

BREADTH PROPOSALS

The redesign of the mechanical systems of the supply center directly affects other building systems. Integrating the changes to the HVAC systems with alterations to the structural system is the goal of this part of the proposal. The breadth studies will include structural work as well as construction management work. The overall idea is to fully incorporate all areas that play a direct or indirect factor in the mechanical systems redesign. Improving the other systems in terms of first cost is also an important goal of the project.

STRUCTURAL PROPOSAL

The reduction in the required amount of AHUs due to the proposed dedicated systems opens up other opportunities. Currently there are 14 air handling units total and they are all located in the elevated mechanical mezzanine rooms. Since the supply center is a single story 110,000 square foot building, there is plenty of open roof space. Reducing the amount of air handling units makes it possible to place the equipment on the roof. The smaller number of units results in each of them being fully accessible on the roof. However, a significant dead load and live load will occur from placing the units on the roof that affects the structural system. The structural breadth is to study the affect of relocating the AHUs and make the appropriate changes to the structural system. The cost difference, if any, will needed justification. Comparing the potential additional cost of increasing structural members to the potential cost saving from the mechanical redesign will help prove, overall, if the new systems are economically feasible.

CONSTRUCTION PROPOSAL

Replacing eight AHUs with fewer dedicated outdoor air units opens up the opportunity to move all of the AHUs to the roof and eliminate the elevated mechanical mezzanine rooms. However, as previously stated, this move affects the structural system and also affects the overall building cost. The construction breadth of the proposal will examine the cost of constructing the steel mezzanine rooms and compare it to the cost of increasing the structural members that is needed to support the added dead loads. The cost of outdoor ready AHUs are also more expensive than indoor AHUs. The cost difference must also be justified by the elimination of the mezzanine rooms. The construction breadth will also help to further justify the recommended mechanical system redesign with detailed cost estimates.