

CENTRAL LIBRARY – NEW BUILDING SYSTEMS

There are three guiding principles for the planning, design, and operation of the transformed Central Library: efficiency, flexibility and safety. The architects and engineers have specified products, processes, and automated building systems in order to maximize the energy efficiency, safety, and comfort for our patrons. We have installed leading edge technologies for the heating, air conditioning, lighting, plumbing, security and technology systems so patrons can easily and comfortably access the library collection and enjoy the services.

To maximize energy efficiency, three specific systems have been installed: the access floor plenum, centralized chilled water supply, and automated lighting controls. The entire six-story addition and atrium have been built with elevated access floors. A two-foot space under the floor has been provided to allow for piping, data, and electrical wiring. This plenum space is also used for air distribution to the building, in effect, creating a large supply air duct for each floor. The openings in the floor can be adjusted and moved to accommodate building layout changes and heating and cooling needs. By delivering air at so many locations on a floor, the air does not need to be overly conditioned. In the winter time, we can save energy on air treatment by providing slightly cooler temperature and in the summer provide a slightly warmer temperature without compromising patron comfort. Extra air is provided at the exterior glass walls to handle those special zones.

The Central Library will follow the City's example and connect to the downtown chilled water system provided by Citizens Thermal Energy, instead of using a cooling tower for air conditioning. As verified by the ROI study, It is more energy efficient to have a centralized service, and the Library will not have the on-going maintenance cost for the cooling tower and chiller systems.

A significant portion of the energy cost for the Library, and any other building, is lighting. With the large windows, day lighting can provide most for the lighting needed for patrons. The glass used in the building is insulated, with an interior film, UV and low-E coatings. The light from the south windows is modulated by automatic blinds to balance the light required to use the building with glare. Efficient fluorescent task lighting is provided at the reading tables, comfortable seating spaces, and at the book shelves. The lighting for the books on the shelves uses LED strip fixtures which provide the most lumens per watt available on the market. All of these fixtures are managed by an automated lighting control system which allows maximum control for energy efficiency.

These systems, and others, will be used to efficiently support the mission of the Library, an essential community information service providing materials and programs in support of the lifelong learning, recreational, and economic interests of all citizens of Marion County.