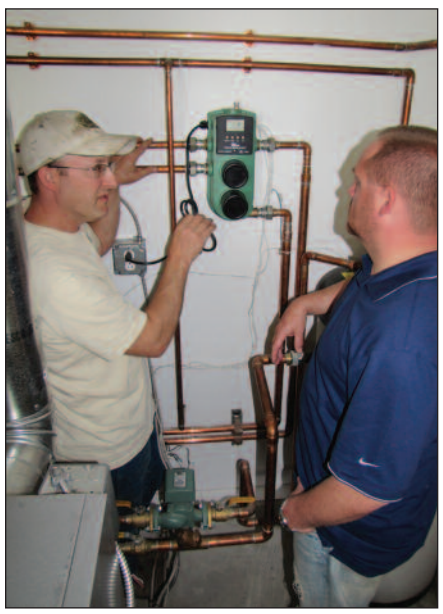
In the Land of the Midnight Sun

In Alaska, there are few rules. Those that stand are rather unique to the territory.

While it's legal to shoot bears, waking a sleeping bear for the purpose of taking a photograph is prohibited. It's considered an offense to push a live moose out of a moving airplane or to give alcoholic beverages to a moose. And in Nome, residents are not allowed to roam the city with a bow and arrow.

So a construction company run by three brothers who also do all of their own hydronic work — in a land where hydronics truly is king — doesn't sound so unusual, does it?



Joel Ballek shows a homeowner how to use the new Taco radiant mixing block at Stilmeyer Estates, North Pole, Alaska.

Certainly not in a place where the weather changes quicker than you can say, "Deadliest Catch." White Eagle Construction, based in North Pole, Alaska, was founded by the three Ballek brothers, Jeff, Jerry and Joel, in 1980. "We've had jobs within 200 miles of Russia," said White Eagle VP Jerry Ballek. "Jeff has been a builder since he graduated high school; Joel and I worked for several heating contractors as young men."

Builders, plumbers, pilots ... mine engineers?

As general contractors and licensed plumbers and pipefitters, White Eagle tackles industrial, commercial and residential work all over Alaska. Technicians from the company fly to many of their jobsites, One of the company vehicles and, without a doubt, the fastest, is a small bush plane, allowing the Balleks to get to remote plumbing and heating jobs where access is a limitation for other companies. "Jeff has his pilot's license, so he can fly Jerry or me into a job in the bush," said Joel, second VP. "Also, there's no question that it's the quickest way to run for parts."

The winged vehicle of choice is a blue and yellow Piper Cub, the preferred plane among bush pilots, known for its ability to make super-short takeoffs and landings. Its versatility also includes the ability to slip into water-landing pontoons, or tundra tires. "There are several compartments ideally suited for boxed circulators and zone valves," explained Jeff. The Cub is a great asset in accessing remote jobsites within 300 miles but, when a special job at a greater distance comes along, the Ballek brothers must board a commercial flight, which they needed to do to get from North Pole to Nome.

White Eagle was hired to run a mine pit dewatering system down a mountainside for Rock Creek Mine in Nome, America's westernmost city and home to the Bering Sea Ice Classic, a six-hole golf game played on the sea ice. The town also marks the end of the 1,100-mile Iditarod. Google Maps can't give you driving directions from North Pole to Nome, and a dashboard-mounted GPS would fry a motherboard if you insisted on navigating the span. Without a dogsled, there's no way to cover the distance by land.

Nome in January is inhospitable, to say the least, with just six hours of daylight. The job required working 12 hours a day, seven days a week, for six weeks.

"We ran six-inch, 12-inch, and 24-inch insulated HDPE pipe from six dewatering wells on the top of the mountain. The wells are giant submersible pumps, hundreds of feet down in a gold pit," said Joel. "They run nonstop, but the pit never dries."

The pipe needed to be fused before it was laid in the ground. The five-man White Eagle team rode

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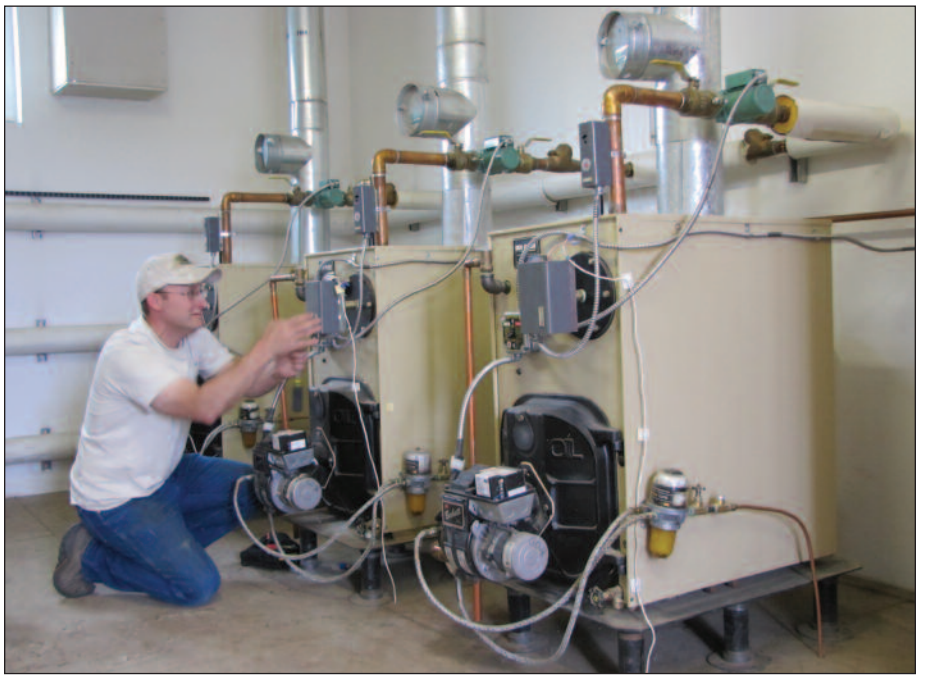

Joel Ballek wires in the Taco pump to the Aqua Stat at Eagle's Nest Condos in North Pole, Alaska.

snowmobiles to their fusing tent at the base of the mountain every morning. The work had to be done in a heated space, since -20° temperatures and sustained 60 mph winds wouldn't allow fuse welders to reach operating temperature. A small dozer was used to tug the huge pipe through the tent as sections were added, until a length of 200 feet was reached.

"Some people can't hack it here," said Joel. "I really can't blame them. Many people come from the Lower 48 looking to make a quick buck but end up going home with their tails between their legs instead. I'll admit it, after fusing 20,000 feet of pipe in a month, I'm ready for a break.

Five-month payback

A "normal" project for the Ballek brothers usually consists of keeping a building warm in conditions that most can't imagine. The owners of Moose Creek Apartments needed a solution to their heating bill woes. Comprised of seventy 1,100 square-foot rental units, the complex was heated by three oil boilers, two at 580 mbh and another at 400 mbh. A 5,000-gallon underground fuel tank kept the boilers running, but not for long. "A full tank lasted just a month," said Joel. "It sounds crazy to people who aren't familiar with our climate, but they just can't imagine a high of -30° for two months straight."

With a 10-month heating season, and all domestic water coming from the three big boilers, the complex burned nearly $250,000 worth of oil each year. "A solution to the problem came from taking a step back, technologically speaking," said Joel. "Coal is cheap and plentiful here, and coal-fired boilers have come a long way."

Over the course of a summer, White Eagle installed a 2-million Btu coal boiler. The unit is enclosed in a mechanical room shed and self-feeds from a seven-ton outdoor hopper. The boiler supplies a 2-million Btu heat exchanger. From there, heavily insulated supply and return lines connect to a Taco 0014 circulator, moving 180° water to the apartment building. Inside, ample fin-tube baseboard and two 120-gallon indirect-fired water heaters draw heat from the system.

"The boiler uses about a ton of coal per day in the summer and a ton and a quarter in the winter," said Fred Watson, maintenance manager at Moose Creek Apartments. "The coal truck comes once a week to fill the hopper."

Next to the big water heaters, (or "water makers," as any true Alaskan contractor would say) the three existing boilers are lined up in a row. "The coal boiler will keep the apartments warm with outside temps down to about -30°. After that, one of the lead-lagged oil boilers provides supplemental heat," explains Watson. "We need to see temps in the -40 or -50 range for a second one to fire. The third one's a rarity; more of a backup unit than anything."

The owners of the apartment complex invested $78,000 in the new heating system and saved almost double that amount in one heating season.

Start to finish

Aptly named, Eagle's Nest Condominiums is one of many projects that White Eagle Construction has completed from scratch, from framing to plumbing. The Ballek brothers are not only mechanical contractors and builders, they are developers as well. "We've worked on Eagle's Nest for a few years," said Jerry. "We complete one four-home building at a time. Five of seven are now complete."

The complex is all radiantly heated with concrete poured over half-inch PEX, the best option for cruel Alaskan winters. Six gleaming exhaust vents protrude from the low roof of a centrally-located boiler shed. All six boilers are oil-fired; three are 270 mbh and three are 295 mbh.

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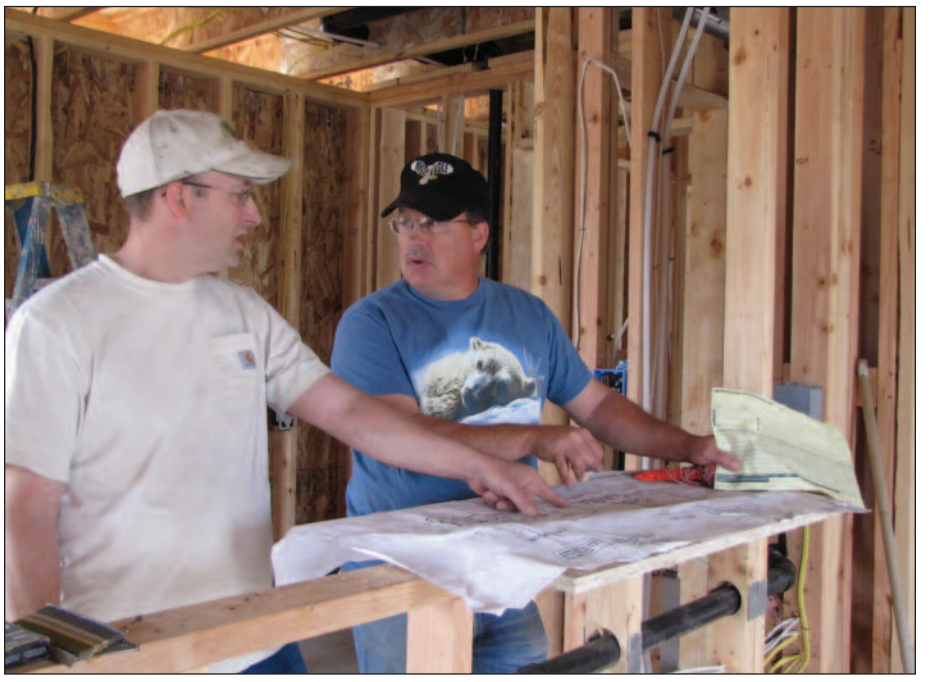

Joel and Jerry Ballek reading the blue prints for the domestic water and sprinkler system at Eagle's Nest Condos in North Pole.

PLUMBING

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Jeff Ballek and his nephew Justin Ballek put together a culvert for a new subdivision off of Patriot Drive in North Pole.

"We got help from engineers at Taco and our distributor, Ferguson Enterprises, to design the piping configuration," said Jerry. "Water from the boilers is piped underground via four-inch insulated HDPE pipe, surrounding 1 1/4 inch PEX supply and return lines. Each boiler is equipped with an 007 pump, tying it into the primary/secondary loops. From there, a Taco 0013 is used to supply each building. We use Watts pressure reducing valves (PRV) on every system we install. They're quickly installed, and we've never had an issue with them."

Water coming from the utility gets knocked down from 105 psi to 60 psi and, before it enters the boilers, a PRV reduces pressure to 12 psi. In the crawlspace of each condo, a Taco radiant mixing block tempers the 180° supply to roughly 105° supply water temperature. With the built-in outdoor reset control, the mixing block changes the temperature according to the 110° temperature swings that North Pole can see in one heating season.

"Each individual unit has a 40-gallon indirect water heater with a Watts mixing valve," said Jerry. "We crank the heat up in the tank and use the mixing valve to temper the water down to 120°. It's the best way to increase domestic hot water capacity without installing a bigger tank and storing more hot water than needed."

Been doing this a while?

Each water heater is filled by a Taco 007. "We use a lot of 007s," said Jerry. "I know for a fact that I am the fastest circulator installer in the U.S." Several years ago, Taco conducted a nationwide contest to see who could swap out the cartridge on a 007 in the least amount of time. Before Jerry showed up at the distributor, the fastest recorded national time was more than one minute. He shattered the record with a 21-second finish.

Jerry may be one of the fastest installers, but he and his team of brothers are also some of the most competent, in a location that demands excellence. ●

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