

WOMEN'S BUSINESS BOSTON

Provide flexibility and energy savings with space-by-space lighting

By Dorie Weintraub / Architecture
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The most intriguing architecture can't be fully appreciated without appropriate lighting. In office environments, designers often use lighting as part of the architecture rather than as an afterthought to make large spaces more comfortable.

By applying "space-by-space" energy budget guidelines and a "path" approach to office design, companies can enjoy pleasing office space while saving money and energy.

Maximum energy budgets are defined by Massachusetts State Building Code as 1.0 watts per foot, and energy can be assigned by one of two methods: the building area method or the space-by-space method.

The building area approach sets limits to code: 1.0 watts per foot.

The space-by-space method provides more lighting flexibility, allowing general lighting for desks in an open office at 1.1 watts per foot and the corridors at a lower 0.5 watts per foot. This allows for using minimum energy in some areas (such as corridors) and applying the saved energy to more fun or aesthetic lighting (such as dining areas or galleries).

A path is a common design element in open-area and closed office spaces that helps with navigation and delineating areas or departments into "neighborhoods."

Paths are commonly called out by a change in ceiling height, difference in lighting fixtures or by structural ceiling elements that are often referred to as "solids."

HISTORIC APPLICATION

New office design in a historic Boston building takes advantage of this space-by-space method and path design concept by using traditional pendant lighting to light the open office space and simple lighting for the transparent client conference area.

Strip lighting fixtures, placed in a repeating pattern in the ceiling, accent the connection to the space – a triangular path with restored original iron columns. This approach adds considerable visual interest while providing functional lighting at a modest cost.

WAREHOUSE PROJECT

Some companies are taking former warehouse spaces and scaling them down for offices and laboratory space. In one example, roomy space with 16-foot ceilings was made more intimate with ceiling solids to divide it into smaller open spaces.

An aluminum grid added to the darkly painted ceiling reflects light back to the floor, and a row of specialty lighting illuminates the space. To create greater intimacy, a path throughout the large space intersects with the large ceiling solids at stopping points along the way. Pendant fixtures follow the path to provide warmth and light.

OPEN FLOOR DESIGN

To support a collaborative and flexible work approach for a consulting firm, an open floor plan was used to create a series of office neighborhoods connected by a meandering path.

There, the major path circling the office has lit walls instead of ceilings. This approach provides a gallery feel to the space, and the company takes advantage of the lighting to display artwork. Motion detectors turn off lights in unoccupied conference rooms, enabling the company to allocate the savings in the energy budget for art display lighting.

Additional paths are set off by a unifying carpet color, a lower ceiling and a series of surface mounted lights. A change in lighting indicates the path within the open space.

INTEGRATION

All three of these projects take advantage of the space-by-space method to budget energy effectively while enhancing design. By integrating lighting into the overall design of the office, paths can be made into a space, not just a leftover place for people to walk.

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