



## PP-R PIPE SYSTEM PROVIDES “ELEMENT” OF SAVINGS AT MULTI-STORY, MIXED-USE BUILDING

### PROJECT:

Elements at Rivers Edge  
Housing Complex,  
Heating Distribution

### PRODUCTS:

**aquatherm blue pipe**<sup>®</sup>

### LOCATION/DATE:

Red Deer, AB  
2010-2012

### AQUATHERM ADVANTAGES:

- The heat fusion process leads to reliable joints in a short period of time
- Overall cost savings of approximately 20% compared to copper and steel
- PP-R's natural sound insulation properties lead to a quiet and comfortable living environment

The \$30 million mixed-use project known as Elements at Rivers Edge started construction in September of 2010. The owner of the project wanted a structure with spectacular views and an environmentally conscious makeup. He called on Rick Dearing, president of Red Deer Plumbing, Red Deer, Alberta, CA, to help out with the plumbing design because he knew Dearing could deliver the desired energy efficiency standards.

Because of the unique mix of residential and commercial property in the 100,000-sq-ft-space, it needed a heat pump system with a continuous supply of water. The building contains several luxury condominiums in the tower section and retail space in the lower section. Dearing worked with Larry Hope, an outside account manager with EMCO Corporation's Red Deer, AB branch to convince the owner to put Aquatherm piping in the specs for the project.

“I spoke with the owner about this product from Germany that I thought would be suitable for the application,” Dearing explained. “I had toured the Aquatherm plant in Attendorn, Germany, and had used the piping in a few jobs I did prior to the Elements project.”

### SEEKING LONGEVITY

Aquatherm is a 40-year-old company based in Germany that has been growing rapidly in popularity throughout North America. The company offers an eco-friendly, non-corrosive piping system alternative made of PP-R (polypropylene-random). The piping



is unique because not only is it 100% recyclable and nontoxic, but the piping systems are longer lasting than traditional metal piping because of the heat-fused connections and sturdy non-corrosive material.

“EMCO has a strong relationship with Red Deer Plumbing and we knew Dearing had used Aquatherm in the past, just not to the scale of this project. Dedication and strong product knowledge that the staff at EMCO Red Deer had, made Dearing and his team comfortable using the product,” Hope added. “Between EMCO and the contractor, we convinced the building owner and engineer on the longevity of the product, and the cost savings in terms of labour to install.”

Both Hope and Dearing agreed that the ease of installation and the fact that Aquatherm piping is non-corrosive made it an ideal candidate for the project as opposed to traditional steel and copper pipe. “When you combine the material and labour costs, going with Aquatherm piping was less expensive,” Dearing said. “The cost of labour



to put black steel or copper together would far exceed what it costs for the labour of Aquatherm piping.”

## UPGRADED TRAINING

Unlike traditional welding and soldering, Aquatherm’s pipes are connected through heat fusion which can save over 50% on labour time. Even though Dearing and his team had used Aquatherm PP-R piping in the past, they needed training on the larger sized pipes for a project of this size.

“We had done some smaller Aquatherm jobs but when we started dealing with 3-inch, 4-inch, 6-inch and 8-inch piping, it was a challenge because none of us had used that before,” Dearing said. Hope, who is a certified Aquatherm trainer, and his team, provided the Red Deer Plumbing team with some basic training.

“After a few hours training we felt quite confident in our ability to put the piping together,” Dearing said. Hope added that Dearing’s knowledge and enthusiasm about PP-R helped allay any concerns that the owner and others involved in the project had. “The understanding and excitement that Dearing had helped guide anyone with reservations about the usage of PP-R,” Hope added. Nearly 20,000 Feet

Approximately 18,000 ft of piping was used for the Elements project. Aquatherm Blue Pipe® was used in sizes ranging from 8 in. down to ¾ in. The domestic application of the project used half SDR 7.4 (DHW) Aquatherm Green



Pipe® and the other half was SDR 11 (DCW). Aquatherm SDR 7.4 pipe features a thicker wall which provides increased pressure and temperature ratings for high-stress applications such as hot water recirculation. Aquatherm SDR 11 pipe features a balanced wall thickness

to provide higher flow rates while maintaining high pressures, making it suitable for most applications.

“PVC-DWV was used for the drainage system portion of the project, but Aquatherm valves were used on everything else,” Hope explained.

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Aquatherm offers a variety of valves including screw-down stop globe valves, concealed valves, inclined globe valves, and ball valves. Aquatherm Green and Blue pipes use the same socket fittings and tools, making it easy to install. Additionally, Aquatherm pipes weigh up to 80% less than similarly sized metal pipe, cutting down labour injuries, needed manpower, and labour costs.

Dearing added that everything went smoothly with the installation. “We followed the guidelines to a tee. The timing for making every joint was spot on, and the more joints we made, the more confident we became.”





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Aquatherm 8-in. and 6-in. welding tools were used for welding the pipe. Aquatherm Blue Pipe was also used to connect the Evapco cooling tower and SPX® ABV® heat exchanger. Two 2.7

million BTU Buderus boilers were connected using Aquatherm too.

The project did require some custom fittings. The desired fittings were fabricated and shipped from Aquatherm North American headquarters in Lindon, UT. “The site of the building is off angle, so we had to get some special off-angle fittings made. After testing, everything held air and water that was supposed to, so we were happy with the results,” Dearing explained.

### 20% SAVINGS VS. METAL PIPE

Elements at Rivers Edge was the largest construction project in Red Deer from 2010-2012. The project was completed in May of 2012. The building now houses an insurance company, dental offices, and other medical professionals in the retail space, and the tower



section of the building has eight luxury condos ranging from 2,500 sq ft to 6,000 sq ft.

Dearing, who is also the Elements building manager, estimated that the total savings of the Aquatherm piping was about 20% compared to using black steel and copper piping.

“The quietness of the pipe is a big benefit for the residential part of the project —with water flowing through it, you don’t even hear it. The ease of installation and how quick and clean it is to work with are also major benefits,” Dearing noted. “It’s pretty comparable cost-wise to steel or grooved and clamp, but the non-corrosive nature of the pipe definitely outweighs the cost.”



The German-manufactured pipe has been one of the world’s most durable and greenest piping systems for four decades and proven successful in 70-plus countries. Aquatherm piping systems offer many performance and environmental benefits, such as:

- Eliminating toxic materials, glues and resins, and open flames from the piping installation equation
- An R-value of 1 or more per inch or greater depending on pipe size and SDR
- The fusion welding process, which creates seamless connections that last a lifetime without leaking or failing
- An optional faser-composite layer in the pipe reduces linear expansion of the pipe by up to 75% compared to plastic piping



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