

DESIGN REVIEW / DESIGN BUILD

Places of Assembly: The School Gymnasium

Equipment type: Two AHUs
Equipment designation: AHU-1, AHU-2
Barcode designation: 111111
Area served: School gymnasium
Equipment location: Rooftop

DESIGN REVIEW

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • Verify there is adequate ventilation. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check air quantity by dividing the cfm by sq ft of area served for cfm/sq ft. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check heating capacity based on dividing the Btuh/sq ft. | <input type="radio"/> | <input type="radio"/> |
| • Create a system flow diagram to assess static pressure sequence of operation and hot water pressure drops. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check fan total static pressure by comparing with rule of thumb: fan total static pressure of __ inch based on dirty filters (prefilter + after filter + final filter). | <input type="radio"/> | <input type="radio"/> |
| • Confirm HW coil is piped correctly per manufacturer's piping requirements. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications and confirm unit space temperature setpoints are specified. | <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 alarm sequences are specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to determine if unit will operate completely through the BAS/BMS. | <input type="radio"/> | <input type="radio"/> |

ELECTRICAL INSPECTION / REQUIREMENTS [Y] [N]

- | | | |
|--|-----------------------|-----------------------|
| • What are the new electrical requirements for the new AHUs? | <input type="radio"/> | <input type="radio"/> |
| • Is there adequate electrical power to meet new electrical load from AHUs? | <input type="radio"/> | <input type="radio"/> |
| • Is there adequate electrical power coming in from the street? | <input type="radio"/> | <input type="radio"/> |
| • Identify electrical scope of work required with new AHUs. | <input type="radio"/> | <input type="radio"/> |
| • Will emergency power be a requirement for the new RTU? | <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"/> |
| • What electrical system components (existing conduits, etc.) will require removal, reinstallation, and/or relocation to accommodate new AHUs? | <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 selection of AHUs been approved and signed off by owner? | <input type="radio"/> | <input type="radio"/> |
| • Can the AHU be installed with access for maintenance? | <input type="radio"/> | <input type="radio"/> |
| • Can the AHU be installed without removing other HVAC, electrical, plumbing, communication, and/or fire protection distribution or equipment? | <input type="radio"/> | <input type="radio"/> |

- | | | |
|--|-----------------------|-----------------------|
| • Has consideration been given to future expansion of system? | <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 be addressed? | <input type="radio"/> | <input type="radio"/> |
| • Has consideration been given to the manufacturer's recommended clearance around equipment for service? | <input type="radio"/> | <input type="radio"/> |

GENERAL CONDITIONS CONSIDERATIONS / REQUIREMENTS

- | | [Y] | [N] |
|---|-----------------------|-----------------------|
| • What are the necessary installation permitting and operation permitting requirements? | <input type="radio"/> | <input type="radio"/> |
| • Have insurance certificates been submitted to building owner? | <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 AHUs? | <input type="radio"/> | <input type="radio"/> |
| • Will RTU O&M website be included along with electronic copy or O&M manual and two paper copies of manual? | <input type="radio"/> | <input type="radio"/> |

DESIGN REVIEW AND TRICKS OF THE TRADE

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

REFERENCE

- *2008 ASHRAE Handbook – HVAC Systems and Equipment*, Chapter 1, "System Analysis & Selection," and Chapter 4, "Air Handling and Distribution."
- *2007 ASHRAE Handbooks – Applications*, Chapter 4, "Places of Assembly."
- *2005 ASHRAE Handbooks – Fundamentals*, Chapter 35, "Duct Design."

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.

