

## Removal of PCBs from lighting fixtures in City Buildings

- As part of DCAS Division of Energy Management retrofit projects at City buildings, lighting systems are upgraded with more energy efficient light fixtures. Screw-in incandescent bulbs are replaced with compact florescent bulbs and large overhead fixtures are replaced with fixtures containing longer-lasting, lower-wattage bulbs, efficient electronic ballasts, and fixture reflectors. During a lighting upgrade, inefficient T-12 bulbs and magnetic ballasts are replaced with energy saving T-8 and T-5 fixtures, and new electronic ballasts replace existing ballasts that may contain PCBs.

- PCBs, or polychlorinated biphenyls, are man-made organic chemicals. They were commonly used as insulators in electrical equipment produced and used in the 1950s, 1960s, and 1970s, because they have a high tolerance to heat. In lighting fixtures, PCBs were used in small amounts in the capacitor and potting material of the ballasts. When they are intact, PCB ballasts pose no immediate health threat.



- Since the early 1990s the DCAS Office of Energy Conservation has managed approximately 450 lighting upgrade projects, and there are currently over 200 projects either underway or in the pipeline.
- Steps to upgrade lighting systems to make them more energy efficient:
  - Step 1: Identify inefficient lighting fixtures including T-12 fluorescent lamps with magnetic ballasts (some of which may contain PCBs).
  - Step 2: Remove the entire lighting fixture and install a new efficient PCB-free lighting fixture, including T5 or T8 fluorescent lamps with (non-PCB) electronic ballasts and metal halide fixtures. Install occupancy sensors.
  - Step 3: Properly dispose of or recycle old fixture components in a safe and speedy manner in compliance with all state and federal regulations.
- Procedures for removal of PCBs: All City employees and contractors responsible for removing PCBs receive training in the proper handling of PCBs. At the project site, an area is identified for the collection of ballasts and lamps prior to shipping them off site for proper disposal. This area must be clearly marked as a hazardous waste area, and have proper security. Unless ballasts are clearly marked "Non-PCB" or "Contains No PCBs", they are handled as PCB ballasts. Specifically, they are packaged in separate containers clearly marked as containing PCB waste and have logs

of exactly the number of ballasts and lamps they contain and whether or not those ballasts are leaking. Once potentially contaminated ballasts are removed from a fixture and packaged for disposal, they are removed from the site within 30 days.

- Published medical opinion confirms that the levels of PCBs do not present an immediate health risk to building occupants.
- For examples of DCAS Division of Energy Management retrofit projects, including lighting upgrades, please visit our [Case Study](#) page.