

Breadth Summary

Mechanical

The mechanical system of the Medical Office building combines variable air volume (VAV) boxes with perimeter heat pumps. This system is effective for the individual office spaces along the building perimeter, but the mixing ventilation system is not ideal for the large open office spaces. A more flexible system capable of delivering air to occupants in an open office is an under floor air distribution system (UFAD).

UFAD systems can be moved around according to office configurations. They can also be controlled by people in individual cubicles to provide local comfort. However, the maintenance of the diffusers is very critical, as they tend to build up dust more quickly than mixing diffusers at the ceiling. It is also difficult to determine the effects of the system, therefore a computational fluid dynamics analysis must be performed to guarantee the system's effectiveness.

Lighting

The Medical Office Building houses an auditorium which is used for stock holder meetings and company presentations. The auditorium is divisible into three parts, only one of which has a digital projector. Typically all three parts of the auditorium are combined and presentations are done using the one projector. The existing system is effective, but it may be possible to provide additional lighting to the presentation area.

Because increasing costs are a concern, simply adding lights is not an option. To alleviate the cost of adding an additional set of presentation lights, the general lighting system in the room will also be redesigned. Using rows of shelved T5 lamps, it should be possible to provide the same level of luminance as the existing down lights at less expense. The savings on the system will hopefully pay for a track lighting rack that provides additional lighting to the presentation area.