Hillcrest Hall HVAC System Operation

Building Equipment-

A steam converter makes hot water for baseboard heating. An ERV (Energy Recovery Ventilator) brings 100% fresh air into the building while exhausting stale air. Geothermal heat pumps are used to cool 4 spaces in the building, (the Orchard room 103, Offices 109, 111, and 120). Motion sensors are used as a means of energy savings to determine occupancy in spaces and user interaction is required to get cooling to spaces that have cooling capability.

Heating is enabled when outdoor temperatures are less than 55 degrees. If outdoor temps stay below 65 for a day or so, the heat will also be enabled until they rise above 65 degrees, at which point the heat shuts off. Cooling is enabled when outside air temperatures are above 65 degrees.

Zones-

Each space that has a thermostat is considered a zone and will maintain the room set point accordingly. The exception is The Orchard room 103, it has two thermostats which average the space temperature and use that average for heating/cooling.

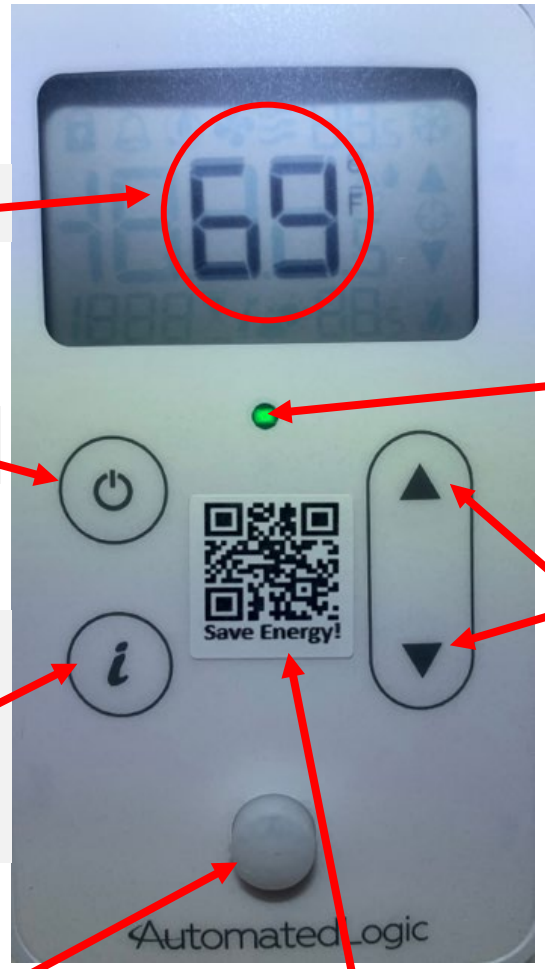
General Concept-

Upon entering a space, the motion sensor will detect motion and put the space into an occupancy mode. The green LED will then be lit on the room thermostat. The space will remain in an occupied mode for 30 minutes after the last motion is sensed, then revert to an unoccupied mode. Once in occupancy mode, the system will adjust the room temperature set points from unoccupied set points (65 degrees for heating and 85 degrees for cooling), to occupied set points (70 degrees for heating and 77 degrees for cooling). Users can adjust their thermostat 2 degrees above or below the default occupied set points. All office zones will “remember” where the occupied set points were last left and stay there except for common spaces and classrooms which will revert the occupied set point values to default (70 & 77) upon a transition to unoccupied mode. Motion sensors will be disabled through the night from between 9 PM and 6 AM. If using a space between that time, use the thermostat occupancy button to put the space into occupied mode.

Occupancy/space temps-

Once motion is detected, the room will be in occupied mode, the room’s setpoint will increase and the heating valves will respond accordingly. Baseboard heating warms a room a little slower than a fan-based heating system, so it may take a bit of time for the room temperature to rise to your occupied set point. A viable strategy could be to place your room into an occupied mode for a length of time by using the push buttons. If you run out to class or a meeting, your room will stay in an occupied mode for the length of time that you set it for. This will easily allow the space to heat to a desired temperature.

Components of a thermostat



Room Temperature

Occupancy Light

Occupancy Button

Occupied Set point Adjustment

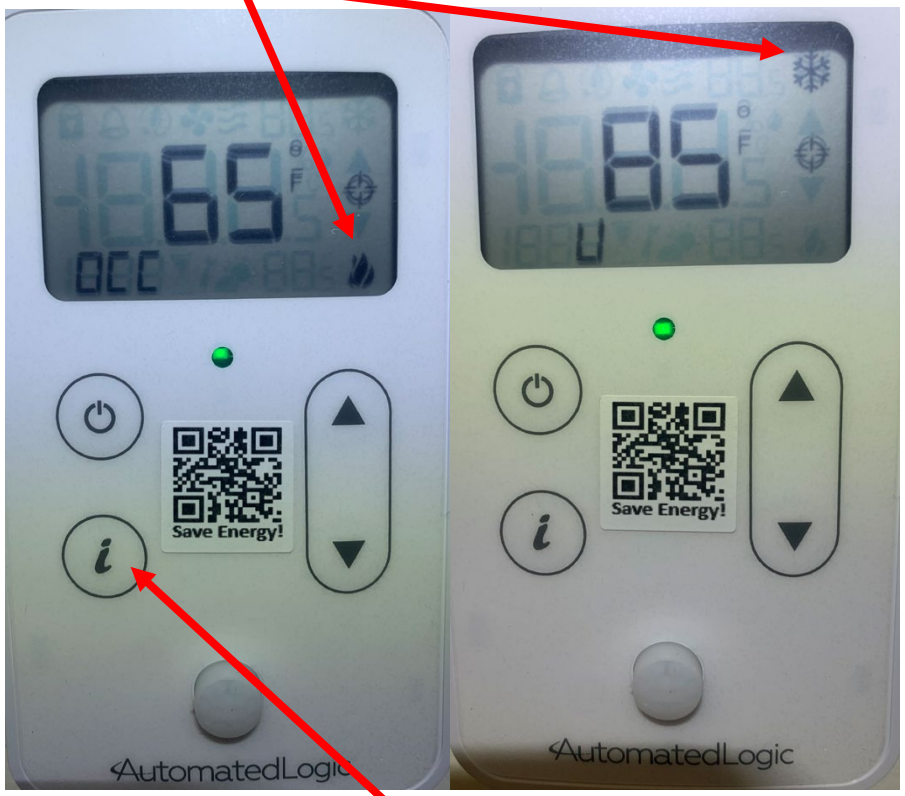
Information button scrolls through unoccupied set points

Motion sensor

QR Code where you can find this information on Facilities Website

Unoccupied set points

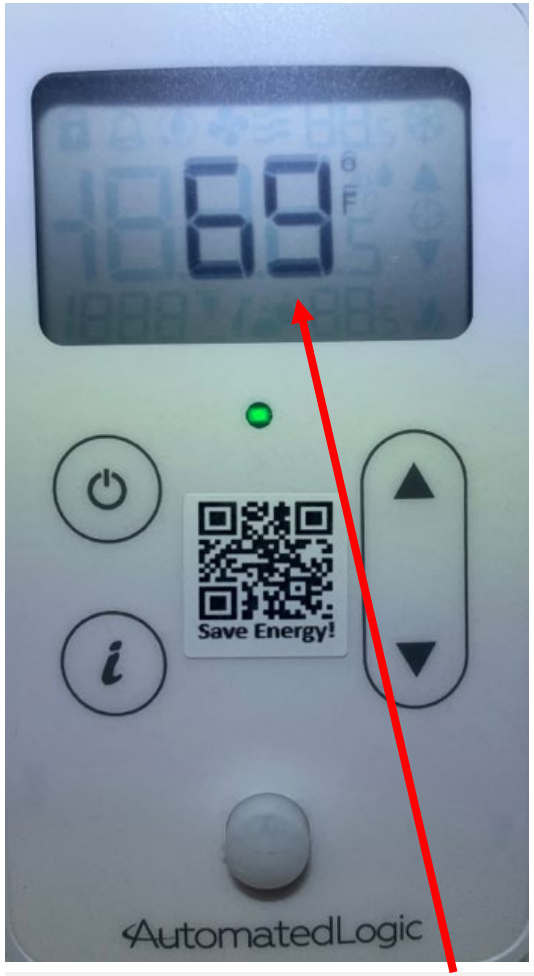
The heating set point will show the flame, the cooling set point will show a snowflake. (NOTE: Only 4 rooms have cooling capability)



Push the information button to scroll through unoccupied set points.

Adjusting room set points

You can move your set point 2 degrees above/below the default of 70. Notice it was moved 1 degree below the set point and is now 69 degrees.

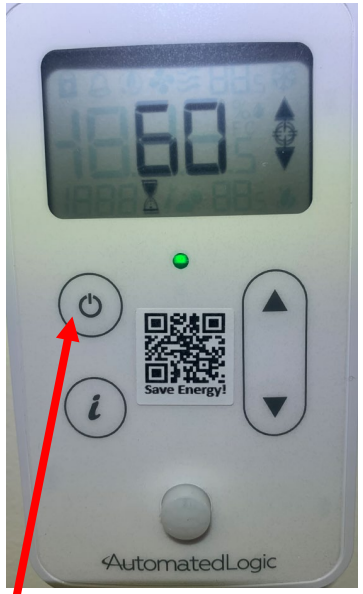


What your thermostat may look like when entering your space. Green LED indicates an occupancy mode, and it is showing the current room temperature.

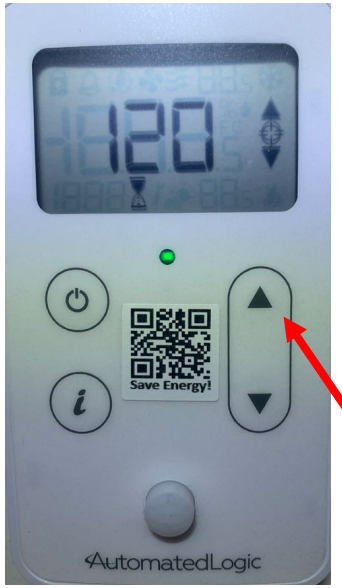
To adjust the set point for your space, first push the up or down button once. The current set point will be shown. Flame indicates heating and its set for 68 with a zero-degree offset.

If the motion sensor for a space is broken or disabled at night, you can manually place a room in occupied mode.

(Another good use, is if you come to your office and need to run to a meeting or a class but plan on being in your office later in the day, you can keep the room in occupied mode, allowing it to come to temperature before your return.)

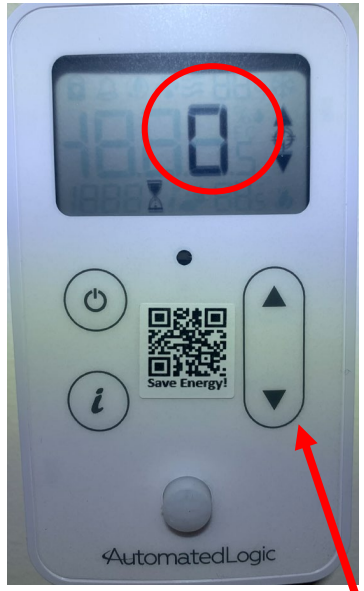


If the green light does not come on when you enter your office, or you want to ensure that the room stays occupied, push this button once. The green light will turn on and a time of 60 will show on the screen.



If you want more time than 60 minutes, push the up arrow. You can have a total of 180 minutes of occupied time.

Do not push any more buttons and the room temperature will show again along with how many minutes you will have left for occupancy mode.



If you made a mistake and don't need that much time, simply push the down arrow until the display reads 0. The room will then time out from the lack of motion.

Turning on cooling for The Orchard room 103, Offices 109, 111, and 120

Default cooling set point (77) that you would see with one push of the down arrow.

You must press the down arrow twice to reduce the set point to at least negative 1 for a few seconds.

Once the screen reverts to showing the room temperature, you may then raise the cooling set point to a higher value if desired by pushing the up button. The room will revert to normal with no cooling after 30 minutes of no motion. If that happens, the sequence will need to be repeated.