Executive Summary

Defense Media Activity is as the new media center for the Army Corps of Engineers. This building has a large load contributed by the data center as well as high internal loads from specialty equipment in the editing suites, television studios, and media centers. This facility operates 24 hours a day and requires a redundant design in order accommodate the needs of the owner.

To condition the spaces within the DMA Building, a Variable Air Volume system has been selected by the engineer. This type of system is conventional in design and is fairly easy to install and maintain.

The object of this proposal is to minimize energy consumption of the building and make it less expensive to operate. Doing this will in effect reduce the carbon footprint of the building. In order to optimize the building's energy use, several systems have been proposed as an alternative. These systems are; Combined Heat and Power, Thermal Energy Storage, and Dedicated Outdoor Air Systems.

Implementing any one of the three alternatives will require high integration within the building systems. Each of the systems will have to be evaluated to check for feasibility and operability within the DMA Building. The best option will be selected and presented based on the goals of the project which are reducing energy consumption as well as minimizing operational costs.

In order to analyze these systems, several programs will have to be used. These programs will include Energy Modeling Software, Engineering Equation Solver, and Microsoft Excel. These tools are essential in doing the analysis required for selecting alternative systems.