25 0510 Existing Building Automation System (BAS) Description

1. Armenise Building
   a. BAS Vendor
      i. Siemens
   b. Communication
      i. P2, Ethernet, BACnet.
   c. Systems
      i. Cooling
         1. D1 Chilled Water: Serves AHU’s. Electronic valve actuation. (2) pumps on VFD’s. DP control.
         2. D2 Chilled Water: Serves FCU’s. Pneumatic valve actuation and bypass. (2) pumps on VFD’s.
         3. Condenser Water Control: (2) pumps on starters (?). Bypass valve, emergency city water supply controlled by pneumatic actuation by pressure.
      ii. Heating
         1. HTX-1 (2) steam HEX. On/Off via outside air temperature. Pneumatic valve actuation. (4) pumps on starters. DP control.
         2. HTX-2 (2) steam HEX. On/Off via outside air temperature. Pneumatic valve actuation. (4) pumps on starters. DP control.
         4. Snow Melt: roof snow melt system.
      iii. AHU’s


iv. Exhaust Fans

1. 5th floor DI side General: Fan on VFD. Control not shown.

2. 1st floor DI side General: Fan on VFD. Control not shown.

2. Building C
a. BAS Vendor
   i. Siemens

b. Communication
   i. P2, Ethernet, BACnet

c. Systems
   i. Cooling:
      1. HOG ELEC CW: Pneumatic actuation. (4) pumps on VFD’, staged operation, DP control.
   
   ii. Heating:
      1. HTX-1 steam HEX. On/Off via outside air temperature. Pneumatic valve actuation. Pumps on VFD. DP control.


   iii. AHU's:
      1. AHU-1 Supply. Capacity XX CFM: 100% outside air unit. All electronic actuation. Preheat (LPS) enabled by outside air temperature. Chilled water coil. Reheat (LPS) coil. Humidification (LPS). Fans on VFD.

      2. MAHU-1 Supply. Capacity XX CFM: 100% outside air unit. All electronic actuation. Preheat (LPS) enabled by outside air temperature. No cooling. Humidification (LPS). Fans on VFD.

      3. AC-1 Supply. Capacity XX CFM: 100% outside air unit. All pneumatic actuation. Preheat (LPS) enabled by outside air temperature. Chilled water coil. Reheat (LPS) coil. Fan on VFD.


iv. Exhaust Fans:
1. EF-6: Static control. Fan on VFD.

2. EF-7 (Hood Exhaust): Fan on VFD. Static pressure control.

3. Countway Library
   a. BAS Vendor
      i. Siemens
   b. Communication
      i. P2, Ethernet
   c. Systems
      i. Cooling:
         1. Chilled water system: Pneumatic control and actuation. Deny valve. (2) Pumps on VFD.
      ii. Heating:
         1. HX-1: Steam HEX outside air temperature control. Pneumatic actuation. (2) Pumps on starters.
      iii. AHU's:


iv. Exhaust Fans: No information.

4. Goldenson Building
   a. BAS Vendor
      i. Siemens
   b. Communication
      i. P2, Ethernet, BACnet
   c. Systems
      i. Cooling:
      ii. Heating:
         1. HTX-1 steam HEX. On/Off via outside air temperature. Pneumatic valve actuation. Pumps on starter.
      iii. AHU's:
         1. AHU-1 Supply. Capacity XX CFM: 100% outside air unit. All electronic actuation. Preheat (LPS) enabled by outside air temperature. Chilled water coil. Reheat (LPS) coil.
         3. AHU-3 Supply. Capacity XX CFM: 100% outside air unit. All electronic actuation. Preheat (LPS) enabled by outside air temperature. Chilled water coil. Reheat (LPS) coil.


7. AHU-7: Demolished


iv. Exhaust Fans:

1. EXF-1: NMR Lab 145 EXF. Operated with panic button.

2. EXF-2 & 3: General Lab Exhaust. Static pressure control.

5. Gordon Hall
   a. BAS Vendor
      i. Siemens
b. Communication
   
i. P2, Ethernet

c. Systems
   
i. Cooling
   

ii. Heating
   
1. HTX-1 steam HEX. On/Off via outside air temperature. Electronic valve actuation. Pumps on VFD’s. DP control.

iii. AHU’s
   
1. SPF: Stairwell pressurization fan
4. AHU-5. Capacity XX CFM: 100% Outside air unit. (2) low pressure steam preheat valves. Chilled water coil.

iv. Exhaust Fans
   
1. Atrium Exhaust

6. Harvard Institutes of Medicine (HIM)
a. BAS Vendor
   i. Johnson Controls.
   ii. Siemens on 4th Floor and Environmental rooms

b. Communication
   i. P2, Ethernet, BACnet

c. Systems
   i. Cooling

   ii. Heating
      1. Lab reheat
         a. 2 pumps on VFD’s, DP control, lead/lag program.
      2. Animal reheat
         a. 2 pumps on VFD’s, DP control, lead/lag program.
      3. Glycol Heat Recovery
         a. 2 pumps on VFD’s, DP control, lead/lag program. Bypass valve electronic actuation.

   iii. AHU’s


iv. Exhaust Fans

1. EX-1: Fan on starter. Room temperature control with isolation damper proof.

2. EX-2: Fan on starter. Room temperature control with isolation damper proof.
3. EX-3: Fan on starter. Room temperature control with isolation damper proof.
4. EX-4: Fan on starter. Room temperature control with isolation damper proof.
5. EAHU-1: Heat recovery coil. 2 fans on VFD.
6. EAHU-2: Heat recovery coil. 2 fans on VFD.
7. EAHU-3: Heat recovery coil. 2 fans on VFD.
8. EAHU-4: Heat recovery coil. 2 fans on VFD.
9. EAHU-5: Heat recovery coil. 1 fan on VFD.
10. EAHU-6: Heat recovery coil. 1 fan on VFD.
11. EAHU-7: Heat recovery coil. 1 fan on VFD.

7. Laboratory for Human Reproduction and Reproductive Biology (LHRRB)
   a. BAS Vendor
      i. Siemens
   b. Communication
      i. P2, Ethernet.
   c. Systems
      i. Cooling
      ii. Heating
         1. HX-1: Pneumatic control and actuation. Pump on starter.
      iii. AHU’s


iv. Exhaust Fans

1. No fans indicated.

8. New Research Building (NRB)

a. BAS Vendor

   i. Siemens

b. Communication

   i. P2, Ethernet, BACnet

c. Systems

   i. Cooling


      2. 4600 ton Chiller Plant.

   ii. Heating


iii. AHU’s


20. The following supply fan (SF) are on starters: 2 through 5, 7, 11, 15, 21, 24 through 32.

21. The following supply fans (SF) are on VFD’s: 12, 13, 14, 16 through 20, 22, 23.

22. VU-1: 100% outside air unit. Fan on VFD.

23. VU-2: 100% outside air unit. Fan on VFD.

iv. Exhaust Fans

1. The following fans (EF) are on starters: 2, 3, 4, 5, 6, 11, 26.

2. The following fans (EF) are on VFD’s: 7, 12, 13, 14, 15, 16, 17, 36, 37.

9. Seeley G. Mudd

a. BAS Vendor

   i. Siemens

b. Communication

   i. P2, Ethernet

c. Systems

   i. Cooling

ii. Heating

1. HX-1 FCU: Steam HEX (2) valves. Pneumatic Control and actuation. (2) Pump on starter.

2. HX-2 Building Reheat: Steam HEX (2) valves. Pneumatic Control and actuation. (2) Pump on starter.

3. Glycol Hot Water System: (2) Steam HEX’s each with (2) steam supply valves. Electronic actuation. (2) Pumps on VFD’s.

iii. AHU’s


iv. Exhaust Fans

1. Nothing listed.

10. Tosteson Medical Education Center (TMEC)

   a. BAS Vendor

      i. Siemens

   b. Communication

      i. P2, Ethernet
c. Systems

i. Cooling


2. Building Chilled Water Fire Pump Room: Electronic actuation. VFD has all failed points.

ii. Heating

1. HX-1: Steam HEX. Pneumatic actuation. Outside air temperature control. Pumps on VFD.

2. HX-1: Steam HEX. Pneumatic actuation. Outside air temperature control. Pumps on VFD.


iii. AHU’s


5. SF-1 E MUA-0001. Capacity XX CFM: Fan controlled by vanes. Supplies air to AHU-1, 2, 3 & 4.


iv. Exhaust Fans

1. EXF-2: Fan on VFD controlled by static pressure.

2. EXF-5: Fan on VFD controlled by static pressure.

3. EXF-34: Fan on VFD controlled by static pressure.

11. Vanderbilt Hall

a. BAS Vendor

i. Siemens

b. Communication

i. P2, Ethernet

c. Systems

i. Cooling


2. IT Department Chilled Water System: Pneumatic control and actuation. DP sensors. (2) Pumps on staged VFD’s.

ii. Heating

1. HX-1: Pneumatic actuation. Steam supply (LPS).

2. HX-2: Pneumatic actuation. Steam supply (LPS).

3. HX-3: Pneumatic actuation. Steam supply (LPS).
4. HX-4: Pneumatic actuation. Steam supply (LPS). (2) staged pumps on starters.

   iii. AHU’s


   iv. Exhaust Fans

   1. None listed.

12. Warren Alpert Building
   a. BAS Vendor
      i. Siemens
   b. Communication
      i. P2, Ethernet, BACnet.
   c. Systems
i. Cooling


2. Chilled Water Independent McQuay: Roof McQuay Chillers. (3) pumps on VFD. (3) Mech chillers.


ii. Heating

1. HX-1 Radiation: (2) Steam supply valves pneumatic control. (2) Pumps on starters. Bypass valve electronic actuation.


3. HX-3 Lab Reheat: (2) Steam supply valves pneumatic control. (2) Pumps on starters. Bypass valve pneumatic actuation.


iii. AHU’s


iv. Exhaust Fans


8. Cage Wash: (2) fans on starter.

13. 158 Longwood Avenue

   a. No BAS in building.

14. 160-164 Longwood Avenue

   a. No BAS in building.

15. 180 Longwood Avenue

   a. BAS Vendor

      i. Siemens.

   b. Communication

      i. P2, Ethernet.
c. Systems

i. Cooling

1. AHU Chilled Water: Pneumatic actuation. Pumps on VFD’s with staged control.

2. FCU Chilled Water: Pneumatic actuation. DP. Pumps on VFD’s.

ii. Heating

1. HX-1: Steam HEX. Pneumatic actuation. Outside air temperature controlled. Pumps on VFD’s.

2. HX-2/3 ARC: High pressure steam HEX. Pneumatic actuation. Line TE controlled with reset by outside air temperature. Pumps staged on starters. DP sensor and bypass valve regulate pressure.

iii. AHU’s

1. AHU-1. Capacity XX CFM: 100% Outside air unit, McQuay packaged unit. Preheat (LPS) control not on graphic. Mechanical cooling 2 staged compressors.


iv. Exhaust Fans

1. EF-1: Fan on starter.

2. EF-2: Fan on starter.

3. EF-3: Fan on starter.

16. 641 Huntington Avenue

a. BAS Vendor

i. Siemens

b. Communication
ii. P2, Ethernet.

c. Systems

iii. Cooling

1. Electronic actuation. Outside air temperature enabled. DP control with bypass valve. (2) Pumps on VFD’s.

iv. Heating

1. Steam Boiler System: Electronic actuation. 2 city water feed valves. 2 condensate pumps on starters.


v. AHU’s


2. Fresh Air Damper 201: Outside air / program enabled for FCU 201.

3. Fresh Air Damper 301: Outside air / program enabled for FCU 301.

4. Fresh Air Damper 312: Outside air / program enabled for FCU 312.

5. Fresh Air Damper 401: Outside air / program enabled for FCU 401.

vi. Exhaust Fans

1. EF-2: Fan on starter.

2. EF-3: Fan on starter.

17. School of Dental Medicine

a. BAS Vendor

i. Siemens

b. Communication

i. P2, Ethernet

c. Systems
i. Cooling

1. Chilled Water System: (2) DP sensors. (2) Pumps on VFD’s.

ii. Heating

1. HX-1: Steam HEX. Pneumatic control. Bypass valve. (2) Staged pumps on starters.
2. 2nd Floor Radiation: Electronic mixing valve. (2) Staged pumps on starters.
3. HX-3: Steam HEX. Pneumatic control and actuation. Steam supply valves two position. Isolation valves. (2) pumps on starters.

iii. AHU’s


iv. Exhaust Fans

1. None listed.

18. Research and Education Building (REB)

a. BAS Vendor

i. Siemens

b. Communication

ii. P2, Ethernet, BACnet.

c. Systems

iii. Cooling

iv. Heating

1. HX-1/2: Steam HEX. Electronic actuation. Outside air temperature control. (2) Pumps on VFD’s.


v. AHU’s


4. Stair 1 / 2PO1C Pressure Fans: HVU-1 on starter (?). EX-07 on starter. SF-3 on starter. SF-2 on starter.

vi. Exhaust Fans


3. EF 5 / 6 / 7: Toilet, Stairwell pressure, Smoke vestibules. Fans on starters.

4. EF 8 / 9: 8 basement electric room ventilation on drive temperature control. Penthouse Necropsy table fan on starter.

5. EF 10 / 11 / 12: 10 – Radio Isotope hood on drive. 11 – Histology fume hood on starter. 12 – Penthouse MER on starter.