



CCP Beneficial Use in our Nation's Capital



Ronald Reagan Building

Two millennia ago, Romans discovered that pozzolanic volcanic ash could be used to make a particularly durable type of concrete. "Roman concrete" would be used to build the Pantheon, the Colosseum, and many other structures that survive at least partially intact to this day. It is perhaps fitting, then, that our nation's capital, which draws much of its architectural inspiration from ancient Rome, should incorporate fly ash into so many of its great public buildings.

EPA Leads the Way

On January 28, 1983, the U.S. Environmental Protection Agency (EPA) issued guidelines requiring all federal agencies, as well as all state and local government agencies and contractors that use federal funds to purchase cement and concrete, "to implement a preference program favoring the purchase of cement and concrete containing coal fly ash." Five years later, after Congress approved funds for the construction of the Ronald Reagan Building to house the agency's staff, EPA's New Headquarters Project team was established to work on the building's design.

In keeping with its mission of environmental protection, EPA worked to ensure that the facility's design minimized adverse impacts on the environment. Although EPA had a limited role in the design of the building, the agency was successful "in altering the building to reflect a number of sustainable design and mission features, including...use of fly ash in the cement," the agency noted in a 1997 case study describing the building's construction, [*Leading by Example*](#).

Specific fly ash volumes and mix designs are not disclosed in EPA's case study. Upon the building's completion, however, it became the second-largest federal office complex, covering 11 acres, with 3.1 million square feet of office space, and incorporating enough concrete to pave a 106-mile-long two-lane highway.

Other Notable DC Structures Using Fly Ash

EPA's headquarters is hardly alone among notable Washington, D.C., structures that incorporate fly ash. Others include:

- Washington, D.C.'s subway system incorporates more than 200,000 cubic yards of fly ash concrete.
- The iconic *USA Today* towers, located in Arlington, Va., were built with cast-in-place fly ash concrete floors on both of the complex's 26-story buildings.
- Restoration activities at the U.S. Capitol in the 1980s required installation of tower cranes in front of the building that sat on two 400-cubic-yard pads of fly ash concrete, which have remained in place on the restored grounds ever since.
- Rosalie Island, the point of first landfall for the Woodrow Wilson Bridge in Maryland, was constructed with low-density fill that incorporated over 10,000 tons of fly ash.
- World Bank and International Monetary Fund headquarters buildings
- Ritz Carlton and Willard Hotels
- Vietnam Veterans Memorial
- U.S. Department of Energy headquarters
- Embassies of France and Japan