

## **J.J. FINLEY ELEMENTARY AIR CONDITIONING REPLACEMENT PROJECT ENERGY CONSERVATION FEATURES**

The renovation of the heating, ventilating, air-conditioning, and lighting systems for Buildings 1, 3, and 4 at J.J. Finley Elementary was completed in December 2007. This represents 23 classrooms, the administration area, and the media center.

The scope of this project included the replacement of all mechanical equipment, ductwork, ceilings and lighting, as well as the installation of new computer network cabling. Several energy conservation features have been incorporated into the new mechanical and electrical systems, including a comprehensive and expandable building energy management system that monitors the mechanical systems.



The mechanical equipment for this project was selected based on its ability to provide an energy efficient climate control system. Current ventilation standards make dehumidification a primary consideration. The cooling/dehumidification system is an air-cooled chilled water system with variable air volume. This system is the most reliable and cost effective to provide flexible cooling and superior dehumidification.

The air-cooled chilled water system consists of the energy efficient chiller and dual role air handlers which provide filtered conditioned air to each space. The conditioning of 100% outside fresh air uses the chilled water more effectively. The chiller utilizes an environmentally friendly CFC-free refrigerant.

The system has three occupancy settings, including occupied, low occupancy, and unoccupied. During occupied times, the system is set for 74° cooling and 68° heating with 100% outside air enabled. During low occupancy times, the same temperatures are kept but the 100% outside air is turned off. During unoccupied times, the temperatures are set at 78° for cooling and 64° for heating.

The relocation of the chiller from the central courtyard to a more remote location provides a better learning environment by placing this source of noise away from the classrooms.

A system wide building energy management system has been installed which operates continuously and directs all of the system components to operate together in the most energy efficient manner.

The new lighting system uses low energy fluorescent fixtures which are controlled by motion sensors. The sensors turn the lights on when the room is occupied and off when unoccupied.

All of the energy saving features incorporated into this project are designed to reduce operating costs, protect the environment, and provide a better learning environment.