

New College

New College is a three story, 16,110 square foot administrative office and classroom building that was reconstructed in 1832 after being destroyed by fire. New College received a major renovation that included new HVAC systems in 2010.

The HVAC system consists of a single Variable Air Volume Air Handling Unit (AHUs) serving 32 variable air volume (VAV) terminal units on the three floors. The primary mechanical equipment is located in the basement and the terminal units are located within the ductwork throughout the building. Each Air Handling Unit is capable of air side economizer function and is equipped with disposable MERV-8 air filters. The building HVAC systems are normally scheduled to operate between 6:00 AM and 7:00 PM on weekdays. The building AHU supply fans are turned off outside of the occupied hours, unless the spaces become excessively hot or cold, or an occupant presses the override button located on thermostats within the building. The central AHU also includes a demand controlled ventilation (DCV) strategy which reduces ventilation to the building during low occupancy periods throughout the day.

FMD has disabled the DCV strategy and modified the building's occupancy schedule (extending the AHU operating hours) to maintain higher ventilation levels throughout the day and provide additional flushing of the air within the building at night and on weekends.

There are also two Fan Coil Units (FCUs) which heat and cool the building stairwells. These fan coil units recirculate the air within the stairwell whenever the building is schedule to operate.

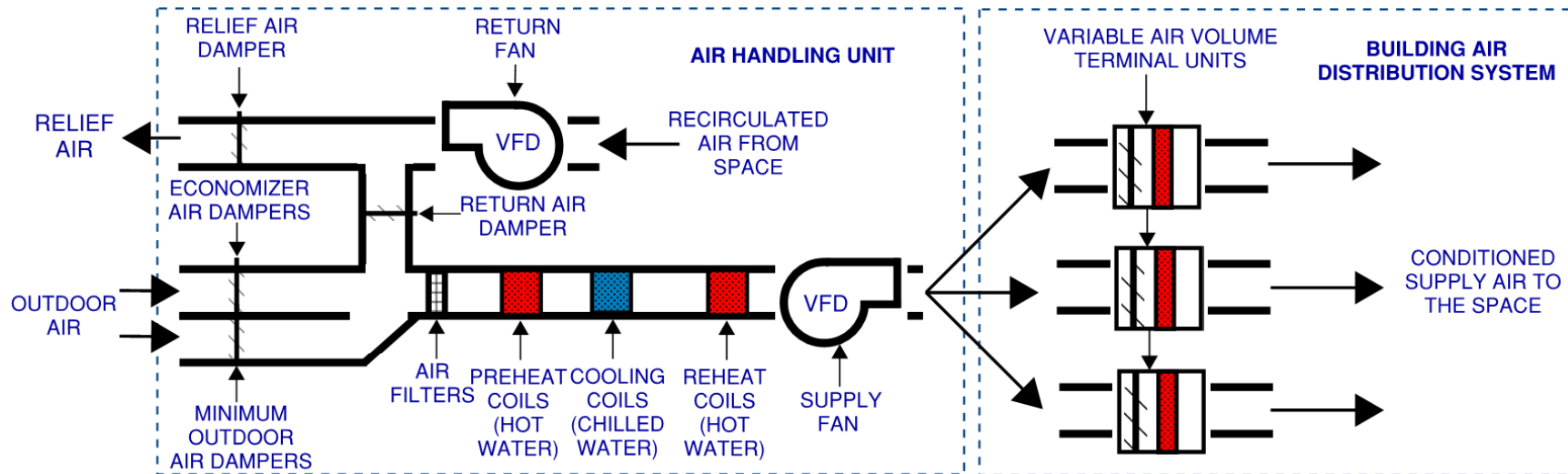
The systems are controlled by a direct digital control system (ALC). The building utilizes campus chilled water for cooling at each of the two FCUs and the central AHU. For heating provided in both AHUs and the VAV terminal units, the building utilizes campus steam through a heating hot water heat exchanger.

VARIABLE AIR VOLUME AIR HANDLING UNITS

The facility's Variable Air Volume Air Handling Unit is equipped with a bank of MERV-11 filters installed upstream of the heating coils, cooling coils and supply air fan, which remove large particulate matter from the airstream continuously. Air from the spaces is recirculated via the above ceiling plenum space and mixed with ventilation air from outside the building within the AHUs. This mixed air is drawn through the bank of filters and then cooled and dehumidified as needed as it passes through a chilled water, cooling coil. The cool, dehumidified air is then distributed throughout the spaces served by each AHU in ductwork.

Each Variable Air Volume Air Handling Unit is capable of operating with air side economizer controls which bring in additional quantities of outdoor air when the ambient temperature and humidity conditions are appropriate.

Prior to being delivered to individual spaces, duct mounted terminal units vary the volume of air to each zone and provided heating as required based on the current space temperature using a modulating air damper and hot water, reheat coil.

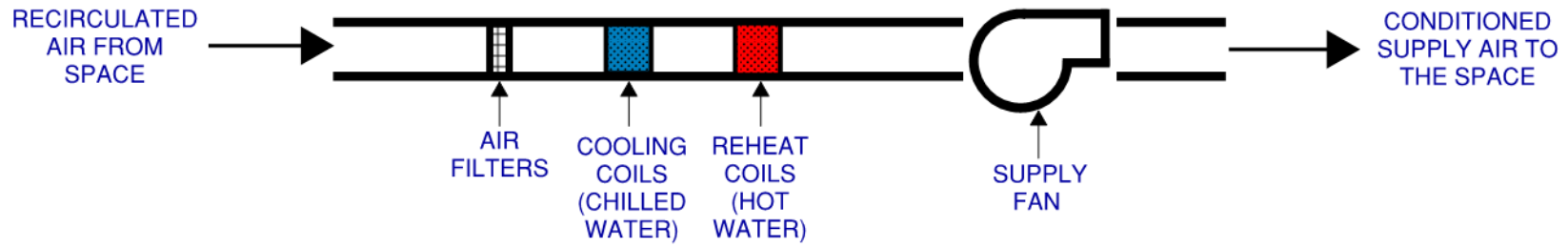


VARIABLE VOLUME AIR HANDLING UNIT SCHEMATIC

FAN COIL UNITS

A fan coil unit is fairly simple: it's a fan with a coil or coils (like a car radiator) that can add heating and cooling to the air stream flowing through it. The FCUs in New College have air filters to remove particulate matter from the air, a hot water coil and chilled water coil for heating and cooling the air, and a supply fan for forced air circulation through the unit and into the space.

The hot water is produced in the mechanical room by way of a heat exchanger that takes heat from the campus steam system and adds it to Park Hall's hot water loop. The chilled water is provided from UGA's central campus chilled water district and a building chiller located in the basement of Park Hall.



4-PIPE FAN COIL UNIT SCHEMATIC