

## DESIGN REVIEW / DESIGN BUILD

### Health Care Facilities

**Equipment type:** Central AHU  
**Equipment designation:** SF-1, RAF-1  
**Barcode designation:** 111111  
**Area served:** New radiology wing  
**Equipment location:** Mechanical room

#### DESIGN REVIEW

- |   | [Y]                   | [N]                   |
|---|-----------------------|-----------------------|
| • Obtain department of public health (DPH) checklist from design engineer to know space classification.                               | <input type="radio"/> | <input type="radio"/> |
| • Does the AHU have proper filtration per DPH (30% pre-filter, 90% final filter for inpatient care areas)?                            | <input type="radio"/> | <input type="radio"/> |
| • Are filters in correct locations (pre-filter to be located upstream of coils, final filter to be located downstream of supply fan)? | <input type="radio"/> | <input type="radio"/> |
| • Do the filter frames have gaskets and/or seals?   | <input type="radio"/> | <input type="radio"/> |
| • Spot-check spaces for air change requirements.  | <input type="radio"/> | <input type="radio"/> |
| • Spot-check spaces for pressure relationships.   | <input type="radio"/> | <input type="radio"/> |
| • Is pressure monitoring required?  | <input type="radio"/> | <input type="radio"/> |
| • Any redundancy required at unit level (dual fans, cross connect different AHUs)?  | <input type="radio"/> | <input type="radio"/> |
| • AHU fresh air intakes to be a minimum of 25 ft from any exhaust outlets, including plumbing vents, etc.                             | <input type="radio"/> | <input type="radio"/> |
| • AHU fresh air intakes to be a minimum of 6 ft above grade or 3 ft above roof.   | <input type="radio"/> | <input type="radio"/> |
| • If upstream of final filters, humidifiers to be a minimum of 15 ft upstream.  | <input type="radio"/> | <input type="radio"/> |
| • Ducted return system (no plenum return).  | <input type="radio"/> | <input type="radio"/> |
| • Verify adequate ventilation.  | <input type="radio"/> | <input type="radio"/> |
| • Confirm hot water/chilled water coils are piped correctly.  | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications, and confirm unit space temperature high/low alarm limits are specified.                 | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications, and confirm unit space humidity high/low alarm limits are specified.                    | <input type="radio"/> | <input type="radio"/> |
| • Spot-check for adequate floor and funnel drains.  | <input type="radio"/> | <input type="radio"/> |

#### ELECTRICAL INSPECTION/REQUIREMENTS

- |  | [Y]                   | [N]                   |
|--|-----------------------|-----------------------|
| • What are the new electrical requirements for the new AHU?                        | <input type="radio"/> | <input type="radio"/> |
| • Is there adequate electrical power to meet new electrical load from AHU?         | <input type="radio"/> | <input type="radio"/> |
| • Identify electrical scope of work required with AHU.                             | <input type="radio"/> | <input type="radio"/> |
| • Will emergency power be a requirement for the new AHU?                           | <input type="radio"/> | <input type="radio"/> |
| • Are electrical connections tight and secure?                                     | <input type="radio"/> | <input type="radio"/> |
| • Have the fuses and wire sizes been checked and verified?                         | <input type="radio"/> | <input type="radio"/> |
| • Are there existing electrical code issues that should be addressed at this time? | <input type="radio"/> | <input type="radio"/> |

#### HVAC INSPECTION/REQUIREMENTS

- |   | [Y]                   | [N]                   |
|---|-----------------------|-----------------------|
| • Has the owner approved and signed off on AHU selection?                     | <input type="radio"/> | <input type="radio"/> |
| • Can the AHU be installed with access for maintenance?                       | <input type="radio"/> | <input type="radio"/> |
| • Has pressure testing of pipe distribution been determined in scope of work? | <input type="radio"/> | <input type="radio"/> |
| • Has system flushing been determined in scope of work?                       | <input type="radio"/> | <input type="radio"/> |

- Has condensate drain piping been addressed?
- Has consideration be given to the manufacturer's recommended clearance around equipment for service?

#### GENERAL CONDITIONS CONSIDERATIONS/ REQUIREMENTS

- |   | [Y]                   | [N]                   |
|---|-----------------------|-----------------------|
| • What are the necessary installation and operation permitting requirements?  | <input type="radio"/> | <input type="radio"/> |
| • Will record drawings be submitted electronically along with one paper copy? | <input type="radio"/> | <input type="radio"/> |
| • Will there be an extended warranty on the equipment?                        | <input type="radio"/> | <input type="radio"/> |
| • Will there be a service contract submitted for the new AHU?                 | <input type="radio"/> | <input type="radio"/> |

#### DESIGN REVIEW AND TRICKS OF THE TRADE

- Create an airflow diagram indicating cfm, air changes, and space pressure.
- Confirm there is safe access to the equipment.
- Confirm there is the manufacturers' recommended clearance around equipment.
- Consider whether routine maintenance can be achieved without shutting unit down.
- Attach equipment schedule and design criteria to checklist.
- Attach sequence of operation to checklist.

#### REFERENCE

- *2008 ASHRAE Handbook – Systems and Equipment*, Chapter 1, "HVAC System Analysis and Selection," Chapter 4, "Air Handling and Distribution," and Chapter 21, "Humidifiers"
- *2007 ASHRAE Handbook – Applications*, "Chapter 7, "Health Care Facilities"
- *2005 ASHRAE Handbook – Fundamentals*, Chapter 35, "Duct Design," and Chapter 36, "Pipe Sizing"
- Department of Public Health Guidelines
- *Guidelines for Design & Construction of Health Care Facilities* by the Facilities Guidelines Institute, the AIA Academy of Architecture for Health, and with assistance from the U.S. Department of Health and Human Services
- *Guidelines for Construction and Equipment of Hospital & Medical Facilities*, by American Institute of Architects

#### NOTE

- Refer to equipment manufacturers' literature for additional data and requirements.
- Refer to building owner standards and guidelines for additional criteria. **ES**

If you have any comments, suggestions, or questions regarding this designer checklist, contact Amanda McKew at [amckew@rdkengineers.com](mailto:amckew@rdkengineers.com).

