

energy efficient lighting and plug load management

Lighting

Lighting system upgrades are among the most cost-effective means to lower energy use, cut operating costs, and reduce greenhouse gas emissions.

Lighting upgrades also improve lighting quality and aesthetics, enhancing occupant well-being and increasing property value.

Lighting upgrades can be completed at varying levels of complexity and cost, from replacing individual components—such as lamps, ballasts, or sensors—to redesigning entire spaces.

Most building types can benefit from lighting upgrades, although commercial buildings often have the greatest opportunities for savings. Installing high-efficiency fixtures and advanced lighting controls can reduce lighting energy use in commercial buildings by as much as 75%.¹

Plug Loads

Plug loads refer to the energy drawn from electrical outlets by electronics and appliances. Plug loads can be significantly reduced by installing efficient appliances, consolidating equipment, installing smart controls, and engaging occupants.

Daylighting

Daylighting systems use sensors and controls connected to automated shades and interior lighting to allow maximum comfortable daylight into a space while minimizing glare, unnecessary electric lighting, and cooling loads.

Zoning

Zoned lighting systems allow for more localized control of lighting fixtures by occupants or building management systems, reducing energy use and enabling greater customization.

Submetering

Submeters monitor occupant electricity use down to the level of an individual circuit or appliance, bringing real-time transparency and accountability to occupant electricity use.

We initially did these lighting improvements and installed submetering because the law said we had to, but we've actually seen our energy bills go way down.

Advanced Controls and Sensors

There are many lighting control strategies that save energy and enhance functionality, including using time-of-day scheduling and vacancy- and daylight-responsive sensors.

Energy Efficient Appliances

ENERGY STAR-certified appliances meet high standards of operating efficiency. Pairing these appliances with timers that power them down after a period of inactivity further reduces waste.

Vampire Loads

Many electronics draw electricity even when switched off, contributing to wasteful "vampire loads." Unplugging electronics or installing smart plugs and smart power strips that automatically deactivate idle appliances helps eliminate this waste.

We opted for an open-plan office with bright, matte finishes and furniture with low partitions to maximize daylight and reduce electric lighting.

¹ Lighting the Way, Building Energy Exchange, 2017, p. 2.