

What is a room heat pump?

A room heat pump is a type of Air Source Heat Pump (ASHP), a high-efficiency electric appliance that provides heating and air conditioning. The components are modular, allowing a unit in each room. Occupants can adjust the temperature using controls in each room.



What are benefits of heat pumps?

Heat pumps do not consume fossil fuels, so they are better for the environment. They are better for building heating and cooling because:

- They do not emit combustion gases and particles into the air, which means less pollution and fewer greenhouse gas emissions, which help buildings meet NYC's ambitious climate goals.
- They do not require equipment in the basement, so they are not subject to flooding.
- With a thermostat in each room, occupants can adjust comfort in occupied spaces.
- They provide cooling, which is increasingly important to protect residents from increasing heat and heat waves, and eliminate the use of leaky, low efficiency window units.
- They are three times as efficient as electric resistance systems.

Where/how are units located?

Room heat pumps are usually mounted on the wall, with one in each habitable room. Packaged terminal heat pumps (PTHPs) are 16 inches high by 42 inches wide and are typically located in a sleeve below a window. They are flush with the exterior wall. They frequently replace existing cooling-only air conditioners of the same size. Another type of room heat pump is a wall-mounted interior unit, which uses smaller hole penetrations to the outdoors. In the future, window mounted heat pumps are anticipated.

What type of maintenance is needed?

Room heat pumps have washable filters that should be washed periodically. The heat exchangers should be checked periodically to ensure they are free from dirt and dust. Every few years it is important to have a service person clean the condensate pan in each unit.

Will I need to update my electrical service to the building to install heat pumps?

If an existing electrical service is barely big enough, and/or if the building is being fully electrified (space heating, hot water heating, cook stoves), the chances are good that the service to the building will need to be upgraded. In other cases, where the electrical service is already more than adequate, no upgrade is needed. This question is typically answered in discussions with ConEd.



Will I need to update electric panels in apartments to install heat pumps?

It depends on the size of the existing electric panels, existing electric loads, and proposed new electrification loads. It also depends on how the heat pumps are proposed to be wired: If wired to the electric panel in each apartment, panel upgrades are more possibly needed. If wired to house panels that are typically in the basement, apartment panel upgrade are less likely to be needed.

What are the different heat pumps that the Pilot supports?

- Room heat pumps that are covered in this FAQ
- Split heat pumps, covered in "[What is a Heat Pump?](#)" FAQ
- Ground source heat pumps

Do I need backup heat for the heat pump?

Some people choose to keep the fossil fuel system as a backup or to use electric resistance backup heat. This is a building-by-building choice. Many people choose not to use a backup. The heat pumps provide adequate heat if correctly chosen and sized, even in cold climates. The Pilot does not allow electric resistance heat within heat pumps for backup.



Is tenant-paid heating allowed for HPD projects?

The answer is yes - under certain circumstances. Tenants can pay for heating if rent is reduced to account for heating costs. HPD has developed a utility allowance for this situation, but currently we can only implement tenant-paid heating where rents are being restructured and on projects not serving highly vulnerable populations. In addition, HPD requires the owner to take additional steps to ensure tenants are protected from high heating costs or utility shut-offs for non-payment of bills. More details on these issues is provided in the FAQs titled "Heat Pump Billing-101" and "Metering Heat Pumps for Multifamily Buildings."

If there is a power outage, will the heat pumps stop working?

Yes. There will be no heat if there is a power outage. However, note that most fossil fuel heating systems also rely on electric power and will not operate during an outage. If the equipment breaks down, most repair work happens outdoors on the outdoor unit. Room heat pumps are easy to service or replace and only affect one room.

How much money will a building save in energy costs?

Although heat pumps consume less energy than systems that use natural gas, fuel oil, or electric resistance heat, utility cost savings are currently high for higher-cost heating fuels, such as oil, due to the current cost of electricity in NYC. This is why the Pilot is prioritizing systems currently using oil, and ensuring that building envelope upgrades are part of the project scope. The Pilot also requires building staff and tenant education - to ensure that systems are run as efficiently as possible and to ensure that residents (in tenant-paid electricity situations) are aware of programs like HEAP and ConEd's Level Billing Plan.

What are other considerations?

Units require condensate to be removed, either by connecting condensate lines into the building plumbing system or outdoors, either by gravity or with pumps. Visibility can be an important consideration in landmarked areas. The aesthetics of these units are important, in locating the units, and also in routing wiring and condensate piping. Units should, preferably, not be located on walls above beds, sofas, or desks, to avoid cool air in summer blowing over residents. Furniture and curtains should also not block the units.

Licensed design professionals should be chosen for design and necessary inspections/filings. Quality in installations is important, with attention directed to details such as commissioning (making sure controls are working correctly). Finally, if the heating is paid for by the owner, now the cooling is also paid for by the owner where it might have been paid for by the tenant previously, so an associated adjustment may be necessary. One approach is to wire the units so that the owner pays for electricity in winter and the tenant pays for electricity in the summer.

If you want to learn more, contact electrificationpilot@hpd.nyc.gov