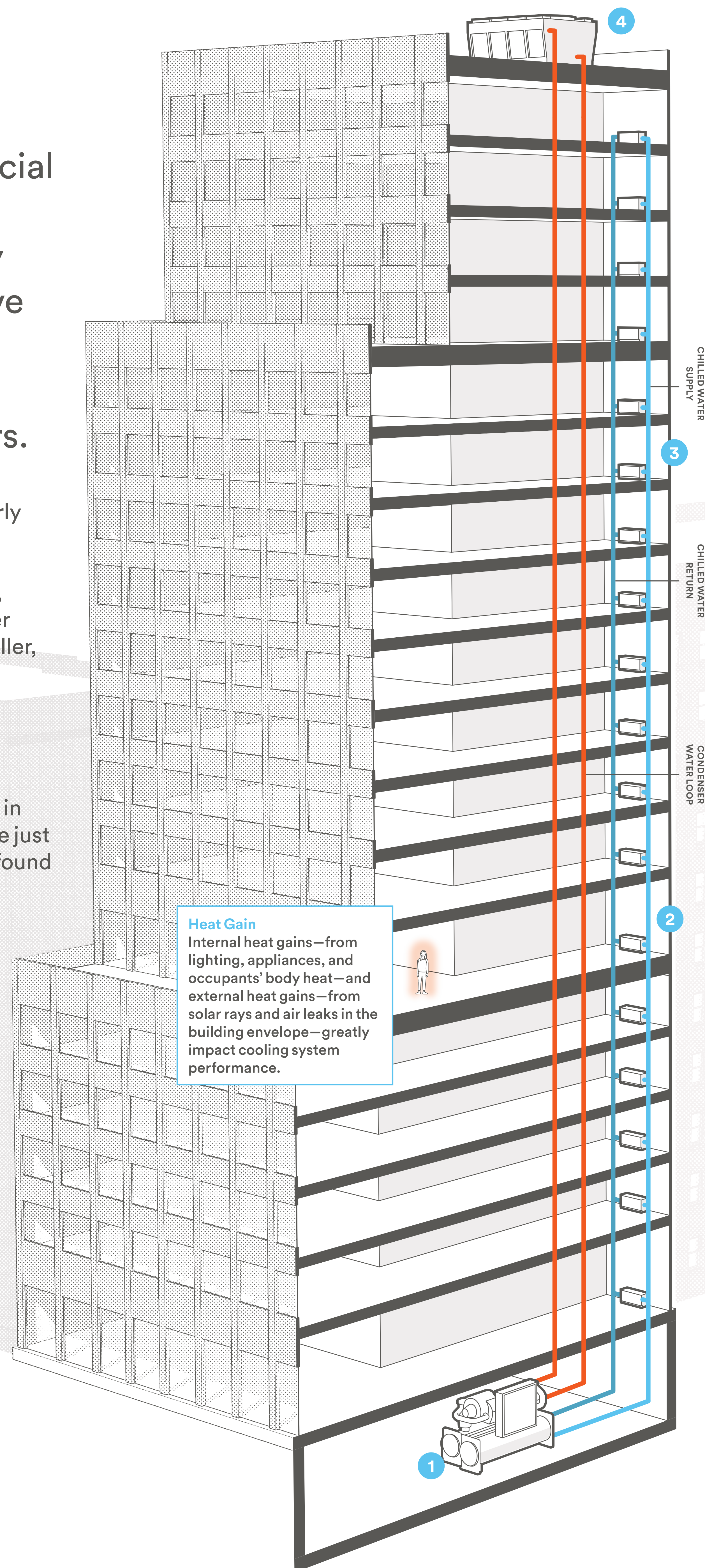


centralized cooling

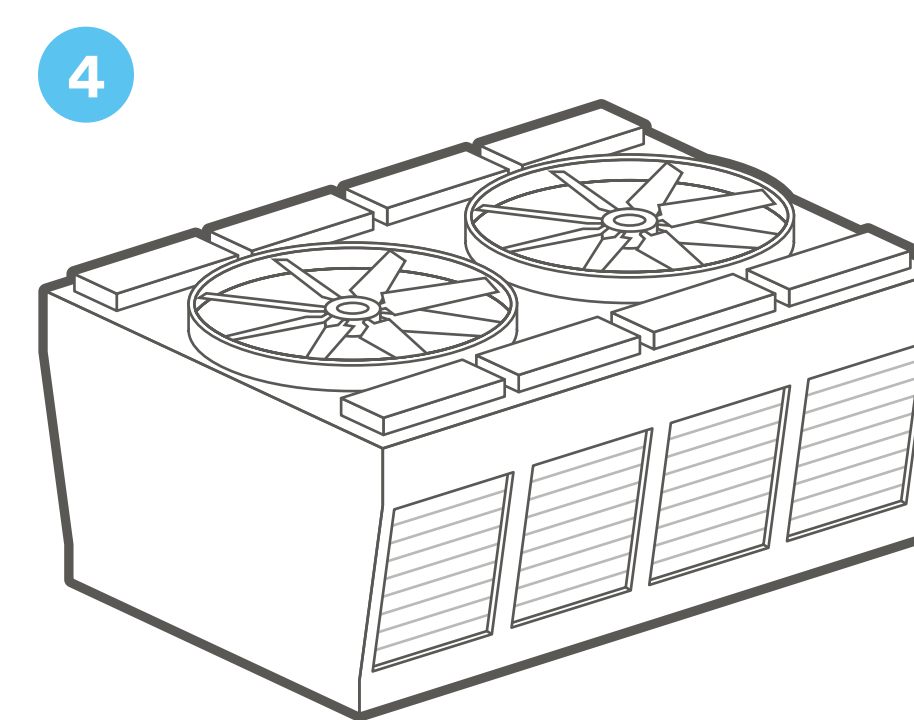
In New York City, centralized cooling systems are typically found in large commercial buildings as well as some large multifamily buildings, and can serve an entire building or a large tenant space covering multiple floors.

Centralized cooling works particularly well for buildings with high cooling needs and predictable occupancy patterns. Due to economies of scale, centralized cooling systems can offer significant efficiency gains over smaller, decentralized systems, and provide a higher level of control over cooling delivery and thermal comfort.

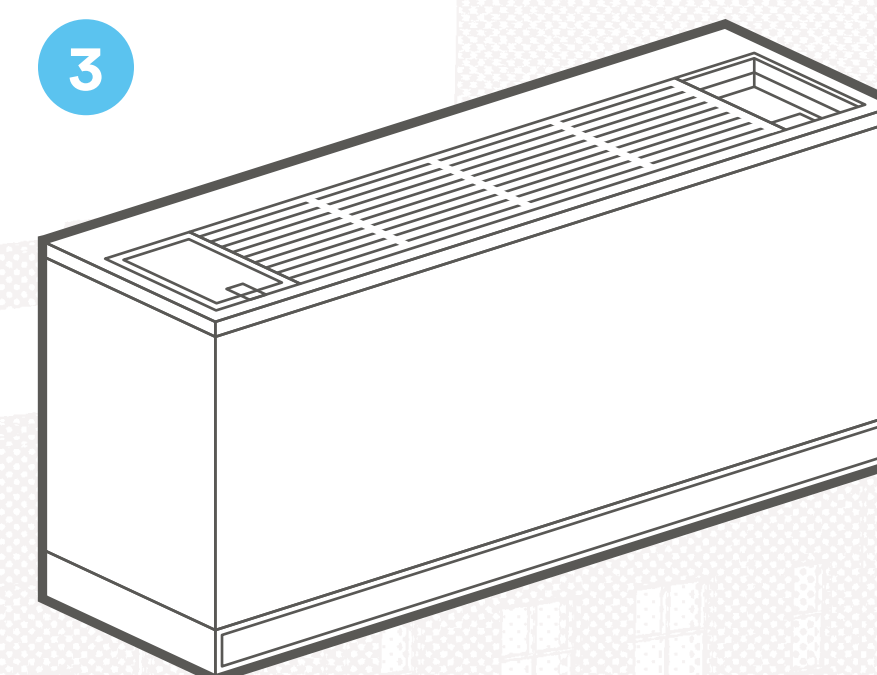
Chilled water systems are the most common type of centralized cooling in New York City buildings, but they are just one of many different system types found across the five boroughs.



Heat Gain
Internal heat gains—from lighting, appliances, and occupants' body heat—and external heat gains—from solar rays and air leaks in the building envelope—greatly impact cooling system performance.

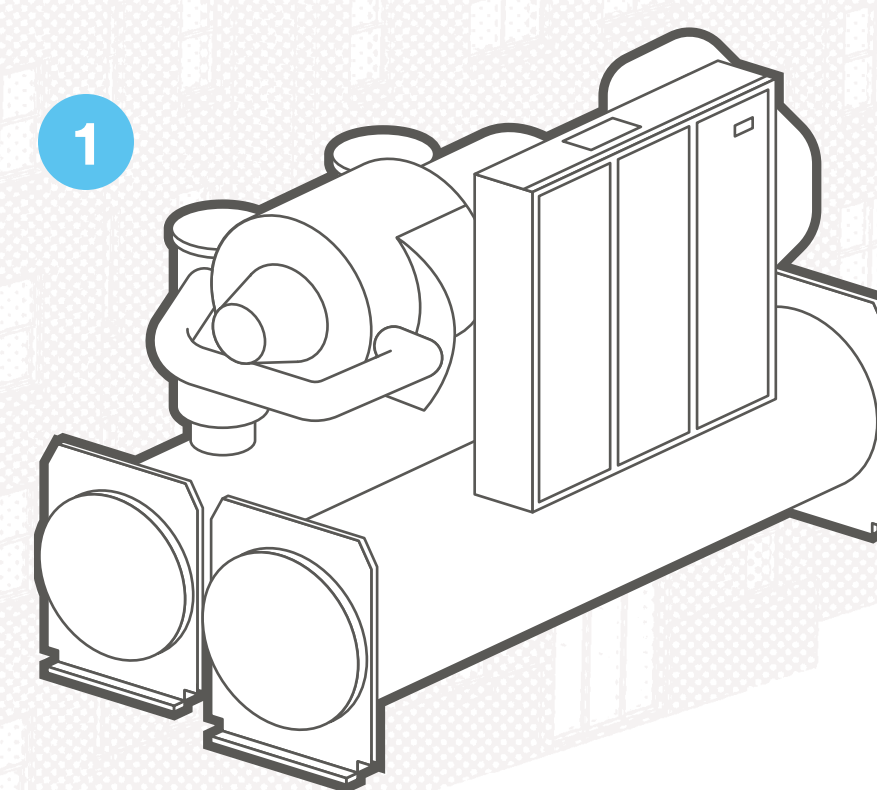


Cooling Tower
Air-cooled or water-cooled units (shown here), typically located on a building's roof, exhaust the heat produced as a byproduct of a chiller's refrigerant cycle.



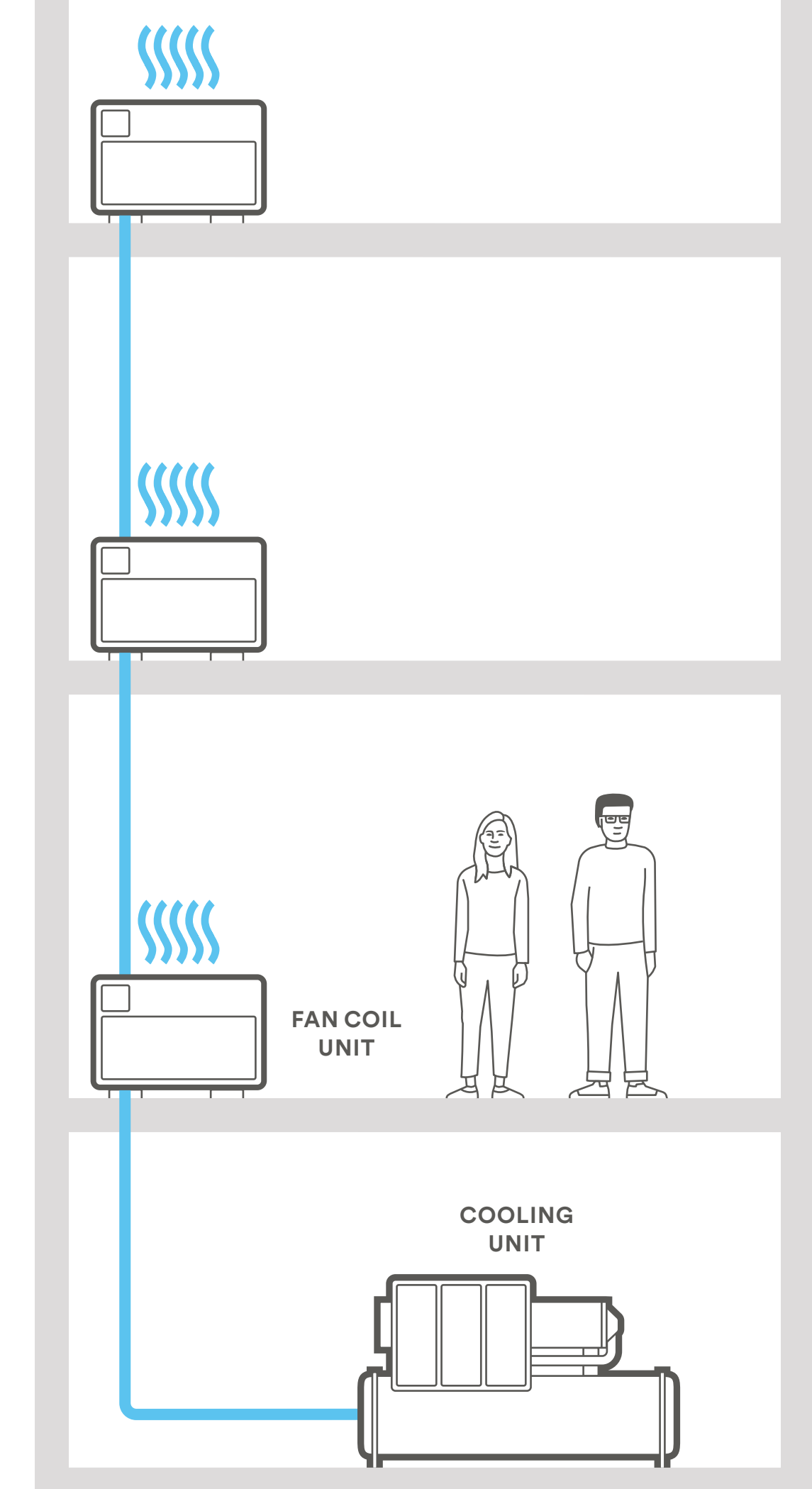
Terminal Unit
Fan-coil or air-handling units deliver cooling to occupant spaces.

Supply Pipes
Chilled water plants are often paired with hydronic heating systems that use the same distribution piping and terminal units.



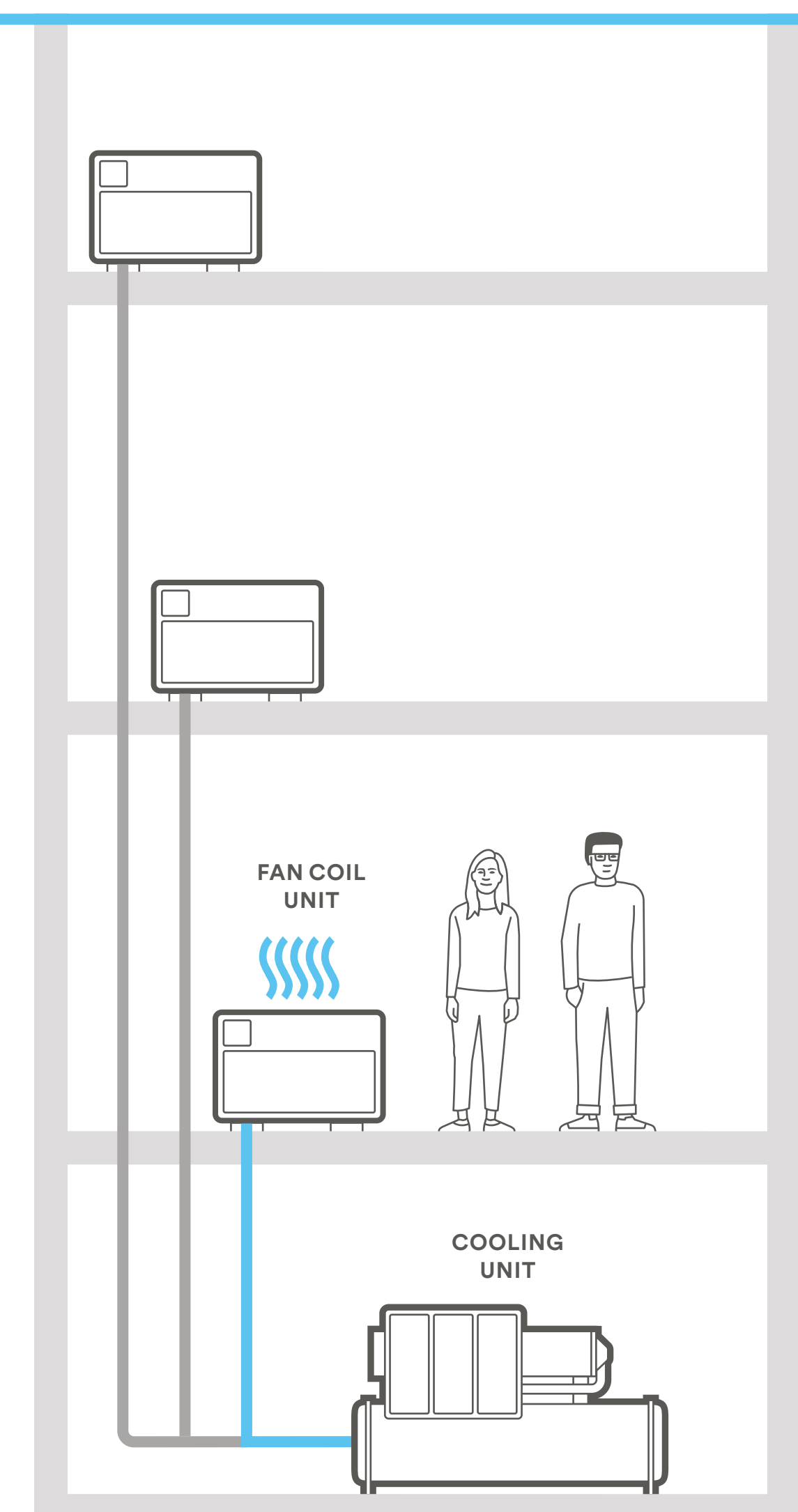
Cooling Unit
Centralized cooling systems typically use chilled water or air as a cooling medium. In the chilled water systems common in New York City, water is cooled by a central chiller, then pumped through the building to air-handling or fan-coil units that cool occupant spaces.

single-zone vs. multi-zone



single-zone systems

Some centralized systems operate on a single zone, designed to cool an entire building to one designated temperature set-point. When a building is partially occupied, single-zone systems waste significant energy cooling unoccupied spaces.



multi-zone systems

Multi-zone systems cool different areas of the building independently. With a building management system, multi-zoned buildings can cool one zone while heating or turning cooling off in another, resulting in considerable energy savings and improved occupant comfort.