

SOW for MAC Controlled Contamination Area (CCA)

I. Purpose:

1. Support Mississippi State University's (MSU) effort to stand up the Mississippi Advanced Composites Training Center at the East Mississippi Community College Community (EMCC) in Columbus, MS.
2. Provide for the design and manufacture of a prefabricated Controlled Contamination Area (CCA) Room within the facility.

II. Information Provided by East Mississippi Community College/Mississippi State University:

1. MAC CCA CAD Data.zip
 - a. Note: Dimensions shown are basic dimensions and should be considered reference only. Vendors may adjust placement of doors, windows, outlets, etc. as needed.

III. Work Scope:

1. CCA room vendor shall design/fabricate a prefabricated structure for a Controlled Contamination Area. This is not intended to be a turn-key project.
2. The CCA room shall be designed and prefabricated to be capable of meeting ISO 14644 Class 7 Standard at 2000 particles per cubic foot at 5 micron. 5 micron shall be the smallest particulate certified.
3. This project is in a Seismic Design category "D" and Use group of "I". However, there is not a seismic construction requirement for the CCA room.
4. Vendor shall engineer, design, provide and install the necessary walls, ceilings, windows, doors, HVAC system connections, fire protection system and connections, lighting, power receptacles and single-point 480VAC power connection for the CCA room.
5. The CCA room will be installed inside an existing conditioned facility. The facility conditions are 72°F +/- 5°F with <65% RH.
6. Air handling connections shall be located on top of the CCA room structure. Vendor shall engineer, design, supply and install air handlers/fans and ductwork to the clean room. EMCC will provide HVAC system and installation in facility. Vendor to interface with EMCC facilities personnel to determine interface connection to HVAC.
7. The CCA room must be capable of maintaining the following environmental conditions:
 - a. Temperature shall be between 60 and 80°F, target set-point temperature is 70°F +/-5°F.
 - b. Relative humidity shall be capable of being maintained between 20-60% RH year around.

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- c. Airborne particulate matter shall be capable of being controlled to comply with the requirements of ISO Class 7 not to exceed 2000 particles per cubic foot at 5 microns.
 - d. A positive pressure shall be maintained between the CCA and the classroom (.05 inch WC minimum differential pressure from CCA room area to the ambient space.). When entryways are open, the blower capacity shall be sufficient to provide outward airflow.
8. The CCA room must incorporate the following design features:
 - a. The walls and ceilings shall be covered, treated or painted with a high gloss or semi-gloss enamel surface. The walls, ceiling and service plumbing shall consist of, or be covered by, a material that is nonabsorbent and that will not flake, peel, chip, delaminate, or generate debris as a result of standard manufacturing and/or maintenance operations. Light colored, high gloss or semi-gloss coatings are recommended.
 - b. All components used in the construction of the CCA Enclosures should meet FM requirements ie; walls, doors, ceiling, etc.
 - c. Wall and ceiling panels shall be insulated – Insulating materials must not contain Polyurethane.
 - d. Supply air diffusers must be installed on all air inlets to reduce direct drafts. Return air grills shall be installed at all return air penetration into the room. Filters should be specified as commercial disposable or re-cleanable type filters, 25 to 30% efficiency which meets or exceeds current ASHRAE 52.2 standard MERV 7.
 - e. Lighting fixtures shall be equipped with covers.
 - f. All doors shall be airtight when closed.
 - g. Existing classroom coated concrete flooring will be utilized.
9. CCA room vendor shall be responsible for providing the following, including installation, or onsite construction:
 - a. All walls, ceiling and windows per drawing. Internal ceiling height is 14 foot. Windows are preferred to be single pane with 3/16" tempered safety glass. Qty. 1 additional panels of ceiling and wall material should be provided for any patches necessary for additional integration of utilities.
 - b. It is desired to maximize window size on the front and internal classroom sides of the CCA to maximize visibility into the CCA from outside the classroom for aesthetic reasons.
 - c. Side Door (10 foot height) shall be a fast acting roll-up style, with push button activation. (Rytec Fast Seal or equivalent).
 - d. Front door should be a glass or equivalent standard man door. It is desired that this door be clear to allow for full visibility into the CCA.
 - e. Flexible connections are required on all process piping, duct and conduit from HVAC to CCA.
 - f. Vendor shall provide one set of additional internal air filters.

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- g. Lighting should maintain a minimum of 80 foot-candles lighting at 32 inches AFF and be evenly maintained throughout the room.
 - h. Electrical – 480VAC point of connection to be provided. EMCC to provide 480VAC 3-phase 4 wire connection from building systems to disconnect/panel provided by vendor for all cleanroom systems. Vendor to provide 240/120VAC electrical disconnect panel on external wall of the CCA to supply internal wall outlets, roll up door, and interior lighting circuits.
 - i. Wall outlets shall have 120 VAC, 20 Amp AC duplex outlets every 8 ft minimum. Electrical panels and disconnects to be provided as required by code to be part of this scope of work. All electrical components shall be UL Listed and conform to the National Electric Code.
 - j. Temperature, humidity, and particle monitoring to be provided by MSU/EMCC and is not part of this specification.
10. The design of the CCA should be in accordance with the International Building Code, current revision.

IV. Required Completion Date:

- 1. Please provide a lead-time on your bid document. Also note the shorter lead-time will get greater consideration.

V. Process Warranty:

- 2. Supplier should provide a process warranty for the CCA room to include at a 1-year warranty on the materials for the room.

VII. Documentation:

- 1. Drawings: Submit a copy of approval drawings to Owner. At least one (1) design review will be required prior to the start of fabrication. As-Built drawings to be provided in electronic format at project completion.
- 2. Maintenance manuals: Maintenance and operating manuals for any subcomponents of the structure shall be supplied.