

CASE STUDY 4

THE U.S. HOLOCAUST MEMORIAL MUSEUM



PURAFIL PROTECTS ARTIFACTS 4 THE HOLOCAUST MEMORIAL MUSEUM



ABOUT THE U.S. HOLOCAUST MEMORIAL MUSEUM

The U.S. Holocaust Memorial Museum, located in urban Washington, D.C., stores and exhibits artifacts, such as letters, prisoners' uniforms and maps, which help to tell the story of the Holocaust. Many of these artifacts are made of wool, wood-fibers and other organic-based materials which will deteriorate or discolor in the presence of acidic gases.

THE PROBLEM

Like many urban cities, Washington, D.C. suffers from high levels of gaseous pollutants, including nitrogen oxides, sulfur dioxide and ozone. These gases are the primary components of automotive and diesel exhaust. A study conducted by a government agency reveals that hourly average concentrations of sulfur dioxide and nitrogen oxides are much greater than the levels recommended for archival storage (see below).

TABLE 1

Gaseous Contaminants	Reported Levels (ppb)	Recommended Levels for Archival Storage (ppb)
Sulfur Dioxide	22	< 0.35
Nitrogen Oxides	88	< 2.65

PURAFIL PROVIDES THE SOLUTION

Kannapell Rodgers Company, the local Purafil representative, installed Purafil's gas-phase air filtration systems in order to achieve the following objectives:

- 1) Stop the degradation of valuable artifacts.
- 2) Enable the museum to bring in temporary, traveling exhibits.
- 3) Clean the air for museum patrons and personnel.

Purafil's systems were designed for retrofit into the museum's thirteen air handling units and together filter 360,500 CFM of outside and recirculation air. And because recirculation air requires less energy to heat and cool than ventilation air, the museum saves on energy costs.

Housed within each filtration system are disposable modules containing CP Blend media. Purafil's CP Blend media is a 50/50 volume blend of both activated carbon (Purakol media), and potassium-permanganate impregnated alumina (Purafil Chemisorbant media). Because Purakol and Purafil media are effective at removing different gaseous contaminants, both are needed for complete gas removal.

PURAFIL PRODUCTS

Front Access System: Purafil's Front System is a non-powered unit composed of modular metal frames and modules filled with dry chemical media. The system is designed for retrofit into an existing air handling unit and is used in applications where space allows for installation in the direction of airflow. The frames can be stacked horizontally or vertically allowing for flexibility in terms of size and media bed depth.

The Purafil Side Access System: Purafil's Side Access System contains a pre-filter and/or final filters, modules filled with dry chemical media, filter tracking, side doors, and heavy support channels. The system is designed for retrofit and is preferred in applications where space requires access from the side of the air handling unit, perpendicular to the direction of airflow.

Disposable Modules: The U.S. Holocaust Museum's Front and Side Access Systems house MediaPAK™ disposable modules filled with Purafil's CP Blend media. The modules are pre-filled at Purafil's factory and come ready to be installed. With no separate handling of the media (i.e. emptying and refilling modules with new media), maintenance time is significantly reduced.

VALUE-ADDED SERVICE

Kannapell Rodgers Co. made regular follow-up service calls to ensure Purafil's systems were functioning at maximum efficiency. A test using Corrosion Classification Coupons (CCCs) was performed to determine the environment's corrosive severity level. An analysis of the CCCs revealed that the gaseous concentrations were well within the levels recommended for safe archival storage.

