When Brian Lawrence, the owner of “The Beacon,” a 62,000 sq ft commercial building in Manchester New Hampshire experienced a leaking boiler in the basement, he contacted Arthur Harisades and Bob McQue of F.W. Webb in Nashua. The building is located on the main street in downtown Manchester, the state’s largest city, and houses a mix of commercial businesses and retail shops with a central enclosed four-story atrium.

Webb, together with Buderus regional sales manager Aaron Soule, recommended replacing the leaking old boiler with a high-efficiency Buderus GB162 TR-6 cascade in back-to-back configuration delivering a total of 1.77 MBH.

Project Goals:
- Improve energy efficiency
- Replace leaking old boiler
- Utilize existing floor space effectively
- Supply 82F water to water source heat pumps

Background
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GB162 Cascade Replaces Old Boiler
In New Hampshire Commercial Building

Installation Summary
Installer Rick Coughlin from Coughlin Plumbing and Heating removed the old boiler and installed the Buderus six-unit cascade within the same footprint.

Master Electrician Norton Phelps ran electrical cabling and mounted two MCM10 commercial controls which can handle up to 8 GB162 boilers and provide the flexibility to operate the cascade in either series or parallel mode. Tim Lord of Control Technologies (Woburn, Massachusetts) tied the GB162 boiler system into the building’s existing control system. A cooling tower circulates 82F water to about 85 water source heat pumps providing heating and cooling throughout the building. This is a significantly lower temperature than 180F water typically supplied in traditional hydronic systems.
For a multi-boiler system, Buderus offers in-line and back-to-back cascade packages. All the necessary fittings and accessories allow the installer to simply assemble the framework and join everything together. Once the boilers are mounted on the framework, they are connected with the factory-supplied low-loss header and then covered with pipe insulation. The result is an easy installation where everything fits well, piping is neat, and the boilers are ready to be connected to the main heating system. The combination of the low-loss header and EMS control system ensures worry-free boiler flow rates.

Summary and Conclusion
Building owner Brian Lawrence explained “We had to run the old boiler at full capacity to maintain building water temperature. However with the new Buderus cascade boilers, once the basement storage tank is brought up to 80F water, the boilers can run only when needed to keep the water at design temperature, so we anticipate significant energy savings.”

The units were commissioned for operation this summer and Brian is looking forward to reduced energy consumption and reliable heat for his tenants.