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UNITED STATES GENERAL ACCOUNTING OFFICE  
REGIONAL OFFICE  
9226 FEDERAL BUILDING, SIXTH AND ARCH STREETS  
PHILADELPHIA, PENNSYLVANIA 19106

May 15, 1975

Mr. John Galuardi  
Regional Administrator (3A)  
General Services Administration  
Regional Office Building  
7th and D Streets, S.W.  
Washington, D.C. 20407

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Dear Mr. Galuardi:

The General Accounting Office is conducting a nationwide review of the Government's energy reduction effort at selected field activities to identify opportunities to improve energy conservation practices. The purpose of this letter is to advise you of the results of our work at the Federal Building, 5000 Wissahickon Avenue, Philadelphia, Pennsylvania. This building is owned by the General Services Administration (GSA) and operated by its Germantown Field Office. The Veterans Administration Center is the prime tenant.

Energy Conservation Measures

Energy conservation measures instituted at this building by GSA include:

- Removal of fluorescent tubes from light fixtures to reduce energy use.
- Adjustment of janitorial service hours to have most of the work performed during regular business hours.
- Reduction of steam pressure from natural gas and oil fired boilers thus allowing the boilers to operate on a lower flame and burn less fuel.
- Turning off electrically operated equipment such as air handlers when they are not needed.

In addition to the measures above, an area energy monitoring team has been established which periodically inspects the energy conservation activities in GSA buildings in Philadelphia including the one in our survey. As explained later, we believe these inspections can be improved.

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### Energy Consumption

The table below compares energy consumption in fiscal years 1974 and 1975 with corresponding quarters in 1973, the base year. Electricity was compared in terms of thousands of kilowatt hours. Natural gas and oil, both of which are used for heating, were converted to British Thermal Units and combined for comparison purposes.

<u>Fiscal quarter</u>	Percent change over same quarter in fiscal year 1973 (decrease)		
	<u>Fiscal year 1974</u>	<u>Natural gas and oil</u>	<u>Fiscal year 1975</u>
<u>Electricity</u>		<u>Natural gas and oil</u>	
1	( 6.1)	( 1.8)	8.0
2	(21.6)	(24.1)	(13.3)
3	(21.5)	3.4	
4	(22.2)	(12.0)	

As can be seen, the use of electricity has decreased significantly except in the first quarter of 1975. According to the operating engineers at the building, the increase in that quarter was due to the need to cool the building around the clock until separate air conditioning units could be installed for a new computer facility. Natural gas and oil consumption was erratic and may be partly due to weather variations.

### Need for an Engineering Survey

Temperature conditions at the facility indicate the need for an engineering survey to identify what is needed for the building to be heated in a more energy efficient manner.

During our review, we took temperature readings at selected locations throughout the facility and found they ranged from 73 to 81 degrees with an average of 77. Similarly, daily temperature records kept by GSA show high temperatures during the heating season months of fiscal years 1974 and 1975. These temperatures greatly exceeded the 65 to 68 degree range which GSA Federal Management Circular 74-1 says temperature control devices should be set to maintain.

From discussions with the operating engineers at the building, we found that achieving reduced temperatures without complaints of objectionable cold or hot spots is presently difficult for two basic reasons.

First, the bulk of the space is not compartmented with floor to ceiling walls. It was originally warehouse type space which was converted to primarily office use. The centralized climate control system, which combines heating, cooling and ventilation, is designed to flow air through the vast open spaces in the building. The massive movement of air creates temperature variations which are frequently objectionable to the employees. Consequently, a consistent temperature at all points is not achieved and a relatively high average temperature is needed to offset objectionable cold spots.

Second, the system's thermostats are apparently factory preset to maintain a temperature of 74 degrees and can only be adjusted 3 degrees either way. Further reduction of temperatures on the down side could be achieved by introducing more cold outside air but this would aggravate the problem of complaints about drafts.

The conditions described above indicate the need for an engineering survey of the building and its climate control system. The survey should identify what modifications or adjustments are necessary to achieve the GSA prescribed lower heating temperatures and keep them reasonably uniform.

We suggested that arrangements be made for a survey as soon as possible so that necessary changes can be made in time for the next heating season. The Manager of the Germantown Field Office agreed and said he would request a survey through appropriate channels.

Need to Actually Test  
Temperatures During Building  
Conservation Inspections

Actual testing of the temperatures in the building during inspections by the GSA energy conservation monitor would have disclosed the high temperatures. Our review of reports covering inspections during February and March 1975 gave no indication that actual temperature readings were taken. For example, the report of the February inspection simply stated that all thermostats had been cut back to 68 degrees. The March report did not answer the heating level portion of the inspection form. Inspection reports for other buildings in Philadelphia showed that actual temperature readings were not always taken.

It should be emphasized to the inspectors that effective monitoring of heating levels requires taking temperature readings. In this way, excessive temperature levels will be more readily detected and corrective action taken. The Coordinator of Energy Conservation for the Philadelphia Field Offices agreed and said he would issue appropriate instructions.

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We appreciate the cooperation and assistance given to us by the GSA staff at the building and in the field offices. Your comments on the matters discussed in this letter would be appreciated. For his information a copy of this letter is being sent to Mr. S. W. Melidosian, Director, Veterans Administration Center, Philadelphia, Pennsylvania.

Sincerely yours,

*Francis X. Fee.*

*for*  
Allen R. Voss  
Regional Manager