

Mechanical Existing Conditions Report

EXECUTIVE SUMMARY

The Milton Hershey School New Supply Center is a very wide and long single story 110,000 square foot building. Analyzing the existing mechanical systems proves that the design is very practical and energy conscience for this application. However, there are specific features to the HVAC system that have potential for improvements. This document examines the existing mechanical systems and provides in site to areas that need addressed for possible re-design or modifications.

The mechanical design engineer for the supply center is H.F. Lenz Company. The engineers set design objectives based on cost and energy saving criteria. Designing the mechanical systems to reach the overall project goal of LEED Certification is the basis of the majority of the engineering tactics used. Integration of other building systems with the HVAC systems is also another very important project goal. Incorporating a condensate water system for rejection of the heat produced from the supply center's large walk-in freezers with the chilled water plant helps reduce the amount of sensible cooling required in those spaces. Using the same boiler plant for HVAC heating for service hot water heating and steam production for process loads also is a major project goal.

Carefully planed control logic is also a goal of the project and results in optimal energy efficiency for the HVAC system. Using temperature, humidity, enthalpy, and flow measuring devices with direct digital controls (DDC) as the energy management control system, the HVAC system proves to not only save energy, but also meet the most basic requirement of producing comfortable indoor environments.

Even with proper controlling of the HVAC system, alterations or re-designs of the HVAC system may provide cost and energy saving benefits. Areas of the mechanical systems, such as the heat rejection system for the walk-in freezers, need addressed. Incorporating heat recovery systems that will not waste building generated heat has the potential to reduce operating cost. Reevaluating the ventilation air systems may mean a significant reduction in the amount of air handling units required for the supply center. First cost savings will result from less material, but energy savings are also a possibility when dedicated outdoor air units are used in replacement of the designed VAV systems. Overall, the design HVAC system is adequate and energy conscience, but there is potential for improvements.