

FACILITY THERMAL COMFORT & ENERGY CONSERVATION

EFFECTIVE DATE: 10/15/2021

Scope

This document gives guidelines for Facility Thermal Comfort and Energy Conservation for heating/cooling temperature set points in residential buildings, offices and classroom spaces including occupied and unoccupied space.

Reason for the Guideline

These guidelines aim to improve the comfort of building occupants, save energy, reduce operating costs, and reduce the University's carbon emissions. This applies to all buildings managed by the University of Houston Facilities/Construction Management (F/CM) Department (PPV and the Athletics Department are encouraged to follow this guidance).

These standards are based on ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) Standard 55-Thermal Environmental Conditions for Human Occupancy. This standard identifies the thermal comfort zone where 80% or more of occupants are comfortable. The guideline reflects current University of Houston design specifications for new construction and is consistent with temperature set-point policies at institutions throughout the US.

Basic Process

1. All facilities will use the following temperature set points for campus buildings.

Occupied Spaces

Cooling Season - 74° F
Heating Season - 70° F

Unoccupied Spaces

All Seasons - 78° F

2. Spaces with specific temperature, humidity, and air flow requirements, such as laboratories, as well as some assembly spaces, may be operated under different parameters in order to meet programmatic requirements or to optimize energy efficiency. F/CM will address these spaces on a case-by-case basis.
3. In addition to normal operating temperatures, F/CM is also implementing work hour set points and setbacks in order to achieve further energy savings. The

following hours will be observed for all offices, general education spaces, student housing, and non-research related facilities.

Normal Work Hours for Summer

Monday through Friday
7 AM - 10 PM

Set Back Hours

Monday through Thursday
10 PM - 7 AM and
10 PM Friday through 7 AM Monday

4. During Set Back Hours, the central fan systems may be shut off or cycle on and off to maintain these adjusted setback temperatures and conserve energy. Each building will be unique as to the time required to bring a building back to the normal working hour's set point. F/CM will work to insure building temperatures are within normal working hour's ranges during normal work hours. Each building is unique in its age and HVAC system capabilities and may require an additional hour or two to achieve this temperature throughout the building.
5. Residential and Research buildings are considered occupied 24/7 except during breaks when certain buildings may be unoccupied.
6. All other buildings will be managed with the indicated schedule.
7. Specific exceptions may exist for retail, dining, and recreation facilities that may have different operational hours.
8. Temperature settings are set to provide thermal comfort levels within a space; however, the HVAC system may not have the ability to maintain a constant temperature, therefore, a range of acceptable temperature is provided such that building occupants can make a determination on whether or not they should contact FIX-IT to report a hot or cold condition.

| | Summer Set Point (cooling) | Acceptable Temperature Range - Summer | Winter Set Point (heating) | Acceptable Temperature Range - Winter |
|----------------------------------|----------------------------|---------------------------------------|----------------------------|---------------------------------------|
| Occupied Space | 74 °F | 70 - 78 °F | 70 °F | 68 - 74 °F |
| Unoccupied Space | 78 °F | 76 - 80 °F | 60 °F | 58 - 62 °F |
| Residence Hall Suites and Rooms* | 72 °F | 68 - 76 °F | 70 °F | 66 - 74 °F |
| Setback Hours | 78 °F | 76 - 80 °F | 60 °F | 58 - 62 °F |

** Student Housing Residential rooms have manually controlled thermostats, the set point represents the system set point.*

9. If temperatures are outside of this range, please inform your building coordinator or contact FIXIT (www.uh.edu/fixit) to report the situation.

Exceptions

1. Requests for exceptions to these guidelines should be provided in writing from the departmental Vice President to the Senior Associate Vice Chancellor/Associate Vice President of Facilities/Construction Management.
2. Requests should include the building name and number, the name and contact information of the person making the request, and the justification for the request.
3. Exceptions will not typically be approved to accommodate individuals who desire to work temporarily outside normal operating hours.

Additional Information

1. The University does not have a predetermined date when it converts buildings from heating to cooling or from cooling to heating. In most buildings, this is managed by the Building Automation System (BAS).
2. In older buildings, where the BAS is older and may not manage these changes automatically, Facilities monitors the weather and begins converting buildings when the weather forecast indicates a prolonged period of cold weather or warm weather, depending on the season and mode of operation.
3. Difficult times are periods or days when temperatures are in the 40s/50s in the morning and rise to 85/90 by afternoon. For energy conservation purposes, it is not advantageous to heat a building in the morning and attempt to change it to a cooling mode.
4. Building exposure to sun or wind complicates the process. Classrooms and offices on one side of a building might be comfortable or too warm while those on the other side may be too cold because of less exposure.

Office of Authorship and Revision History

Facilities Services

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