steam systems

70% of New York City’s large buildings use steam systems to generate heat.¹

Steam heat utilizes energy, generally produced by burning greenhouse gas-emitting fossil fuels, to produce steam distributed through a building to heat occupant spaces.

Many steam heated buildings suffer from loud, clanging pipes, leaky radiators, and simultaneous under- and overheating of occupant spaces. These common problems not only waste energy and cause discomfort, but also drive up utility and maintenance costs.

Fortunately, with proper maintenance and a few simple upgrades, steam heating systems can provide reliable and balanced heat more efficiently. Before making a comprehensive steam upgrade, building owners should consider local greenhouse gas reduction mandates and explore the opportunity to convert to high efficiency electric-powered systems.

One City Built to Last: Technical Working Group Report, NYC Mayor’s Office of Sustainability (MOS), 2016, pp. 36-37.

One and two-pipe steam systems are the most common types of heating in New York City. Although the two systems are very similar, piping designed for steam condensate requires different retrofit strategies and maintenance practices.

One-pipe
One-pipe steam systems use a single pipe to supply steam to each radiator and drain away condensate.

Optimizing one-pipe systems includes properly sizing vents to help steam travel evenly through the system and installing adjustable thermostatic radiator valves (TRVs) to regulate heat output at radiators.

two-pipe
Two-pipe steam systems have two separate pipes at each radiator—one that supplies steam and another that drains condensate.

Optimizing two-pipe systems includes properly sizing vents to help steam travel evenly through the system, installing orifice plates and TRVs to regulate heat output, and maintaining steam traps on pipes mains to ensure water and steam do not mix.

¹ One City Built to Last: Technical Working Group Report, NYC Mayor’s Office of Sustainability (MOS), 2016, pp. 36-37.