

DESIGN REVIEW / DESIGN BUILD

Retail Space – Split System

Equipment type: Split system
Equipment designation: AHU-1/ACCU-1
Barcode designation: 111111

DESIGN REVIEW

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • Verify adequate outdoor air ventilation. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check air quantity based on cfm/sq ft. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check heating capacity based on Btuh/sq ft. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check cooling capacity by dividing total cfm by 400 = tons, and outside air (OA) cfm by 300 = dehumidification tons. | <input type="radio"/> | <input type="radio"/> |
| • Create system flow diagram to assess static pressure sequence of operation and refrigerant circuit pressure drop. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check fan total static pressure. | <input type="radio"/> | <input type="radio"/> |
| • Confirm coils are piped correctly per manufacturer's piping requirements. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to confirm unit space temperature setpoints are specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to confirm unit space temperature setpoints are specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to confirm unit's occupied/unoccupied schedule is specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to confirm unit space temperature high/low alarm limits are specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to confirm unit remote monitoring and trending are specified for service contractor access. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications to confirm alarms are specified. | <input type="radio"/> | <input type="radio"/> |
| • Has short-circuiting of outdoor air with potential exhaust air been coordinated? | <input type="radio"/> | <input type="radio"/> |

ELECTRICAL INSPECTION/REQUIREMENTS

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • What are the new electrical requirements for the new unit? | <input type="radio"/> | <input type="radio"/> |
| • Is there adequate electrical power to meet new electrical load of all retail spaces? | <input type="radio"/> | <input type="radio"/> |
| • Is there adequate electrical power coming in from the street for all retail units? | <input type="radio"/> | <input type="radio"/> |
| • Identify electrical scope of work required with new retail tenants. | <input type="radio"/> | <input type="radio"/> |
| • Will emergency power be a requirement for the tenants? | <input type="radio"/> | <input type="radio"/> |
| • Are electrical connections tight and secure on both units? | <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 selection of AHU and condensing unit been approved and signed off by owner? | <input type="radio"/> | <input type="radio"/> |
| • Have filters been provided with access for replacement? | <input type="radio"/> | <input type="radio"/> |
| • Has gas pressure been specified and provided? | <input type="radio"/> | <input type="radio"/> |
| • Have fan curves been assessed for optimum performance? | <input type="radio"/> | <input type="radio"/> |
| • Verify that refrigeration piping is complete and correct. | <input type="radio"/> | <input type="radio"/> |

- | | | |
|--|-----------------------|-----------------------|
| • Has the AHU and condensing unit been installed with safe access for maintenance? | <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 ductwork been determined in scope of work? | <input type="radio"/> | <input type="radio"/> |
| • Have pipe pressure test requirements been determined in scope of work? | <input type="radio"/> | <input type="radio"/> |
| • Has condensate drain piping been 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"/> |

PLUMBING REQUIREMENTS

- | | [Y] | [N] |
|---|-----------------------|-----------------------|
| • Have floor drains been coordinated? | <input type="radio"/> | <input type="radio"/> |
| • Has a backflow preventer been considered? | <input type="radio"/> | <input type="radio"/> |
| • Has gas service been coordinated with HVAC equipment? | <input type="radio"/> | <input type="radio"/> |
| • Are gas train vents specified? | <input type="radio"/> | <input type="radio"/> |
| • Has minimum gas pressure requirement been specified? | <input type="radio"/> | <input type="radio"/> |

GENERAL CONSIDERATIONS/REQUIREMENTS

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • What are the necessary installation permitting 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-1 and ACCU-1? | <input type="radio"/> | <input type="radio"/> |
| • Will AHU-1 and ACCU-1 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

- Confirm safe access to the equipment.
- Confirm there will not be short-circuiting of exhaust air into air intakes and/or other building openings.
- Confirm the manufacturer's recommended clearance around equipment.

REFERENCE

- 2004 ASHRAE Handbook – Systems & Equipment, Chapter 1, "HVAC System Analysis & Selection."
- 2007 ASHRAE Handbook – Applications, Chapter 2, "Retail Facilities."
- Refer to the January 2008 "Back2Basics" test for more information (pages 8-9).
- Refer to equipment manufacturers' literature for additional data and requirements. **ES**

If you have any comments, suggestions, or questions regarding this designer checklist, contact Amanda McKew at amckew@rdkengineers.com. This column is meant to provide some basic guidelines for good design. Always consult all necessary codes and resources relevant to each particular project.

