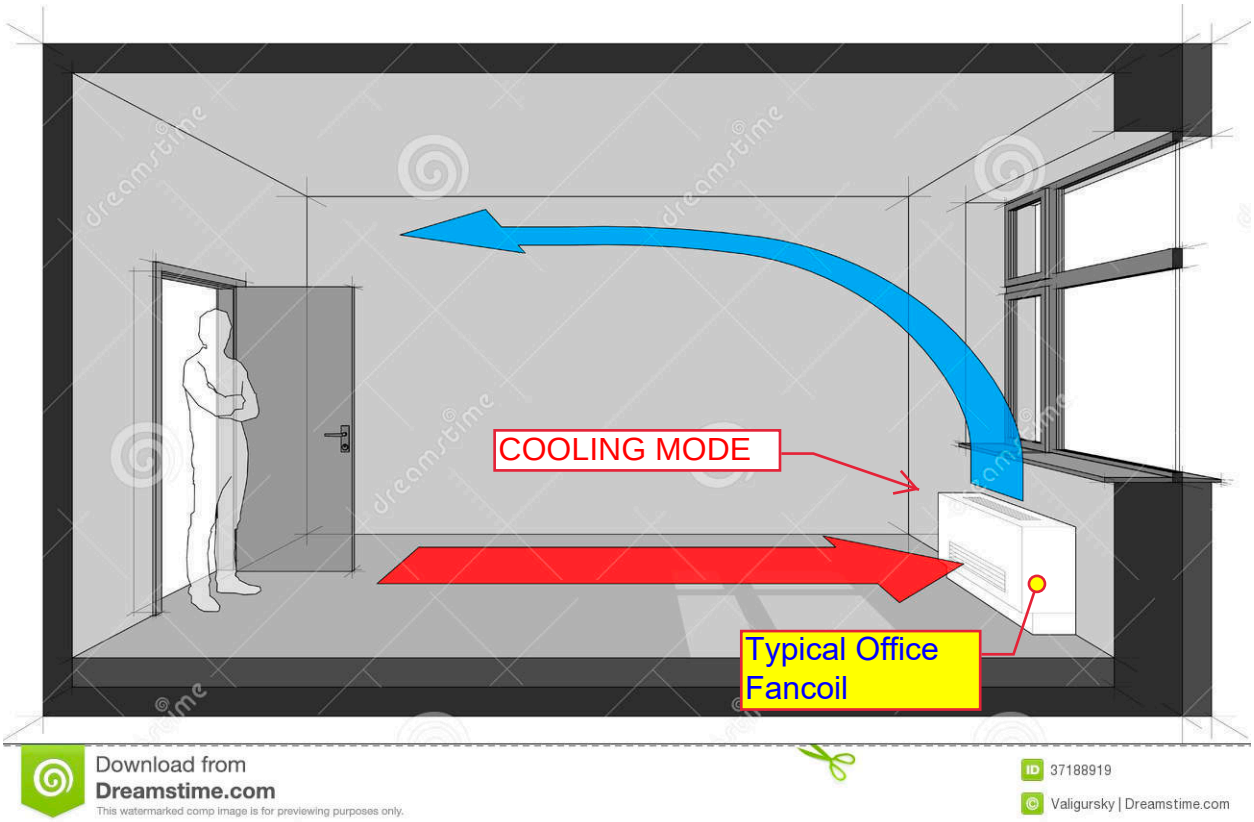
HEATING AND COOLING



We are not as fortunate as buildings that have a dual temperature climate control system. Here at The Science Center we operate a seasonal change over system. This is one reason that we can experience such temperature swings within the building, most prevalent with large outside temperature swings i.e. 60 degrees on Monday then 22 degrees and snowing on the following day (New England).

During the year, we only have the ability to run Hot or Cold water to provide climate control and not simultaneously. There comes a time during the spring, commonly late April, when we will make the decision to switch over to Cooling and run Chilled Water through the system. Then in late October, we will need to make the switch over to run Heating Hot Water through the system.

This requires a mechanical change, which consists of a manual system change to shut down the production and delivery of either Hot Water or Chilled Water to the office fan coils and air handler units. It takes more than a day to valve over the entire building. Space temperature issues can happen when after making this change from heating to cooling, as the days become warmer, we may experience a 70-degree day followed by a 30-degree night. Since we have already changed the system over to cooling, we are then unable to provide heating in most locations. We experience the opposite affect at the end of fall when we change from cooling to heating and we experience a day with a 35-degree high temp followed by a 65-70 degree day.

Another possible reason for unstable room temperatures can be due to the use of an electric space heater. In doing so, you are actually tricking the room thermostat to detect a higher room temperature. As a result, the heating valve will remain closed and the fan will pick up the cold air from the outside wall and continue to blow it around cooling the space. For spaces that we do have the ability to heat and cool year round this affect is even more drastic as the chilled water valve could open to cool the room even more.

SCIENCE CENTER BUILDING OPERATIONS

In general, the way the typical SC office climate control works in the winter, it starts with a programed max and min room temperature set point (typically 68-72 degrees in the winter and 72-75 in the summer). As the system calls to warm the room to the max set point, a hot water valve will open within your office unit. This will allow the building pumps to send hot water to the Fan Coil Unit. When the office reaches the temperature set point, the heating valve will close and your fan will stop until the room temperature reaches a low temperature set point (typically 68-70 degrees in the winter and that will signal the heating valve to re-open.

Since the current valve is only open or closed, it closes often. Our intent over time is to change out your heating valve for a valve that will modulate from 0 to 100%. The expectation is that the heating valve will rarely fully close. Therefore, you should get hot air when needed and warm air to maintain the room temperature set point.

Mark Pimentel

Science Center
Facilities and Operations Manager
Harvard University
Science Center
1 Oxford Street
Cambridge, MA 02138
CELL-617-519-0674