

## EXECUTIVE SUMMARY

The objective of Technical Report II is to determine the results of an entire building block load energy analysis of the Maryland State Highway Administration (SHA) Headquarters – 707 Building. Trane TRACE 700 Version 6.2 was utilized to calculate the office building load data, as well as the yearly energy consumption, of the 707 building. TRACE inputs were selected from the building design specifications and drawings as well as additional information provided by the design engineer.

The generated block load energy model for the 707 building calculated the total annual energy consumption for cooling and heating loads to be 44.305 MBtu/year. The total load calculated by the design engineer was 42.232 MBtu/year, which indicates that the load energy consumptions are within 4.9% of each other. The annual utility cost that was totaled for the consumed electricity and natural gas was \$200,808 or 1.17 \$/sf. In order to provide a redesigned mechanical system with reduced energy consumptions, the current features of the building's utility usage must be analyzed.