

# DELTA Snapshots

Issue 4 Office Lighting

Indirect lighting for open-plan offices is an effective approach to providing a comfortable, low-glare office environment. This application features a creative solution that is flexible and functional.

## Application Profile

Siegel & Gale is a corporate communications firm located at 10 Rockefeller Plaza in New York City. The design concept for the office focused on creating an environment that would build community and teamwork among employees. The design team faced several challenges in renovating this historic building for modern office use—preserving the appearance of tall ceilings in spite of exposed mechanical ducts and sprinkler pipes, and providing uniform illuminance throughout the open offices where ceiling heights varied from 9'-6" (2.9 m) to 13'-0" (4.0 m).

A 9' X 9' (2.7 m X 2.7 m) cable-mounted power grid was installed to create a consistent pattern and provide flexibility to attach luminaires as needed. The channel acts as an electrical raceway, avoiding additional ceiling clutter. A white acoustical coating was sprayed onto the ceiling (reflectance of 72%).

Task lighting at each workstation allows individual control of desktop lighting. Wall washers attached to the grid illuminate pin-up space and highlight artwork along perimeter walls.



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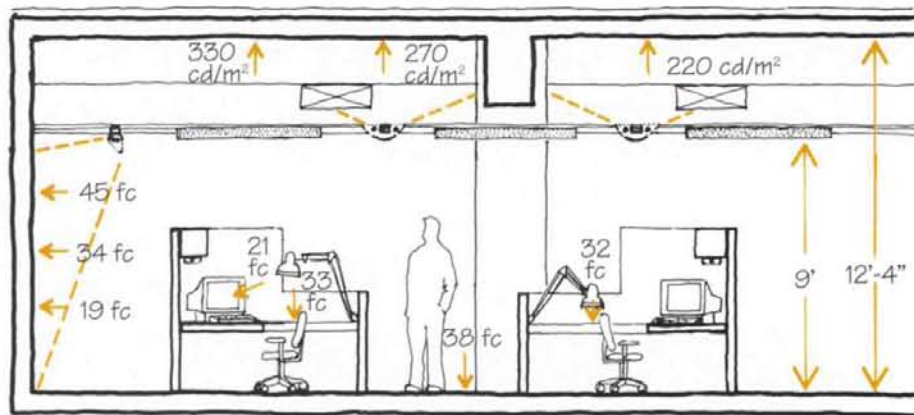
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## Lighting Objectives

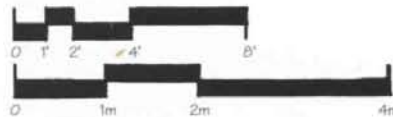
- Provide uniform illumination throughout the open office area.
- Provide good color quality for graphic layout work and long-life lamps (20,000 hours) for reduced maintenance.
- Provide a consistent visual design element that ties all the work areas together.

## Luminaires, Lamps, and Energy

The 9' X 9' power grid supports 5' (1.5 m) long indirect luminaires placed in a square pattern. Each luminaire contains (2) F40T8/RE735 lamps. Wall washers, 18" (450 mm) long, each lamped with (1) FT39T5/RE835 long twin-tube fluorescent lamp, draw energy from the same grid. All luminaires on the power grid have electronic ballasts for quiet, flicker-free operation. The lighting power density for the office is 1.3 W/ft<sup>2</sup> (14 W/m<sup>2</sup>), not including task lights.



Section through open office area



## Design Highlights

**Architecture/Lighting Integration:** The power grid, suspended from the ceiling, provides a place to mount indirect lighting and serves as an alternative to a suspended ceiling. The clutter of exposed ductwork, painted white, seems to disappear above the power grid.

**Uniformity and Flexibility:** Uniform illuminance throughout the open office area enables furniture arrangement to be flexible. Indirect lighting provides consistent light levels, irrespective of furniture or partition placement, as well as the nondirectional light that allows people in work groups to see each other's faces easily. Maintaining visual contact among different work groups was an important design consideration for the Siegel & Gale office.

**Visibility and Visual Comfort:** The indirect lighting system provides low-glare general lighting throughout the office with a good luminous quality for VDT and paper tasks. Undershef fluorescent task lighting, built into each workstation, and incandescent swing-arm task lamps provide necessary additional desktop lighting and allow employees to customize their work environments to their individual lighting needs.

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**Siegel & Gale, New York**

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