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Why Are We Specifying More Elaborate Interior Lighting Controls?

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Since Pennsylvania adopted the Uniform Construction Code (UCC) in 2004, the International Code Council's (ICC) 2003 International Energy Conservation Code (IECC) sets the minimum required standard for the design and construction industry. However, many are not aware of these IECC requirements.

The IECC requires additional light reduction controls and lighting shutoff controls for most interior spaces. Except for corridors, storerooms or public lobbies, areas that have more than one light fixture are required to have a manual control that allows occupants to reduce the amount of energy used for lighting by at least 50%. Buildings larger than 5,000 square feet are required to have an automatic control device to shut off lighting, such as a time switch. These automatic lighting shutoff controls have various requirements for scheduling, maximum areas, manual occupant overrides, and exceptions for certain types of large retail, assembly and industrial spaces.

A common light reduction control for typical lay-in fluorescent light fixtures incorporates dual wall switches, which control either stepped (high/low) dimming ballasts, or ballasts for individual lamps within multi-lamp fixtures. However, in buildings over 50,000 square feet, automatic lighting shutoff control systems may also be required.

An exception to the requirement for both light reduction and automatic lighting shutoff control systems is to have lighting controlled by an occupancy sensor, and this is sometimes the simplest solution. Sensor technologies offer a wide range of solutions and include passive infrared, ultrasonic, and combinations of both.

An alternate minimum energy standard which is acceptable to the 2003 IECC in commercial buildings is ASHRAE 90.1-1999. This standard also allows the use of occupancy sensors that shut lights off 30 minutes after a space becomes vacated as a solution for the requirement of automatic light shut-off.

Although these requirements may increase construction costs, the payback period for the nominal additional upfront cost for these lighting controls is often quite reasonable, especially with the recent trends in energy rates.

Therefore, our clients should expect to pay a little more for lighting controls, but to reap the energy-saving benefits for the life of the building.