

APPENDIX 3M
INDICATIVE BMS POINTS LIST

Please see attached.

Part 1 General

1.1 SUMMARY

- .1 Section includes a Indicative minimum input/output points list for the Building Management System (BMS).

1.2 POINTS LIST

| NOTE: This Points List does not necessarily include all required points. Any additional points required to achieve the Sequence of Operation in Section 25 90 01 shall be provided. | | | | | | |
|---|--|-------|-------|--------|--------|----------------|
| UNIT NO. OR LOCATION | TYPE OF POINT | Input | Input | Output | Output | NOTES |
| | | DI | AI | DO | AO | |
| VAV WITH REHEAT COILS | | | | | | |
| T-2xx | Room temp sensor | | X | | | 2 |
| VAV-Czz | VAV –Modulating Damper Actuator | | | | X | 2 |
| CV-Czz-HC | 3-Way Modulating Control Valve-Heating Water | | | | X | 2, CV=1 to 1.2 |
| T-Czz-SA | VAV –Supply Air Temp Sensor (after coils) | | X | | | 2 |
| AF-Cz-AS | VAV-Air Flow Sensor | | X | | | 2 |
| Note: 2xx denotes room number, Czz denotes VAV box number | | | | | | |
| EAV | | | | | | |
| EAV-Czz | EAV-Modulating Damper Actuator | | | | | 2 |
| AF-Cz-AS | EAV Airflow sensor | | X | | | 2 |
| Note: Czz denotes EAV box number | | | | | | |
| HEATING WATER SYSTEMS | | | | | | |
| CV-RP-2xx | Control valve for radiant panel | | | | X | 2, CV=1 to 1.2 |
| Note: 2xx denotes room number | | | | | | |
| HYDRONIC PUMP LOOP | | | | | | |
| VFD--P1 | Pump ON/OFF | | | X | | |
| VFD-P1-S | Pump status | | X | | | |
| VFD-P1-SC | Pump speed control | | | | X | |
| VFD-P-1-A | Pump Amps | X | | | | |
| VFD-P-SF | Pump speed feedback | | X | | | |
| P-1-PS | Pump loop system pressure sensor | X | | | | |
| P-S-T | Loop Water Temp Supply | | X | | | |
| P-R-T | Loop Water Temp Return | | X | | | |

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|---|---|-------|-------|--------|--------|-------------------------------------|
| UNIT NO. OR LOCATION | TYPE OF POINT | Input | Input | Output | Output | NOTES |
| | | DI | AI | DO | AO | |
| P-FM | Loop flow meter | X | | | | |
| P-LG-A | Low glycol alarm | X | | | | |
| HVAC SYSTEMS SUPPLY WITH ENERGY RECOVERY WHEEL | | | | | | |
| VFD-SF1A | Fan ON/OFF | | | X | | |
| VFD-SF1A | Speed Control | | | | X | |
| VFD--SF1A | Status | X | | | | |
| VFD-SF1A | Amps | | X | | | |
| VFD-SF-1A-SF | Speed feedback | | X | | | |
| VFD--SF1B | Fan ON/OFF | | | X | | |
| VFD--SF1B | Speed Control | | | | X | |
| VFD--SF1B | Status | X | | | | |
| VFD-SF1B | Amps | | X | | | |
| VFD-SF1B-SF | Speed feedback | | X | | | |
| D-AH-3-SF | Supply Fan dampers | | | X | | Operate parallel with fan operation |
| DE-SF-3-SF | Supply Fan damper end switches | X | | | | |
| HC-AH-3 | Heating Coil 3 way Control Valve | | | | X | |
| CC-AH-3 | Cooling Coil 3 way Control Valve | | | | X | |
| SH-AH-3 | Humidification control valve | | | | X | Valve by others |
| T-AH-3-SA -HR | Supply Air Temp Sensor | | X | | | Air temp between PHC and HC |
| T-AH-3-SA | Supply Air Temp Sensor | | X | | | |
| H-AH-3-SA | Supply air humidity | | X | | | |
| P-AH-3-S | Supply duct static pressure | | X | | | |
| FP-AH-3 | Freeze protection | X | | | | |
| FS-AH-3 | Filter status Dynamic | X | | | | |
| F-P-S | Pre- filter static drop | | X | | | |
| F-F-S | Final Filter static drop | | X | | | |
| EW-OA-EAT | Energy wheel entering out door air temp | | X | | | |
| EW-OA-LAT | Energy wheel leaving and temp | | X | | | |
| EW-OA-EH | Energy wheel entering RH% | | X | | | |

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|---|--|-------|-------|--------|--------|-------|
| UNIT NO. OR LOCATION | TYPE OF POINT | Input | Input | Output | Output | NOTES |
| | | DI | AI | DO | AO | |
| EW-OA-LH | Energy wheel leaving RH% | | X | | | |
| EW-E-EAT | Energy wheel entering exhaust air temp | | X | | | |
| EW-E-LAT | Energy wheel leaving exhaust air temp | | X | | | |
| EW-VFD-S | Energy wheel speed control | | | | X | |
| EW-VFD-E | Energy wheel enable | | | X | | |
| EW-VFD-A | Energy wheel amps | | X | | | |
| EW-VFD-SF | Energy Wheel speed feedback | | X | | | |
| EW-VFD-GA | Energy wheel general alarm | | X | | | |
| | | | | | | |
| HU | Relative Humidity in space served | | X | | | |
| HVAC EXHUAST SYSTEMS | | | | | | |
| | | | | | | |
| VFD-EF-LC-1 | Fan ON/OFF | | | X | | |
| VFD-EF-LC-1 | Speed Control | | | | X | |
| VFD-EF-LC-1 | Status | X | | | | |
| VFD-EF-LC-1 | Amps | | X | | | |
| VFD-EF-LC-1 | Speed feedback | | X | | | |
| | | | | | | |
| VFD-EF-LC-2 | Fan ON/OFF | | | X | | |
| VFD-EF-LC-2 | Speed Control | | | | X | |
| VFD-EF-LC-2 | Status | X | | | | |
| VFD-EF-LC-2 | Amps | | X | | | |
| VFD-EF-LC-2 | Speed feedback | | X | | | |
| | | | | | | |
| CD-EF-LC-1-I | Control damper LC-1 inlet | | | X | | |
| DE-EF-LC-1-1 | Control damper end switch LC-1 Inlet | X | | | | |
| CD-EF-LC-1-O | Control damper LC-1 outlet | | | X | | |
| DE-EF-LC-1-O | Control damper end switch LC-1 Outlet | X | | | | |
| | | | | | | |
| CD-EF-LC-2-I | Control damper LC-1 inlet | | | X | | |
| DE-EF-LC-2-1 | Control damper end switch LC-1 Inlet | X | | | | |
| CD-EF-LC-2-O | Control damper LC-1 outlet | | | X | | |
| DE-EF-LC-2-O | Control damper end switch LC-1 Outlet | X | | | | |
| | | | | | | |
| FS-EF-LC | Filter pressure drop | | X | | | |
| | | | | | | |
| | | | | | | |
| NEGATIVE PRESSURE ISOLATION ROOM SYSTEMS | | | | | | |
| | | | | | | |
| PM-ANTE | Ante Room pressure monitors | | X | | | |
| PM-PATIENT | Patient room pressure monitors | | X | | | |

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|---|---|-------|-------|--------|--------|-------|
| UNIT NO. OR LOCATION | TYPE OF POINT | Input | Input | Output | Output | NOTES |
| | | DI | AI | DO | AO | |
| A-R | Alarm remote at Nurse stations | | | X | | |
| D-S | Door switches | X | | | | |
| VFD-EF-ISO-1 | Fan ON/OFF | | | X | | |
| VFD-EF-ISO-1 | Speed Control | | | | X | |
| VFD-EF-ISO-1 | Status | X | | | | |
| VFD-EF-ISO-1 | Amps | | X | | | |
| VFD-EF-ISO-1 | Speed Feedback | | X | | | |
| CD1-EF-ISO-1 | Control damper to isolate fan inlet | | | X | | |
| CD-2-EF-ISO-1 | Control damper to isolate fan outlet | | | X | | |
| DE-2-EF-ISO-1 | Damper end switch on inlet | X | | | | |
| DE-2-EF-ISO-1 | Damper end switch on inlet | X | | | | |
| VFD-EF-ISO-2 | Fan ON/OFF | | | X | | |
| VFD-EF-ISO-2 | Speed Control | | | | X | |
| VFD-EF-ISO-2 | Status | X | | | | |
| VFD-EF-ISO-2 | Amps | | X | | | |
| VFD-EF-ISO-2 | Speed feedback | | X | | | |
| CD1-EF-ISO-2 | Control damper to isolate fan inlet | | | X | | |
| CD-2-EF-ISO-2 | Control damper to isolate fan outlet | | | X | | |
| DE-2-EF-ISO-2 | Damper end switch on inlet | X | | | | |
| DE-2-EF-ISO-2 | Damper end switch on inlet | X | | | | |
| CHILLED WATER SYSTEM | | | | | | |
| CH-1 | Chiller 1 On/Off | | | X | | |
| CH-1 | Chiller 1 Status | | X | | X | |
| CH-1 | Chiller 1 kW | | X | | X | |
| CH-1 | Chiller 1 amps | | | | | |
| CH-1 | Chiller 1 flow switch chilled water | X | | | | |
| CH-1 | Chiller 1 flow switch condenser water | X | | | | |
| CH-1 | Chiller 1 chilled water supply temp | | | | X | |
| CH-1 | Chiller 1 chilled water return temp | | | | X | |
| CH-1 | Chiller 1 condenser water leaving temp | | | | X | |
| CH-1 | Chiller 1 condenser water entering temp | | | | X | |
| CH-1 | Chiller 1 Fault | | | | | |
| G-L-4 | Glycol Low level Alarm | | X | | | 4 |
| LEVEL 2 FLUSHING AND PRIMING SYSTEMS | | | | | | |

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|---|---|-------|-------|--------|--------|-------|
| UNIT NO. OR LOCATION | TYPE OF POINT | Input | Input | Output | Output | NOTES |
| | | DI | AI | DO | AO | |
| CV-TP-ISO-1 | Isolation Room S2-242 trap priming 2 position control valve | | | X | | |
| LAB COMPRESSED AIR SYSTEM | | | | | | |
| LA-CA-S-1A | Compressor status | X | | | | |
| LA-CA-S-1B | Compressor status | X | | | | |
| LA-CA-A-1A | Compressor Amps | | X | | | |
| LA-CA-A-1B | Compressor Amps | | X | | | |
| LA-CA-SA-1A | Compressor alarm | | | X | | |
| LA-CA-SA-1B | Compressor alarm | | | X | | |
| LA-CA-SR-A | Simultaneous compressor run alarm | | | X | | |
| LA-CA-DA-1A | Compressed Air Dryer Alarm | | | X | | |
| LA-CA-DA-1B | Compressed Air Dryer Alarm | | | X | | |
| LA-CA-PA-H | Compressed Air System High Pressure Alarm | | | X | | |
| LA-CA-PA-L | Compressed Air System Low Pressure Alarm | | | X | | |
| LA-CA-DP-A | Compressed air dew point alarm | | | X | | |
| HYDRONIC BOILER SYSTEMS | | | | | | |
| B-1 | Boiler 1 Enable | | X | | | |
| B-1 | Boiler 1 Flow switch | | X | | | |
| B-1 | Boiler 1 entering water temp | | | X | | |
| B-1 | Boiler 1 leaving water temp | | | X | | |
| B-1 | Boiler 1 Low water Alarm | X | | | | |
| B-1 | Boiler 1 general alarm | X | | | | |

NOTE 1: The flow switch shall be provided by the Controls Contractor and installed by the piping trade.
The switch shall be wired by the Controls Contractor.

NOTE 2: Refer to drawings and Schedules for quantities.

NOTE 3: New control point in existing system

NOTE 4: Existing control point to be utilised to serve new area

END OF SECTION