

Memo

To: Board of Education
From: David Nardone
CC: Dr. Conway
Date: 6/19/2021
Re: DHS Heat Update

Problem

The heating system at DHS was installed in 1967. It is an electric resistance heat system. As the cost of electricity has risen the cost of running the system has increased. Given that the system is nearly 50 years old and well beyond its usable life span it has become unreliable and expensive to maintain. This is compounded by difficulty in obtaining parts for a system that is no longer made. This system operates by having one unit ventilator or heater in every classroom and office. These are controlled by pneumatic valves which require significant maintenance to keep functioning. These valves are especially difficult to repair. The only solution to reduce electric costs as well as maintenance and repair costs is to install a new heating system.

What needs to be done

To correct this problem we will install a Variable Freon System, also known as a heat pump. Each classroom and office would have an individual unit installed. The auditorium, cafeteria, gym and the larger hallways would require natural gas fired rooftop units. By updating this system we will be able to comply with State-mandated fresh air standards which require us to bring in 420 cubic feet of outside air into every classroom on a daily basis. (This is an estimate based on average classroom size). This will be accomplished by the installation of a fresh air intake system. Lastly we will also have the opportunity to add air conditioning to the building which will improve the comfort level in the building by lowering the temperature and humidity on warm days.

Financing

We are currently exploring paying for this project using State Department of Administrative Services funding as well as rebates from United Illuminating. We further have the option of using a performance contract to pay out of the savings. At this point UI is calculating the potential savings and will hopefully have more information for us in the next 30-60 days.

Solar

Another option which could reduce costs would be adding solar panels to the roofs of our buildings. Solar panels would create electricity for the school but also operate off a net-metering system which means that excess electricity could be sold back to United Illuminating. DHS and Bradley are prime locations for installation of solar panels as the configuration of their roofs is ideal for the panels.

Respectfully submitted by

David M. Nardone, Facilities Manager.