



Cast Iron Rads

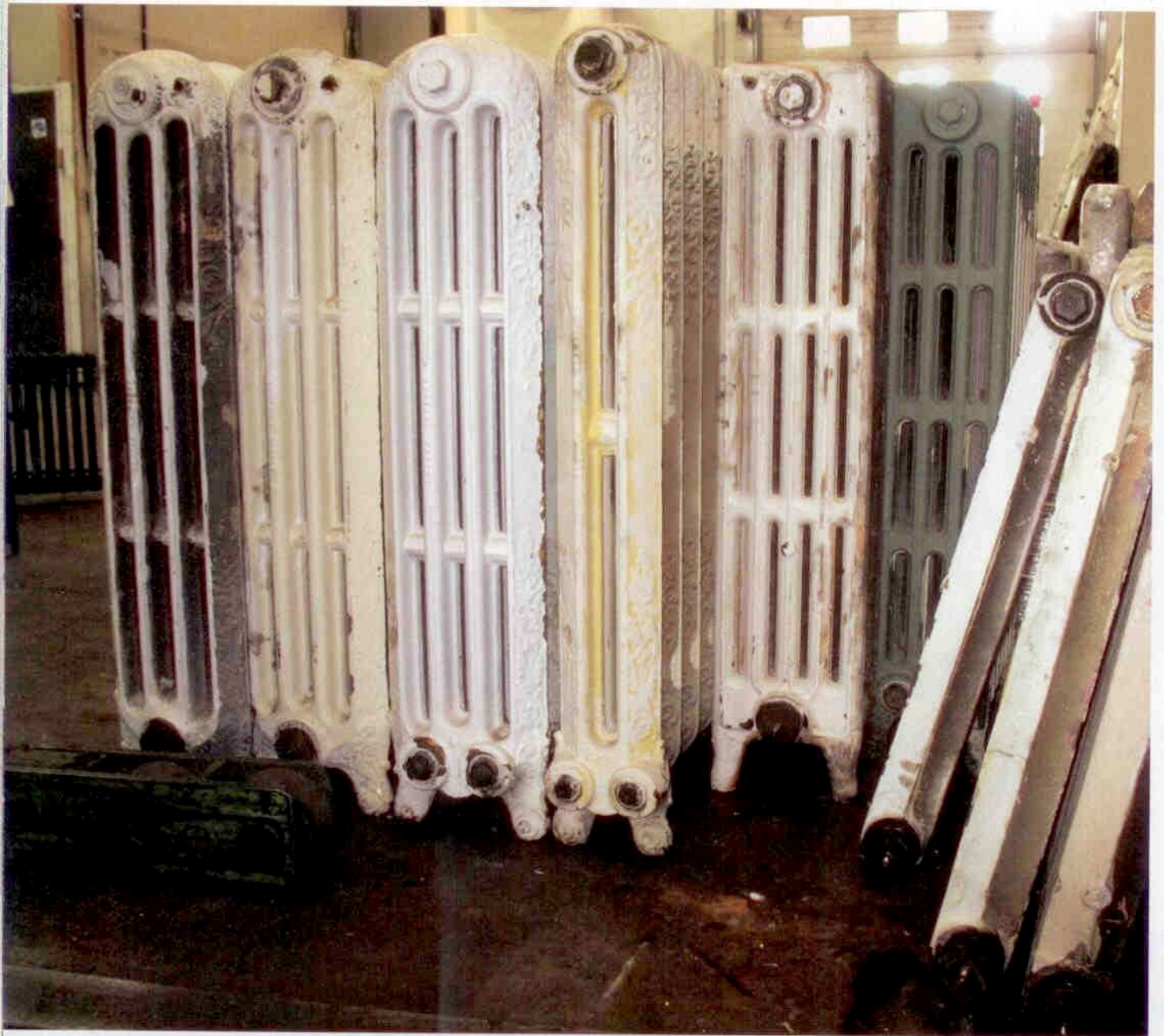
Providing simple, beautiful,
practical heat

Story by Steve Maxwell | Photography by Steve Maxwell and Patricia Cloutier

Good ideas always rise to the top, even if people do forget about them for a while. Hot water heating is a case in point. For a century before the 1950s, hot water heating was rightly seen as the best way to deliver warmth to homes and businesses.

Anyone could feel the superior comfort it delivered, and that's why people paid a premium for it. And though the mad scramble to build houses faster and cheaper in post-war Canada gave convection systems like forced air furnaces and electric baseboard heaters a temporary upper hand, reality is taking over again. These days, hot water heating is making a prominent comeback in the form of radiant in-floor hydronic heating, though this isn't the only way to heat with hot water. It may not even be the best way in every situation.

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CAST-IRON KNOW HOW

You probably won't find books on how to design and install hydronic iron radiators in your local home improvement store, but that doesn't mean that excellent texts aren't out there. One source is www.heatinghelp.com. I've found their titles *Classic Hydronics*, *Hydronic Radiant Heating* and *Pumping Away* to be excellent resources.





WHAT SIZE RADS?

Regardless of where you get your iron rads, heat loss calculations are the only way to accurately determine the size and number of rads you need. Iron rads were produced in different heights during the heyday of the industry about 100 years ago, but regardless of the design, all include various numbers of sections bolted together to form a single unit. Sections can be added or subtracted in different ways to produce rads that deliver wattage outputs sized for the space, while also matching each other in overall width.

If you're having trouble finding someone to accurately calculate the size and number of iron rads you need, experimentation can help. Gather however many electric heaters are required to heat your space comfortably during the coldest weather, then tally up the total wattage required to do the job by trial and error. In Canada a rough rule of thumb for a home built to modern code standards is 1 watt of heating capacity for every cubic foot of room space. Each section of a 20-inch tall rad delivers about 100 watts of heat; you can expect 200 watts of heat from each 38-inch-tall section.

OLD MEETS NEW

Modern technology makes it much easier to install iron rads, and PEX pipe is a case in point. Unlike the major wrestling match involved in cutting, threading and joining traditional rigid steel pipe, PEX is flexible, a breeze to cut and exceptionally easy to join. This is especially useful in retrofit situations. The fastest, most reliable connection method I've used for PEX is called ProPEX. It's proprietary to Uponor, a major manufacturer of PEX pipe and hydronic heating hardware, and is as simple as it gets. Slip the end of an expander tool into the end of the pipe, swell the opening, then immediately slip it over the barbed ProPEX connector. In 30 seconds or so the pipe shrinks down to its former size, gripping tightly to the fitting as it does. When you're settling on a design for your system, always remember that bigger pipes are better because water flows through them more easily. All else being equal, a one-inch pipe flows twice as much water as $\frac{3}{4}$ -inch diameter, and $1\frac{1}{4}$ -inch twice as much again as one-inch.

Most people love the look, feel and comfort of traditional cast iron radiators. Now you can go ahead and enjoy them completely, knowing that they're also an efficient and green heating option. **MC**



OLDER CAN BE BETTER

Cast iron radiators were used for so long, and in so many buildings across North America and Europe that there are literally millions of rads in service today. Renovations, demolitions and ignorance-based 'upgrades' means that hundreds of thousands of these beautiful rads head for the scrap heap each year, even though most are as reliable and effective as they day they came out of the foundry. The work of intercepting these paint-encrusted relics on their way to the smelting furnace is a job taken on by a handful of radiator restoration companies. Google 'cast iron rads' and you'll find them.

It's rare to find cast iron hot water radiators that aren't coated in ugly paint, and removing it offers two advantages. While old, crusty coatings hide beauty, they also hold back heat. Bare or minimally-coated iron rads transfer about 10 per cent more heat to the room, all else being equal. This is why sandblasting is the industry standard for stripping iron rads, though it's not the best option. While sand blasting does remove paint, it also dulls the floral and decorative details that make ornate rads so beautiful. This is why the best rads are refurbished with a gentler system of stripping that respects original surface designs and textures.