

DESIGN REVIEW / DESIGN-BUILD

Hotels, Motels, and Dormitories

Equipment type: Energy recovery unit
Equipment designation: ERU-1
Barcode designation: 111111
Area served: Dormitory rooms
Equipment location: In equipment room

DESIGN REVIEW

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • Verify adequate ventilation. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check air quantity by cfm/sq ft. | <input type="radio"/> | <input type="radio"/> |
| • Spot-check heating capacity based on Btuh/sq ft. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications and confirm unit inlet and outlet temperature setpoints are specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications and confirm unit inlet and outlet humidity setpoints are specified. | <input type="radio"/> | <input type="radio"/> |
| • Review control drawings and specifications and confirm unit drybulb and wetbulb 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"/> |
| • Check for potential short-circuiting of outdoor air with exhaust air at unit. | <input type="radio"/> | <input type="radio"/> |

ELECTRICAL INSPECTION / REQUIREMENTS

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • What are the new electrical requirements for the new ERU, RTU-1, etc.? | <input type="radio"/> | <input type="radio"/> |
| • Is there adequate electrical power to meet new electrical load from the new equipment? | <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 HVAC equipment. | <input type="radio"/> | <input type="radio"/> |
| • Will emergency power be a requirement for the building major mechanical systems? | <input type="radio"/> | <input type="radio"/> |
| • Are electrical connections tight and secure? | <input type="radio"/> | <input type="radio"/> |
| • Have the fuses/circuit 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 HVAC units? | <input type="radio"/> | <input type="radio"/> |
| • Are there existing electrical code issues that should be address at this time? | <input type="radio"/> | <input type="radio"/> |

HVAC INSPECTION / REQUIREMENTS

- | | [Y] | [N] |
|---|-----------------------|-----------------------|
| • Has the selection of fancoils, boiler, energy recovery and rooftop unit, pumps, and air cooled chiller been approved and signed off by owner? | <input type="radio"/> | <input type="radio"/> |
| • Has the minimum gas pressure been determined for the heating? | <input type="radio"/> | <input type="radio"/> |
| • Verify that gas piping is complete and correct. | <input type="radio"/> | <input type="radio"/> |
| • Can the HVAC equipment be installed with access for maintenance? | <input type="radio"/> | <input type="radio"/> |

- Can the fancoils, boiler, energy recovery and rooftop unit, pumps, and air cooled chiller be installed without removing other HVAC, electrical, plumbing, communication, and/or fire protection distribution or equipment?
- Has consideration been given to future expansion of system?
- Has pressure testing of pipe distribution been determined in scope of work?
- Has system flushing been determined in scope of work?
- Has condensate drain piping be addressed?
- Has ERU-1 freeze-stat protection been considered?
- Has consideration been given to the manufacturer's recommended clearance around equipment for service?

GENERAL CONDITIONS CONSIDERATIONS / REQUIREMENTS

- | | [Y] | [N] |
|--|-----------------------|-----------------------|
| • Have the necessary installation and operating permits been acquired? | <input type="radio"/> | <input type="radio"/> |
| • Have the insurance certificates been submitted to building owner? | <input type="radio"/> | <input type="radio"/> |
| • Will there be an extended warranty on the equipment? | <input type="radio"/> | <input type="radio"/> |

DESIGN REVIEW AND TRICKS OF THE TRADE

- Create an airflow diagram indicating cfm, pressure drops, and velocities for design, TAB, commissioning, and record documents for future retrofit needs.
- Consider 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 – HVAC Systems and Equipment*, Chapter 1, "System Analysis and Selection," and Chapter 5, "In Room Terminal Systems."
- *2007 ASHRAE Handbook – Applications*, Chapter 5 "Hotels, Motels and Dormitories."
- *2005 ASHRAE Handbook – Fundamentals*, Chapter 35, "Duct Design," and Chapter 36, "Pipe Sizing."

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.

