

**BUCKLAND HALL**

*Two Pipe Steam*



*Heating System Description  
and  
How to make it work*

**MOUNT  
HOLYOKE  
COLLEGE**

**Tel. 2012**

**or, after normal  
business hours**

**Tel. 2016**

## HEATING HELPERS

Be certain that windows are shut tightly. If your windows won't shut properly call Facilities Management at x2012 to report the problem. We will fix it.

Drawing the window blind will help to slow heat losses during the OFF cycles of the heating operation.

If your room has a temperature sensor in it, TRY NOT to locate heat producing devices such as a lamp nearby. This can severely limit the heat to the building.



**BUCKLAND HALL**

Monday – Friday  
8:00 am – 4:30 pm  
Call Facilities Management @ x2012

All other Hours  
Call the Central Heating Plant  
@ x2016

## WHERE'S THE HEAT COME FROM?

The entire campus is heated with steam that is produced in the Central Heating Plant and then distributed to every building via underground pipes.

At the peak of the season approximately 6,500 gallons of #6 Fuel Oil is burned every day to make the steam required to heat our buildings. This steam is maintained at very high pressures and is used first to generate electricity before being utilized by the campus for heating purposes. This generated electricity is applied against the consumption of Utility (purchased) power.

Underground distribution piping bring the steam to each building where it's pressure is reduced and made useable for the various heating systems.

Once the steam has released it's energy it returns to the CHP as condensate, to be re-heated for another cycle. About 90% of the steam returns as water for re-use.



**The Energy Management  
Computer watches for heat  
and cold around the clock**

## IT'S A TWO PIPE – STEAM RADIATOR

Buckland Hall is heated with a two-pipe steam system. Steam from the Central heating Plant is piped into the building where it is controlled by automatic valves located in the mechanical spaces of the basement.



Sensors located throughout the building monitor the room temperatures and report that information to an Energy Management Computer System also located in the basement. This information is transmitted to a Master Computer System in the Central Heating Plant where it is checked against a heating program dedicated to the Buckland environment. The automatic valves respond to this program to maintain the spaces at Setpoint ( the equivalent of a Thermostat setting).

The Engineer operating the Central Heating Plant when necessary can override this program.

Steam radiators are located in every room and have some control associated with them. They are convection dependent devices and require adequate air flow to work properly. A covered or blocked radiator will not function efficiently.

Each radiator has a steam valve that permits steam to enter the radiator where the energy is released to the cast iron sections. Turning the valve *counter-clockwise* opens the valve and is the **ON** position. The radiator will HEAT when the steam is available. When the valve is turned *clockwise* all the way to it's stop, the valve is **OFF** and NO HEAT will result when the building's automatic valve cycles to heat the rest of the building. If you leave your steam valve off and leave your room, your room will not get the heat needed to maintain your room at a comfortable temperature. When you turn the valve on, there is no guarantee that steam will be available at that time. Thus no guarantee that your room will begin to receive heat immediately, and in fact it may be several degrees cooler than any rooms that had their valves open during the same time period. This valve can be positioned anywhere between fully open and closed, which will control the rate at which the radiator produces heat.

There is a Steam Trap at the opposite end of the radiator, and this Trap reacts to steam and conden-

sate. When the hot steam reaches the steam trap's temperature sensitive element it closes, thereby trapping the hot steam in the radiator where it must surrender it's Btu's to the surrounding radiator. The hot radiator warms the nearby room air and convection moves the warm air around the room to heat the space. As the steam loses thermal energy it condenses and the cooler condensate is allowed to pass out of the radiator and into the return piping system for eventual recycling at the Central Heating Plant.

Mount Holyoke burned 940,000 thousand gallons of Oil last year, for heat and hot water.

**This would heat more than 1500 homes for a year. Or, a single home for more than 1,000 years.**

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