

POULTRY SCIENCE (1013)

The Poultry Science Building was built in 1957 as a building with two wings. One wing houses offices and the other wing houses a combination of offices, laboratories and classrooms. Most of the original equipment serving the building remains. The majority of the laboratories which were originally heated and ventilated now have supplemental window air conditioning units.

The heating, ventilating and air conditioning systems serving Poultry Science vary with the type of occupancy. The offices are all served by two pipe, fan coil units that have one coil that is either heating or cooling based on a summer/winter changeover switch. In summer, the tempered water lines serving the fan coil units have cold water and in the winter the water is hot.

The laboratories have hot water fin tube radiation on the perimeter walls and have a dedicated fresh air make-up unit on the third floor, air handling unit S-3. The unit S-3, has chilled water and hot water coils to cool and heat the ventilation air it supplies to the building.

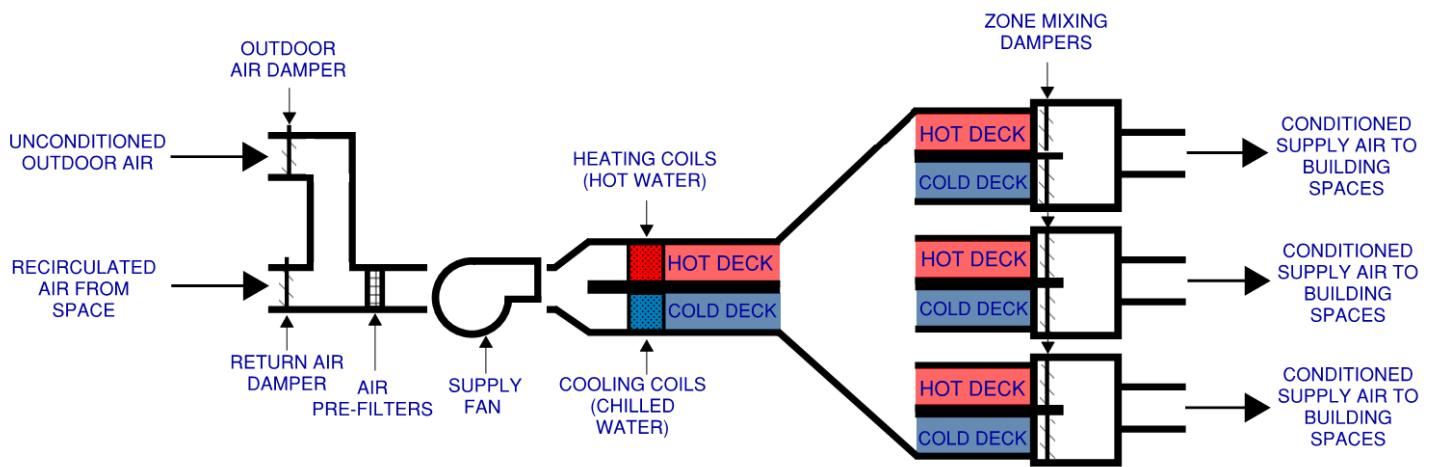
The first and second floor classrooms are served by air handling unit, S-1 and the third floor spaces are served by air handling unit S-2. Both units are multi-zone air handling unit with individual ducts supplying either hot or cold air, as needed, with a mixture of recirculated air or ventilation air to the individual spaces served by each set of ductwork.

There is a fourth unit, S-4 is located in a penthouse on the roof and serves a single classroom on the third floor. This unit is single zone air handler with chilled water and hot water coils supplying either hot or cold air, as needed, with a mixture of recirculated air or ventilation air to the third floor classroom.

Chilled water is supplied throughout the building from the chiller in the building mechanical room or from the campus chilled water system. Heating hot water, distributed throughout the building for heating, is provided from the campus heating hot water system.

MULTI-ZONE AIR HANDLING UNITS

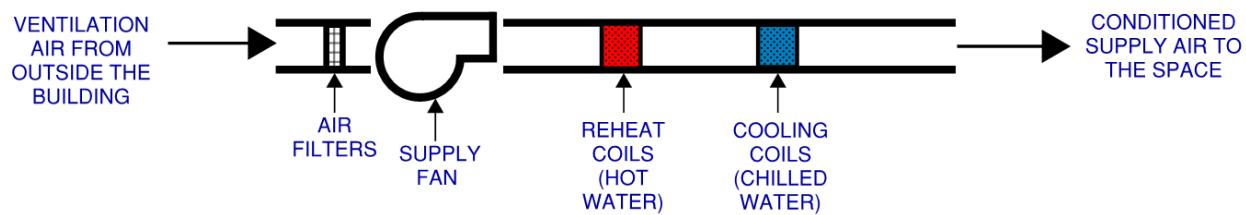
Each Multi-zone Air Handling Unit (AHU) provides ventilation, air filtration and movement, and heating and cooling functions. Each AHU has a hot water heating coil and chilled water cooling coil that respectively generate parallel warm and cool air streams. The air flow is distributed to a number of ducts that exit the AHU to serve individual zones, which may be single rooms or groups of rooms depending on their size. Each zone's duct has a mixing damper that allows only warm air, only cool air, or a mixture of the two, depending on the signal being sent from the zone thermostat. Ventilation is provided at each AHU by drawing a mixture of fresh air from outdoors and recirculated air from the areas being served by each AHU.



MULTI-ZONE AIR HANDLING SYSTEM SCHEMATIC

DEDICATED MAKE-UP AIR SYSTEM

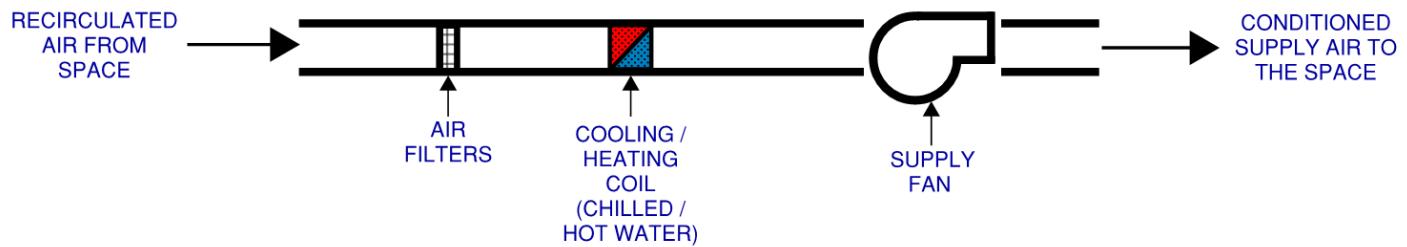
The dedicated make-up air system can be thought of as a building fresh air system that brings in outside air, conditions it to a moderate temperature, and distributes it to the laboratory spaces. The unit functions to maintain building pressurization and provide outdoor air to lab spaces as make up for the high volume of exhaust. The dedicated make-up air unit introduces and filters outdoor air and includes hot water and chilled water coils for heating and cooling along with a fan which delivers the ventilation air through a ductwork riser where it is delivered to the associated laboratory spaces.



DEDICATED VENTILATION 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 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.



2-PIPE FAN COIL UNIT SCHEMATIC