

Montgomery Village Hall Sustainable Design Elements

The architectural elements and finishes include the following items. The Lees Carpet in the work and office areas passes all Carpet and Rug Institute certifications for low VOC emissions. The EcoSurface recycled rubber floor is in the Lunch Room and the Multi-Purpose Room. The building was designed with the Armstrong Optima Ceiling System. It has 40% recycled content.

The regional materials in the building include Belden brick and Ludowici clay roof tile that was manufactured in Ohio. The interior and exterior Kasota stone was quarried in Minnesota. The cast stone was manufactured in Illinois. The high-performance air-barrier wall cavity system was designed to help minimize air leakage and improve mechanical system performance.

The furniture and office systems were chosen with sustainable design elements in mind. Herman Miller Vivo Interiors were chosen for all the workstations and private office furniture. It is up to 69% recyclable at the end of its useful life and it is comprised of 36% recycled materials. The Steelcase Leap Chairs are for the workstations and the private offices and is up to 98% recyclable by weight. The Vecta Kart Chairs to be used in the Multi-Purpose Room is 100% recyclable and made up of at 40% recycled material.

The mechanical systems have many elements of sustainable design. Energy recovery wheels have been installed on the air handling units to capture the energy from tempered return/exhaust airstream and transfer it to the un-tempered outside airstream. The building can be scheduled to set back the temperatures during unoccupied periods and avoid wasting energy by tempering an unoccupied building.

The variable air volume handling systems are designed to decrease heating or cooling supply air when heating or cooling is not needed. When a temperature sensor determines that the space is at its optimal temperature, the variable air volume box will decrease the amount of supply air to the space and the corresponding air handling unit fans will slowly decrease in speed to save energy. Passive radiant ceiling panel heating provides space specific heating without the need to increase air supply temperature over the entire building or spaces that do not require it.

All air handlers are equipped with full economizer capability which allows for free cooling. When outside air is around 50-55 degrees, the direct expansion compression in cooling is disabled and the outside air dampers open fully to the building. The already cool air outside is used to temper the building.

Sensor activated lavatories and water closets decrease water usage by automatically turning off when not needed. Low flow lavatory and water closets decrease total water usage.

The electrical systems throughout the building utilize sustainable design principles. Lighting controls with occupancy sensors and override timers are used to turn off lighting that is not being used. Light fixtures in selected areas such as offices and conference rooms utilize multi-level switching so that lighting levels can be reduced to conserve energy. Lastly, light fixtures utilize energy efficient electronic ballasts.