Research Building HVAC Summary Description

Below are "summary descriptions" for the Heating Ventilation and Air Conditioning (HVAC) systems at the Brown Research facilities. All HVAC equipment is on a preventive maintenance schedule for normal scheduled maintenance, inspections, and performance verification.

If Staff / Students have any questions on this information, please contact FM Service Response at 401-863-7800.

Click on the building name to link to more detailed information on each building HVAC system:

Arnold Lab: The interior portions of the building (conference rooms and corridors) is served by a Mixed-Air air-handling unit (AHU) that operates on an Occupancy schedule. Its fresh air can range from 10% to 50% outside air (depending upon season). The remainder of the building space is served by incremental fan coil units and operable windows. The AHU has MERV-8 (minimum efficiency reporting value) filters on the supply air.

Barus & Holley: The building is served by ten air-handling units (AHU's) of various configurations and operate 24/7/365 days a year. The air handler filters vary: older units utilize unrated filter media; newer units utilize MERV-13 (minimum efficiency reporting value) filters on the supply air.

One, 100% outside air (OA) AHU, with Constant-Volume controls, serves the main Research tower. Air exchange rates vary from 4-12 air changes per hour (ACH) based upon room and lab configuration.

Nine additional AHU's serve classrooms, dry labs and offices in the lower levels of the building. These units are Mixed-Air units, some with Constant-Volume controls and others with Variable air Volume controls. Their fresh air can range from 25% to 75% outside air (depending upon season). Air exchange rates vary from 4-12 air changes per hour (ACH) based upon room and lab configuration.

BioMed Complex: (Includes BioMed Center, CARE Facility, and Grimshaw)
The building is served by eighteen air-handling units (AHU's) of various configurations and which operate 24/7/365 days a year. The air handlers filters vary: older units utilize unrated filter media; newer units utilize MERV-14 (minimum efficiency reporting value) filters on the supply air.

Fourteen 100% outside air (OA) AHU's, serve BioMed Center, CARE and Grimshaw. Grimshaw has Variable air Volume controls; the remainder of the building has Constant air Volume controls. Air exchange rates vary from 4-12 air changes per hour (ACH) based upon room and lab configuration (and in Grimshaw based on Occupancy).

Four additional AHU's serve classrooms, dry labs and offices in the Terrace level and basement of the building. These units are Mixed-Air, with Variable air Volume controls. Their fresh air can range from 25% to 75% outside air (depending upon season). Air exchange rates vary from 2-4 air changes per hour (ACH) based upon room and lab configuration.

Engineering Research Center (ERC): The building is served by three air-handling units (AHU's) that operate 24/7/365 days a year. Two AHUs serve the general building spaces and one additional AHU serves the Cleanroom facility. All three units are 100% outside air (OA) AHU's with Variable air Volume controls. Air exchange rates vary from 4-8 air changes per hour (ACH) based upon occupancy. The

AHU's have MERV-15 (minimum efficiency reporting value) filters on the supply air. These AHU's incorporate UV lights for disinfection of the air.

GeoChem: The building is served by two air-handling units (AHU's) that operate 24/7/365 days a year. The AHU's are 100% outside air (OA) systems Variable air Volume controls. Air exchange rates in the spaces vary from 4-12 air changes per hour (ACH) depending on room/lab configuration and occupancy. AHU's have MERV-14 (minimum efficiency reporting value) filters on the supply air.

MacMillan: The building is served by five air-handling units (AHU's) of various configurations. All AHU's all have MERV-11 (minimum efficiency reporting value) filters on the supply air.

Research labs are served by one 100% outside air (OA) AHU with Variable air Volume controls, which operates 24/7/365 days a year. Air exchange rates in the research spaces vary from 4-15 air changes per hour (ACH) depending on room/lab configuration and occupancy.

Two additional 100% outside air (OA) AHU's, with Variable air Volume controls, serve the teaching labs. Air exchange rates in these spaces vary from 4-15 air changes per hour (ACH) based on occupancy schedule.

Two additional AHU's serve each of the auditorium and the large classroom. These units are Mixed-Air units with Variable air Volume controls, and operate based on an occupancy schedule. Their fresh air can range from 60% to 100% outside air (depending upon season).

Medical Research Lab (MRL): The building is served by three air-handling units (AHU's). The AHU's all have MERV-11 (minimum efficiency reporting value) filters on the supply air.

There are two 100% outside air (OA) AHU's with Constant Volume controls, that serve the upper levels of the building, which operate 24/7/365 days a year. Air exchange rates average 6-8 air changes per hour (ACH) based upon room and lab configuration.

One additional 100% outside air (OA) AHU, with constant volume controls, is installed to serve the basement area lab spaces. This area is not used and the AHU is presently not in use.

Metcalf Research: The building is served by three air-handling units (AHU's) of different configurations. The AHU's all have MERV-14 (minimum efficiency reporting value) filters on the supply air.

Two 100% outside air (OA) AHU's, with Variable air Volume controls, serve the corridors, labs, and offices. These units operate 24/7/365 days a year. Air exchange rates vary from 3-4 air changes per hour (ACH) based upon occupancy.

One additional AHU serves the auditorium. This unit is a Mixed-Air unit with Variable air Volume controls, and operates based on an occupancy schedule. Its fresh air can range from 25% to 50% outside air (depending upon season). Air exchange rates vary from 3-4 air changes per hour (ACH) based upon occupancy.

Prince Engineering Lab: The Building is served by sixteen air-handling units (AHU's) of various configurations, most of which operate 24/7/365 days a year. Most of these units are original 1960's vintage and do not have MERV-rated filters. The recent-vintage unit in the Mezzanine (AHU21) has MERV-11 (minimum efficiency reporting value) filters on the supply air.

Ten Heating and ventilating AHU's, with Constant Volume controls, serve the upper-level machine shop and office spaces. These units do not have functioning Outside Air (OA) supplies, and function as recirculating heating units only.

Six additional AHU's serve wet labs, dry labs and offices in the lower levels of the building and the Mezzanine level. These units are generally small capacity and serve only limited areas of the building spaces. Two of these AHU's are 100% outside air, Constant Volume units. The remaining four units are Mixed-Air units, with either Constant Volume units or Variable Volume controls. Their fresh air of the Mixed-Air units can range from 20% to 80% outside air (depending upon season). Air exchange rates in these limited areas served vary from 4-6 air changes per hour (ACH) based upon room and lab configuration.

Sidney Frank Hall: The building is served by six air-handling units (AHU's) and operate 24/7/365 days a year. The AHU's all have MERV-14 (minimum efficiency reporting value) filters on the supply air.

Five 100% outside air (OA) AHU's, with Variable air Volume controls, serve the main building spaces, research labs, and CARE. Air exchange rates vary from 4-8 air changes per hour (ACH) based upon occupancy.

One additional Mixed-Air AHU, with variable volume controls, serves the Meeting Street wing and MRI suite. Its fresh air can range from 30% to 100% outside air (depending upon season). Air exchange rates vary from 4-6 air changes per hour (ACH) in the main sections of this space, and 10-13 ACH (of "single-pass" air in the MRI suite, based upon occupancy.

70 Ship Street: The building is served by five air-handling units (AHU's). All AHU's have MERV-14 (minimum efficiency reporting value) filters on the supply air.

Three 100% outside air (OA) AHU's, with Variable air Volume controls, serve general building spaces, research labs, and CARE. These AHU's operate 24/7/365 days a year. Air exchange rates vary from 4-12 air changes per hour (ACH) based upon occupancy.

One Mixed-Air AHU, with Variable air Volume controls serves the offices and lecture hall of the building. Its fresh air can range from 20% to 100% outside air (depending upon season). It operates based on an occupancy schedule. Air exchange rates vary from 3-4 air changes per hour (ACH) based upon occupancy.

The NMR suite is served by a dedicated and redundant Constant Volume air-handling unit that operates 24/7/365 days a year. Its fresh air can operate from 30% to 100% outside air (depending upon season).

121 South Main Street: The Building is served by a number of air-handling units (AHU's) of various configurations. All AHU's have MERV-11 (minimum efficiency reporting value) filters on the supply air.

Most areas of the building are served by Mixed-Air AHU's, with Variable air Volume controls. Their fresh air can range from 10% to 50% outside air (depending upon season).

Three, 100% outside air (OA) AHU's, with Constant-Volume controls, serve the third floor Research area of the building.

85 Waterman: The building is served by three air-handling units (AHU's) of different configurations. The AHU's all have MERV-14 (minimum efficiency reporting value) filters on the supply air.

Two 100% outside air (OA) AHU's, with Variable air Volume controls, serve the general building spaces, research labs, and classrooms. These units operate 24/7/365 days a year. Air exchange rates vary from 4-46air changes per hour (ACH) based upon occupancy.

One additional AHU serves the auditorium. This unit is a Mixed-Air unit with Variable air Volume controls, and operates based on an occupancy schedule. Its fresh air can range from 10% to 100% outside air (depending upon season). Air exchange rates vary from 2-4 air changes per hour (ACH) based upon occupancy.

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