

TECHNICAL REPORT THREE
MECHANICAL SYSTEMS EXISTING CONDITIONS REPORT



**DEFENSE INFORMATION SYSTEMS AGENCY
HEADQUARTERS FACILITY
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MECHANICAL OPTION

ADVISOR: DR. TREADO

EXECUTIVE SUMMARY

The objective of this report is to summarize the designed mechanical systems currently being installed in the DISA Headquarters Facility. Design objectives and operation specific information was utilized to attain a better understanding of the design criterion use of this facility. Throughout this report calculations and tables from past technical reports have been included in order to observe how the various systems affect one another as well as the system as a whole.

This system design was a response to the owner's RFP, and addresses all of the owner's wants and needs. The majority of the facility is office space, and the mechanical design was based upon there. The facility also has diverse spaces such as labs, wellness center, cafeteria which present unique design criterion. Design conditions, equipment schedules, schematics and detailed descriptions have been provided to help understand the systems in the DISA HQ.

The DISA HQ mechanical system first cost was \$50,000,000.00, or \$46.73/SF. Actual utility/energy consumptions are not yet known due to the fact that this project is still under construction. Therefore, all energy calculations were found by utilizing Trane TRACE energy modeling software.

A critique of the system has been provided which evaluates the system to be sufficient and logical based on the design objectives. There have been some discrepancies found in the heating, cooling, & ventilation loads, however these seem to be a result of the precision of the Trace model.