



2010

# Temperature Policy

Bentley University

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# Table of Contents

- Overview ..... 4
- Applicability..... 4
- Academic and Administrative Buildings..... 4
  - Seasonal Changes..... 4
  - Heating Season ..... 4
    - Unoccupied Hours..... 5
    - Building Entrance and Hallway Areas ..... 5
    - Supplemental Heaters..... 5
  - Cooling Season ..... 5
    - Heat Waves ..... 6
    - Unoccupied Hours..... 6
    - Summer Hours ..... 6
    - Building Entrance and Hallway Areas ..... 6
- Residence Halls ..... 6
  - Medical Conditions ..... 6
  - Seasonal Changes..... 7
  - Heating Season ..... 7
    - Duty Cycling ..... 8
    - Unoccupied Hours..... 8
    - Building Entrance and Hallway Areas ..... 8
    - Supplemental Heaters..... 8
  - Cooling Season ..... 8
    - Duty Cycling ..... 9
    - Unoccupied Hours..... 9
    - Building Entrance and Hallway Areas ..... 9
- Cooling Policy for External Groups ..... 9
- Residence Halls: Heating and Cooling Systems..... 10
  - Orchard North and South ..... 10
  - Tree Dorms, Slade Hall, Rhodes Hall, Cape House, Castle House and Stratton House ..... 11

Falcone Apartments..... 11  
Copley Suites..... 11  
Fenway Hall..... 12  
North Campus Apartments (ABCD) Collins Hall, and the Boylston Apartments..... 12  
RESIDENCE HALL SUMMER SCHEDULE REQUEST FORM ..... 14

## Overview

Bentley University operates several types of heating and cooling system for its campus buildings which are upgraded on a continuous basis. As such, this policy has been created to communicate the expectations and local controls, where available, of these systems to all community members. This policy also specifically outlines the heating and cooling controls in residential buildings and provides information for occupants with local controls on how to make adjustments to their heating and cooling system.

The primary objective of any heating and cooling system is to create a reasonably comfortable living and working environment, while balancing the need to economize and use resources wisely. Using energy responsibly by standardizing temperature set points will reduce greenhouse gas emissions and will offset increases in utility costs. Please assist the University in our energy efficiency efforts by maintaining these set points.

## Applicability

This policy applies to all inhabitants of buildings on Bentley University's Waltham, MA campus. This includes external groups such as summer camps who use the University's buildings. Areas that have been identified as technology centers, network closets or have equipment that requires specific environmental controls are exempt from this policy.

## Academic and Administrative Buildings Seasonal Changes

When determining the exact changeover dates for each building, Facilities Management considers prevailing weather patterns, each building's HVAC and controls system, and building usage. This process occurs over a two week period in October and May and is not readily reversible. In the spring and autumn seasons outside temperatures are extremely variable. Please be aware that during these seasons indoor temperatures might drift beyond the temperature guidelines set forth in this policy and little can be done other than to endure the event. However, in the event of a severe cold spell where temperatures of less than 32°F are predicted for more than a 48 hour period after the switch to cooling, heating will be returned to the building as soon as possible.

## Heating Season

The heating season is generally from mid-October to mid-May. During this period the University will heat interior spaces during normal occupied hours to a temperature of 68°F - 74°F, which is the established occupied set point for the campus during the heating season. Facilities Management recognizes that temperatures will vary within the building and every effort will be made to stay within 3°F of this range. These temperatures will be set by Facilities Management using a centralized building control system. Occupants who control their own temperature are asked to adhere to this policy. Please note that temperature readings are taken at the thermostat level.

A temperature range of 68°F - 74°F has been established as “the comfortable temperature for most people who are dressed appropriately for the season” per the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 55, *Thermal Environmental Conditions for Human Occupancy*. Given these standards it is expected that five percent (5%) of the population will be hot/cold at the same temperature. Please limit calls to when the temperature is outside of the established range.

### **Unoccupied Hours**

Most buildings have designated occupied hours. In an effort to save energy, the temperature set points may be changed to a minimum of 58°F, which is the established unoccupied set point for the campus during the heating season. Unoccupied hours may include non-business hours, weekends and holidays and will be established on a building-by-building basis.

### **Building Entrance and Hallway Areas**

All building entranceways and hallways will be heated to a minimum of 55°F and 62°F respectively where the temperature is separately controlled by the centralized building controls.

### **Supplemental Heaters**

Supplemental electric heaters, or space heaters, shall only be issued in the case of long-term system malfunctions and as authorized and provided by Facilities Management. No other use of electrical heaters is allowed and unauthorized heaters will be removed. If your area is not sufficiently heated, an online work order request or call to Facilities Management may be placed in order to have the area evaluated. The heating system may need to be adjusted or baseboard heat may be installed to correct the situation. Supplemental heaters are a major safety concern and are not permitted on campus, except as listed above.

### **Cooling Season**

The cooling season is generally from mid-May to mid-October. During this period the University will provide air conditioning to most interior spaces during normal occupied hours to a temperature range of 68°F - 74°F, which is the established occupied set point during cooling season. Facilities Management recognizes that temperatures will vary within the building and every effort will be made to stay within 3°F of this range. These temperatures will be set by Facilities Management using a centralized building control system. Occupants who control their own temperature are asked to adhere to this policy. Please note that temperature readings are taken at the thermostat level.

A temperature of 76°F has been established as “the comfortable temperature for most people who are dressed appropriately for the season” per ASHRAE Standard 55, *Thermal Environmental Conditions for Human Occupancy*. Given these standards it is expected that five percent (5%) of the population will be hot/cold at the same temperature. Please limit calls to when the temperature is outside of the established range.

## Heat Waves

The air conditioning systems on campus are designed to meet typical summer conditions for our geographic location and occupant load. They are also designed to handle heat waves that are a regular occurrence during New England summers. In cases of atypical heat waves, the systems at full capacity are able to cool buildings to approximately 15°F below the outside air. Thus during excessive heat waves of 90°F and higher, the systems may only be able to cool to 75°F.

Air conditioning systems are usually run overnight during heat waves to further reduce the indoor temperature. Occupants are also encouraged to reduce the heat load put on the air conditioning systems by reducing the lighting in their areas, shutting down computers and equipment when not in use, and closing doors and windows.

## Unoccupied Hours

Most buildings have designated occupied hours. In an effort to save energy, the temperature set points may be changed to a maximum of 83°F, which is the established unoccupied set point for the campus during the cooling season. Unoccupied hours may include non-business hours, weekends and holidays and will be established on a building-by-building basis.

## Summer Hours

Facilities Management will follow the designated schedule for summer hours set forth by Human Resources. Buildings will be placed into unoccupied mode at the close of business on Thursday and will return to occupied mode for opening of business on Monday.

## Building Entrance and Hallway Areas

All building entranceways and hallways will be cooled to a maximum of 78°F and 77°F respectively where the temperature is separately controlled by a centralized building control system.

## Residence Halls

Bentley residents are encouraged to help with energy conservation on campus by keeping windows closed when the heating and cooling systems are on. In buildings where the residents control their own thermostats, they should adhere to the heating and cooling set points set forth for the academic and administrative buildings above. More detailed information regarding the operation of each residential building's heating and cooling system is included at the end of this document.

## Medical Conditions

If a resident has a medical condition that requires specific heating, cooling, air filtration, or dehumidification, they must contact Residence Life prior to housing selection. The resident must present a letter from their doctor detailing the requirements. This shall include heating, cooling and

humidification set points and air filtration needs. Facilities Management will review the requirements and provide Residence Life with a list of buildings and/or rooms that meet the requirements. If the requirements are not able to be satisfied via the current mechanical systems in place, residents will be notified and may need to purchase a stand-alone unit to supplement their building's system. Please note that supplemental or space heaters are not permitted on campus, except those provided by Facilities Management for temporary heat when a heating system has failed. Priority housing may be granted by Residence Life in order to ensure the health and well-being of the resident.

## Seasonal Changes

When determining the exact changeover dates for each building Facilities Management considers prevailing weather patterns, each building's HVAC and controls system, and building usage. This process occurs over a two week period in mid-October and mid-May and is not readily reversible. In the spring and autumn seasons outside temperatures are extremely variable. Please be aware that during these seasons indoor temperatures might drift beyond the temperature guidelines set forth here and little can be done other than to endure the event. However, in the event of a severe cold spell where temperatures of less than 32°F are predicted for more than a 48 hour period after the switch to cooling, heating will be returned to the building as soon as possible.

## Heating Season

The heating season is generally from mid-October to mid-May. When the heating systems are enabled, the University will heat interior spaces during normal occupied hours to a temperature of 68°F - 74°F, which is the established occupied set point for the campus during the heating season. Heating systems are generally enabled at 61° F. Facilities Management recognizes that temperatures will vary within the building and every effort will be made to stay within 3°F of this range. These temperatures will be set by Facilities Management using a centralized building control system. Occupants who control their own temperature are asked to adhere to this policy. Please note that temperature readings are taken at the thermostat level.

A temperature of 68°F has been established as “the comfortable temperature for most people who are dressed appropriately for the season” per ASHRAE Standard 55, *Thermal Environmental Conditions for Human Occupancy*. Given these standards it is expected that five percent (5%) of the population will be hot/cold at the same temperature. Please limit calls to when the temperature is outside of the established range.

Residents may make minor changes to the level of the heating by adjusting the thermostat setting. The centralized control system is designed to heat or cool the building to a predetermined temperature while the thermostats are designed to allow minor adjustments to accommodate varying building conditions, such as a room on the sunny side of a building or one with many windows.

## Duty Cycling

A duty cycle is the fraction of time that an HVAC unit is in an inactive state. Building control systems are programmed with a duty cycle to allow certain types heating and cooling units to rest for a certain period of time each hour. Duty cycling these units extends their useful life and prevents pre-mature freezing or burnout of the machines.

Interior and exterior temperature sensors are strategically located on each building to relay representative temperatures back to the centralized control system. Outside air temperature must be below 61°F to enable the heating system. If the building control system is programmed with a duty cycle, once that temperature is reached the units will run for between 15 and 45 minutes per hour depending on the building, on a duty cycle to allow the units to rest. If the outside air temperature is above 61°F, the heating systems will not turn on.

## Unoccupied Hours

During designated periods of time where the University's residence halls are closed, Facilities Management may change temperature set points from the occupied to unoccupied set points. During these times the temperature in most spaces will be allowed to drop to a minimum temperature of 58°F.

## Building Entrance and Hallway Areas

All building entrance ways and hallways will be heated to a minimum of 55°F and 62°F respectively where the temperature is separately controlled by a centralized building control system.

## Supplemental Heaters

Supplemental electric heaters, or space heaters, shall only be issued in the case of long-term system malfunctions and as authorized and provided by Facilities Management. No other use of electrical heaters is allowed and unauthorized heaters will be removed. Supplemental heaters are a major safety concern and are not permitted on campus, except as described above.

## Cooling Season

The cooling season is generally from mid-May to mid-October. When the cooling systems are enabled, the University will provide air conditioning to most residence halls to a temperature of 68°F - 74°F, which is the occupied cooling set point for the campus. Most cooling systems on campus are enabled when the outdoor air temperature rises above 75°F. Facilities Management recognizes that temperatures will vary within each building and every effort will be made to stay within 3°F of this range. These temperatures will be set by Facilities Management using a centralized building control system.

In some buildings, occupants may make minor changes the level of the cooling by adjusting the thermostat setting. The centralized system is designed cool the building to a predetermined

temperature while the thermostats are designed to allow minor adjustments to accommodate varying building conditions, such as a room on the sunny side of the building or one with many windows.

A temperature of 76°F has been established as “the comfortable temperature for most people who are dressed appropriately for the season” per ASHRAE Standard 55, *Thermal Environmental Conditions for Human Occupancy*. Given these standards it is expected that five percent (5%) of the population will be hot/cold at the same temperature. Please limit calls to when the temperature is outside of the established range.

### **Duty Cycling**

A duty cycle is the fraction of time that an HVAC unit is in an inactive state. Building control systems are programmed with a duty cycle to allow certain types heating and cooling units to rest for a certain period of time each hour. Duty cycling these units extends their useful life and prevents pre-mature freezing or burnout of the machines.

Interior and exterior temperature sensors are strategically located on each building to relay representative temperatures back to the centralized control system. Outside air temperature must be above 75°F to enable the air condition systems. If the building control system is programmed with a duty cycle, once that temperature is reached the units will run for between 15 and 45 minutes per hour depending on the building, on a duty cycle to allow the units to rest. If the outside air temperature is below 75°F, the air conditioning systems will not turn on.

### **Unoccupied Hours**

During designated periods of time where the University’s residence halls are closed, Facilities Management may change temperature set points from the occupied to unoccupied set points. During these times the temperature in most spaces will be allowed to rise to a maximum temperature of 83°F. Summer break is excluded from this adjustment as Facilities Management may shut down residence halls completely if they are unoccupied over the summer.

### **Building Entrance and Hallway Areas**

All building entrance ways and hallways will be cooled to a maximum of 78°F and 77°F respectively where the temperature is separately controlled by the centralized building control system.

### **Cooling Policy for External Groups**

The University will provide limited cooling for all groups that are housed at Bentley during the summer break period. Cooling for groups housed in residence halls will follow the schedule outlined below. Please refer to the detailed information is on the operation of each residential building’s heating and cooling system is included at the end of this document.

**3:00pm – 9:00am:** Residential buildings will be set to “occupied.” As such, the University will provide air conditioning to a temperature of 68°F - 74°F,

**9:00am – 3:00 pm:** Residential buildings will run in unoccupied status. During this time building temperature will be allowed to rise to a maximum of 83°F.

## **Residence Halls: Heating and Cooling Systems**

While all residence halls have heating and air conditioning, there are many different types of systems on campus, which can cause confusion among building occupants. In addition to the differences within the rooms themselves, the hallway and common areas systems vary throughout the campus. The building descriptions below were created to assist residents in understanding how the heating and cooling units within their apartments, suites and rooms operate. As such, the information below does not include complete descriptions of the mechanical and controls systems.

Video tutorials were created to further assist with training on each building’s heating and cooling system. The videos can be found on the Facilities Management website at the following address: [www.bentley.edu/facilities-management/](http://www.bentley.edu/facilities-management/)

### **Orchard North and South**

During the heating season local thermostats in each apartment control the heat, which is provided through hot water baseboards.

During the cooling season, through-the-wall air conditioning units run for if the outdoor air temperature is above 75°.

Units within Orchard North and South are set to as duty cycle which disables their operation for fifteen minutes per hour based on floor number. The first floors are off the first fifteen minutes, the second floors are off the second fifteen minutes, the third floors are off the third fifteen minutes, and the fourth floors are off the fourth fifteen minutes of each hour. Please note that the common areas and hallways are not equipped with air conditioning.

## Tree Dorms, Slade Hall, Rhodes Hall, Cape House, Castle House and Stratton House

These buildings are equipped with through-the-wall heat pumps for heating and cooling. The heating and cooling units in these buildings run if the outdoor air temperature is below 61°F or above 75°F. The units will not turn on if the outdoor air temperature is between 61°and 75°F. The units are set to a duty cycle that disables their operation for fifteen to forty-five minutes per hour based on the outside air temperature. Approximate run times are listed below.

Run Time (minutes)	Outside Temp (°F)
45	20 or colder
30	39
15	57
0	58 - 75
15	76
30	81
45	90 or warmer

Please note that the common areas and hallways are not equipped with air conditioning.

## Falcone Apartments

The Falcone Apartments are equipped with heat pumps for heating and cooling. These units are enabled at all times without a duty cycle.

The hallways and common areas in these buildings are equipped with air conditioning.

## Copley Suites

Copley North and South are equipped with fan coil units which provide heating and cooling in each suite. These units are enabled at all times without a duty cycle.

The hallways and common areas in these buildings are equipped with air conditioning.

## Fenway Hall

Fenway Hall is equipped with fan coil units which provide heating and cooling in each suite. These units will run if the outdoor air temperature is below 61°F or above 75°F. The units will not turn on if the outdoor air temperature is between 61°and 75°F. The building is set to a duty cycle that enables their operation for fifteen to forty-five minutes per hour based on the outside air temperature. Approximate run times are listed below.

Run Time (minutes)	Outside Temp (°F)
45	20 or colder
30	39
15	57
0	58 - 75
15	76
30	81
45	90 or warmer

The hallways and common areas in these buildings are equipped with air conditioning.

## North Campus Apartments (ABCD) Collins Hall, and the Boylston Apartments

These buildings are equipped with in-room occupancy sensors which trigger the room into occupied or unoccupied mode. The heating and cooling systems in these buildings will run if one of the following conditions is met:

**Room Occupied :** Outdoor air temperature is below 61°F or above 75°F and the interior temperature is below 68° or above 74°.

**Room Unoccupied:** Outdoor air temperature is below 61°F or above 75°F and the interior temperature is below 63° or above 78°.

These units have a duty cycle that disables their operation for fifteen minutes per hour based on floor number. At the North Campus Apartments, the ground floors are off the first fifteen minutes, the first floors are off the second fifteen minutes, and the second floors are off the third fifteen minutes of each hour. At Collins Hall, the units are set to a minimum run cycle that enables their operation for fifteen minutes per hour based on floor number to allow for ventilation when the outdoor air temperature is below 61° or above 75°.

The hallways and common areas of the North Campus Apartments and Collins Hall are equipped with air conditioning. Please note that the common areas and hallways in Boylston A and B are not equipped with air conditioning.

## Forest Hall and Kresge Hall

Forest Hall is equipped with fan coil units and Kresge Hall with heat pumps, which run when the following condition is met:

Outdoor air temperature is below 61° or above 75° and the space temperature is below 68° or above 74°.

These units are set to a minimum run cycle that enables their operation for fifteen minutes per hour based on floor number to allow for ventilation when the outdoor air temperature is below 61° or above 75°.

The hallways and common areas in these buildings are equipped with air conditioning.

## RESIDENCE HALL SUMMER SCHEDULE REQUEST FORM

Please use this form to submit a new or updated request for summer scheduling. Please submit as soon as possible to ensure the schedule has been added to our system prior to your arrival. The master schedule for the summer is added in early May; however updates can be added with advanced notice using this form.

NEW REQUEST    **or**     UPDATED REQUEST FOR SUMMER SCHEDULING

BENTLEY SPONSOR: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_      DATE: \_\_\_\_\_

INTERNAL    DEPARTMENT      \_\_\_\_\_

EXTERNAL    MCS CONTACT      \_\_\_\_\_

Group Organizer received and understands Temperature Policy, which includes the unoccupied daytime schedule. \_\_\_\_ (initial)

The Conference Center reviewed heating/cooling of the rented residence hall (s) with the Group Organizer. \_\_\_\_ (initial)

The Conference Center reviewed occupancy schedules of academic/administrative buildings on campus for those groups utilizing these spaces. \_\_\_\_ (initial)

GROUP ORANIZER: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_      DATE: \_\_\_\_\_

**BUILDING (S)** \_\_\_\_\_

Buildings may be fully or partially occupied, with different move-in and out dates. Please choose from the following three options (full, partial or staggered), and provide a list of rooms where appropriate.

**FULL OCCUPANCY: ALL ROOMS IN BUILDINGS OCCUPIED FOR DURATION OF STAY.**

	DATE	TIME
MOVE-IN		
MOVE-OUT		

**PARTIAL OCCUPANCY: ATTACH LIST OF ROOMS TO BE OCCUPIED**

	DATE	TIME
MOVE-IN		
MOVE-OUT		

**STAGGERED OCCUPANCY: ATTACH LIST OF ROOMS, GROUPED BY SCHEDULE NUMBER.**

GROUP SCHEDULE 1:

	DATE	TIME
MOVE-IN		
MOVE-OUT		

GROUP SCHEDULE 2:

	DATE	TIME
MOVE-IN		
MOVE-OUT		

GROUP SCHEDULE 3:

	DATE	TIME
MOVE-IN		
MOVE-OUT		