



**BlueRidge**  
Company™

RADIANT HEAT SYSTEMS

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## Case Study

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New York Heating  
System Retrofit

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# 1-Zone Electric Boiler Radiant System

- Retrofit Heating Project
- Crawl Space/Staple-up Install
- Self-Installed Radiant System

- PEX stapled-up under joists with aluminum heat transfer plates
- 5-port RHT SS High Flow Stainless Steel manifold
- 8 kW Thermolec 27,000 BTU/hr modulating Electric Boiler
- 1-Pump RHT Prefabricated Electric Boiler Pump Panel
- System is controlled by a Tekmar 518 Thermostat

***“They listened to what I wanted and made sure I’d be happy with the system. It was a great experience from start to finish.”***





**W**hen Les H. set out to upgrade the heating system in his Perth, New York home, his goal was simple: find a system that would be low-maintenance, efficient, and cost-effective—one that wouldn't require daily effort as he approached 70.

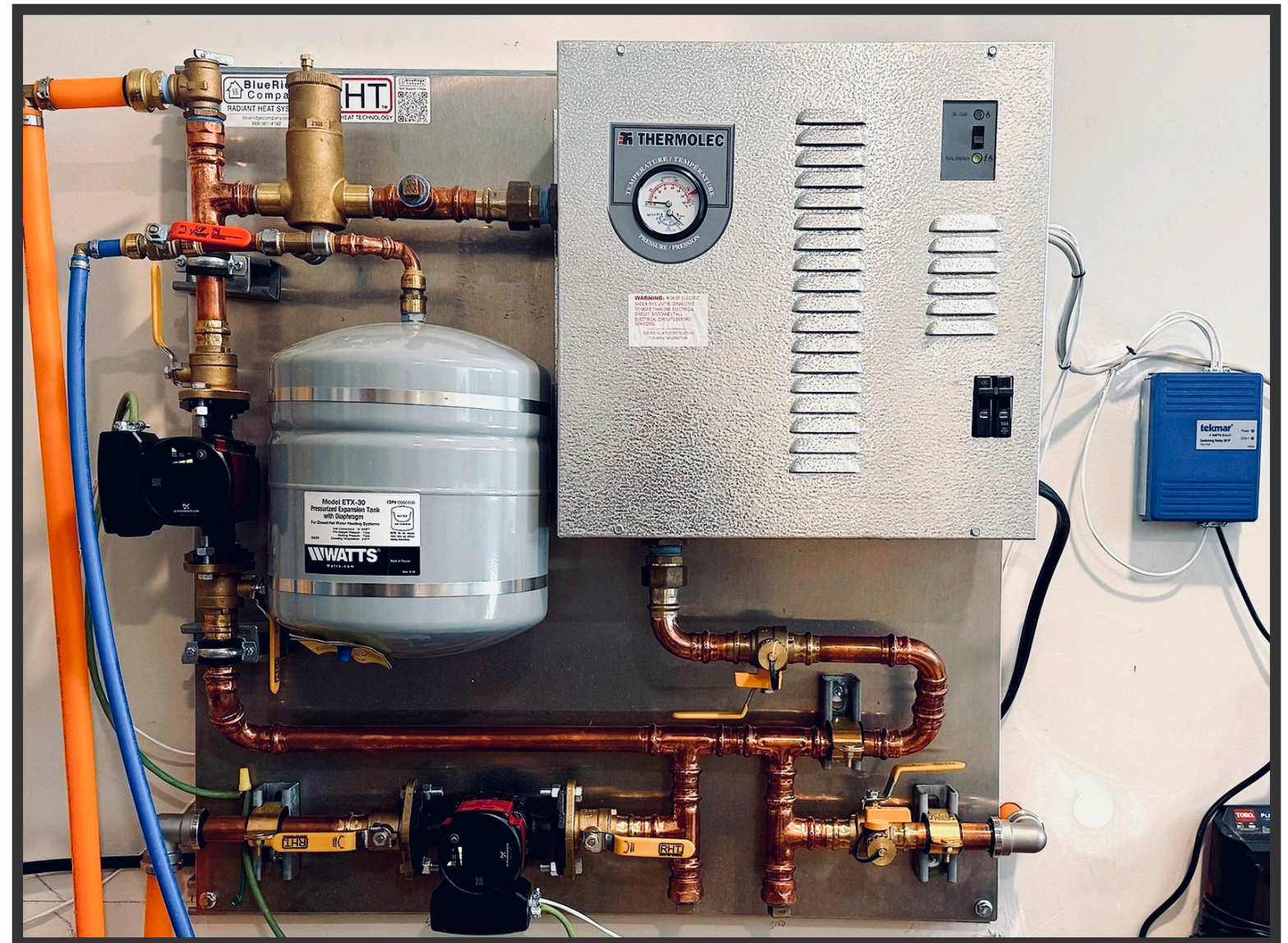
His 975-square-foot ranch-style home, built largely by Les himself in 2021, was originally heated by a 90,000 BTU coal stove. A 27,000 BTU mini-split system served as a backup, but neither solution was ideal. Coal was messy, labor-intensive, and required constant attention. The mini-split was costly to operate in the harsh Northeast winters.

“I wanted an all-electric hot water radiant heat system for my home,” Les explained. “I wanted something that would be simple and cost-effective but also something I could manage myself as I got older.”

Initially, Les planned to install baseboard hot water heating using a Thermolec electric boiler, but after comparing costs, he realized radiant heating with PEX tubing would offer better performance for about the same price. The thought of no radiators to clean, no awkward room layouts, and no temperature swings between heating cycles made the decision clear.

**A**n online search for Thermolec products led Les to BlueRidge Company, where he found not only the boiler he needed but also prefabricated distribution panels, multi-port manifolds, and fill kits—all designed to simplify installation for homeowners.

“I was already planning to hire a contractor to help with the design and install,” Les said.



***Les H's radiant system in his home in Perth, New York. After deciding against a baseboard radiant system, Les installed a “staple-up” system that is powered by a fully modulating 8 kW Thermolec Electric Boiler that can produce 27,000 BTU/hr. The panel came prefabricated and ready to install in his mechanical room.***

“But when I saw the components BlueRidge offered, I realized I could do most of the work myself. That really appealed to me.”

After reviewing his system design one last time, he changed his mind and decided to go with radiant floor heating instead. Since the boiler and distribution panel would work for both setups, the change was easy to make.

**W**hen the prefabricated system arrived, Les was immediately impressed. “It was beautiful... a work of art really. Compact, logical, and easy to access.”

Installing the boiler, manifold, and distribution panel was straightforward. The most challenging part was managing the 1,500 feet of PEX tubing under the floor joists.



“It’s exhausting and frustrating to work with unless you have experience—and help. But I wanted the challenge.” The system was carefully designed with five PEX loops, each between 250’ and 295’, ensuring even heat distribution throughout his home.

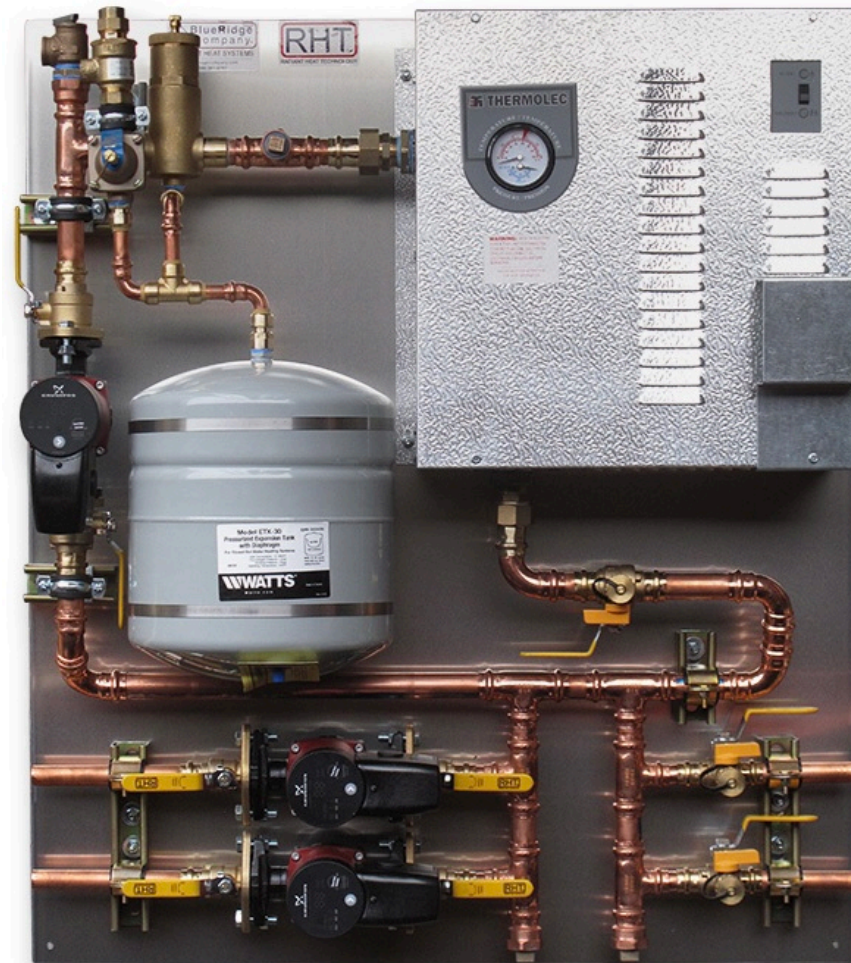
**L**es handled most of the electrical work himself, with help from his neighbor who installed the 50-amp breaker and wired the system to his home’s panel. For technical support, Les regularly contacted BlueRidge’s tech support team for guidance.

“They were always there when I needed them,” he said. “They never rushed me and always made sure I fully understood the next steps before I moved on.”

**W**hen it came time to start the system, the process was smooth and fast. During a summer test run the boiler easily brought the system up to 100°F, with the return water at 93°F.

Les won’t know the full cost savings until he completes a full winter season, but his calculations suggest his radiant system will cost no more than his previous coal expenses, and significantly less than operating the mini-split system during transitional months.

“They listened to what I wanted and made sure I’d be happy with the system,” Les said. “It was a great experience from start to finish. I’m confident this system is going to be a great solution for me.”



***Les used BlueRidge Company’s RHT Prefabricated Electric Boiler Pump Panel for his radiant system. Our 2-pump version is shown above.***



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**NTI**

**RHT**  
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