ASC 2021 - MECHANICAL PRE-PROBLEM STATEMENT

The Northern California Mechanical Contractors Association and Southland Industries (a Joint Committee of Mechanical Professionals) welcome competitors to the 2021 Associated Schools of Construction (ASC) Open Competition Mechanical Problem. This is a great opportunity for students, faculty, and industry to come together in a tremendous learning environment. The Mechanical Problem will provide students with an overview of the commercial construction process, and an insight into the building systems that bring it to life. We are excited to have you join us here in February and share in this experience.

Once your School has signed up for the competition and you have determined your final team, please forward a copy of your individual resumes and a team photo that identifies each participant to Greg Hamm via email at GHamm@southlandind.com. Please provide these by January 15, 2021.

Problem Description:

The objective of this problem is to enhance the student's experience in the everyday occurrences of the mechanical industry. This year's problem will expose students to tasks and conditions that a mechanical contractor's project team would typically experience from day to day.

The scenario for this year's problem will have student competition teams and the judges working for the same company. Student teams will be representing the PEs/PMs on a design build core & shell project that is currently already in the middle of construction. Judges will represent the upper management in the company. Upper management has requested to have a project update meeting addressing current financial status, revenue projections, budget updates, construction progress, risk analysis, and mitigation plans.

The project scope of work and its primary systems are as follows:

- Major Mechanical Equipment & Installation
  - Chillers
  - Cooling Towers
  - Air Handling Units
  - Boilers
  - Pumps
  - Fans
• HVAC Wet & Dry Side Systems including:
  o Heating Hot Water Supply & Return
  o Closed Condenser Water
  o Open Condenser Water
  o Chilled Water Supply & Return
  o Supply & Return Duct
  o Exhaust Duct

To help prepare for this year’s problem we encourage teams to familiarize themselves with the following:

• **Document Control**: RFIs, Submittals, Bulletins and Procurement Logs
• **Change Estimates**: Labor rates (standard time, overtime, shifts), Identifying changes, Takeoffs, Pricing
• **Progress Payments**: Billings, SOVs/Budgets, Cost Codes, Cost Projections, and Cash Flow
• **Construction Management / Operations**: Contracts, Drawings & Specifications, Labor Tracking, Schedule Activities, Site Logistics, and Coordination between Subs & GC.

The deliverables this year will be specific documentation that your upper management will request for the status meeting (presentation) in order to get them up to speed on where the project is currently and where it is going. Specifics on what those deliverables are and how they should be organized will be given on the day of the competition along with all standard company forms & logs, and the project contract documents. At a minimum, teams will need to utilize Microsoft Word, Excel, and BlueBeam Revu.

The presentation will be formatted around a meeting with upper management (judges panel). Be prepared to discuss the deliverables in detail. Remember, we are working for the same company so keep introductions and background info to a minimum. Keep the focus on your solutions to the specific project challenges

**Judging Criteria:**

The successful team solution will be based on the team’s understanding of the construction process, specifics of the project, how contract documents relate to each other, ability to recognize and mitigate potential impacts, ability to follow contract document requirements, and project presentation.

Each team will be scored on the following items:

• **Financial Analysis**: Current status & forecast projection accuracy
• **Risk Analysis**: Identification of existing or future impacts, and proposed mitigations
• **Quality Management**: Understanding and adherence to contract documents
• **Innovation & Project Approach
• **Understanding of Systems & Equipment
• **Project Schedule and Site Logistics:** Scheduled activities, logic of schedule, coordination between trades and presentation of scheduled activities.

• **Overall Deliverable Appearance and Completeness**

• **Team Oral Presentation:** Team participation, eye contact, public speaking ability and information presented. Judging will place particular emphasis on the information presented on the specific aspects of the problem and the level of confidence you show in your understanding of the project.

**Mechanical Rules:**

The NCMCA/Southland Joint Committee will be enforcing the following rules: If any team should be cited for breaking any of the rules, the Joint Committee reserves the right to deduct points or disqualify said team. The Joint Committee also follows the Competition Rules as stated on the ASC website: www.asc67.org.

1. Once the competition begins, the six students are not allowed the use of any outside information.

2. No person besides the stated six student participants shall be allowed beyond the threshold of the door of the designated work room at any time during the competition (or virtual meeting). The competition begins when the problem statement is handed out and does not end until the team's presentation is over.

3. Once a presentation has begun, no person shall be allowed to enter the presentation room (or virtual presentation).

4. The Joint Committee discourages the use of "canned" or fluff materials in both deliverables and presentations.

The NCMCA/Southland Joint Committee expects the best of all our Student Team Competitors. Ethics, Creativity, and Professionalism are extremely important to our mechanical industry and the success of the nation's mechanical industry as a whole. We are looking for future industry leaders through this competition.

Good luck, and we look forward to meeting each of you at the competition.

Sincerely,

The 2021 NCMCA/Southland Joint Committee

General questions please direct via e-mail to Greg Hamm at GHamm@southlandind.com