

DESIGN REVIEW / DESIGN BUILD MDF Room Packaged HVAC Unit/System

Job number:

Area served: Main distribution frame (MDF) room

Equipment type: Packaged HVAC unit

Equipment Designation: CACU-1

Barcode designation: 11111

Equipment location: In occupied space

DESIGN REVIEW

[Y] [N]

- Verify adequate equipment room ventilation.
- Spot-check air quantity by determining cfm/sq ft.
- Spot-check heating capacity by determining Btuh/sq ft.
- Spot-check cooling capacity by dividing total cfm by 400 = tons and OA cfm by 300 for dehumidification tons.
- If underfloor air system is utilized, confirm there are enough perforated tiles in the floor for adequate airflow.
- Create system flow diagram to assess static pressure sequence of operation, condenser water, and/or chilled water pressure drops.
- Spot-check fan total static pressure by comparing with fan total static pressure of inch based on dirty filters (prefilter + after filter + final filter).
- Review if unit is chilled water, DX condenser water with DX, or dry cooler-based.
- Confirm coils are piped correctly per manufacturer's piping requirements.
- Review specifications to confirm space humidity/temperature setpoints are specified and within high/low alarm limits.
- Review specifications and confirm alarm delay duration is specified 0 to 255 seconds.
- Review specifications to determine if unit or floor leak detection was specified.
- Review control drawings and specifications to determine if unit will be tied to an AC or universal panel.
- Review control drawings and specifications to determine if unit will operate as a standalone unit, on a network or BAS/BMS.

ELECTRICAL INSPECTION/REQUIREMENTS

[Y] [N]

- What are the new electrical requirements for the new CACU?
- Is there adequate electrical power to meet new electrical load from CACU?
- Will emergency power be a requirement for the new CACU?
- Are electrical connections tight and secure?
- Have the fuses and wire sizes been checked and verified?
- What electrical system components (existing conduits, light fixtures, panels, etc.) will require removal, reinstallation,

- and/or relocation?
- Are there existing electrical code issues that should be address at this time?

HVAC INSPECTION/REQUIREMENTS

[Y] [N]

- Has selection of CACU been approved and signed off by owner?
- Have cold/hot water management system been completed in an automatic control-functional performance action /reaction matrix?
- Have gpm-pressure drop-velocity been noted on distribution points of the water piping flow diagrams?
- Have pump curves been assessed for optimum performance?
- Verify that water piping is complete and correct
- Can the CACU be installed with access for maintenance?
- Has consideration been given to future expansion of system?
- Has system flushing been determined in scope of work?
- Has condensate drain piping be addressed?
- Has consideration be given to the manufacturers' recommended clearance around equipment for service?
- Has hot corridor / cold corridor been considered?

PLUMBING REQUIREMENTS

[Y] [N]

- Have floor drains been coordinated?
- Have backflow preventors been considered?
- Has a water filter been considered for city water to humidifier?

GENERAL CONSIDERATIONS/REQUIREMENTS

[Y] [N]

- What are the necessary installation permitting and operation permitting requirements?
- Will record drawings be submitted electronically along with one paper copy?
- Will there be an extended warranty on the equipment?
- Will there be a service contract submitted for the new CACU?
- Will CACU O&M website be included along with electronic copy or O&M manual and two paper copies of manual?

If you have any comments, suggestions, or questions regarding this designer checklist, contact Amanda McKew at amckew@rdken-gineers.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.

