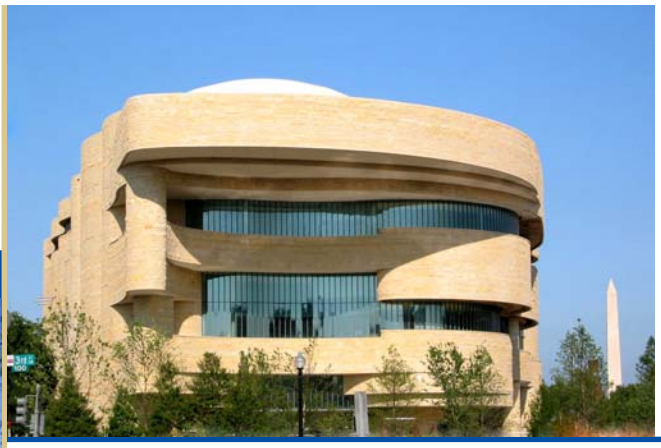

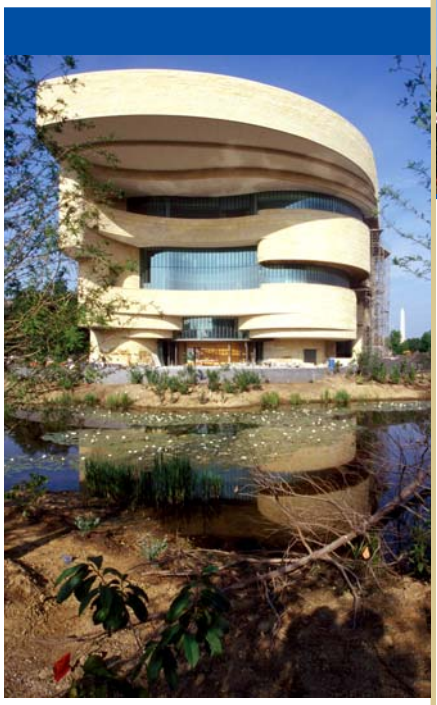

National Museum of the American Indian Washington, DC

The National Museum of the American Indian occupies the last available site on Washington's National Museum mall. The museum's permanent and changing exhibition galleries feature an extensive Native American collection of more than 1 million objects. Program areas include indoor and outdoor public spaces, as well as a private performance theater, a retail department, food service and areas for art and artifact restoration, research and administration. The building also features a central meeting place called the Potomac, a dome-topped public area where museum visitors can experience dance, drama, music, oral history and story-telling, and demonstrations by artists-in-residence on Native American traditional life-skills.

Air temperature and control of air circulation were critical issues for this project, particularly given the project's unique façade and geometry, neither of which could be compromised by the obvious placement of electro/mechanical equipment. Air systems for public areas incorporate water economizers that minimize the use of louvers on the building's exterior and minimize temperature fluctuation during variations in the temperature of outside air. The curved walls of the museum's interior also helped to determine the air distribution design. Concealed curve-linear outlets were placed in the majority of the museum's spaces to allow for quiet ventilation that doesn't compromise the interior architecture. Strict environmental control was imperative for the engineering of the museum's galleries – particularly in the design of temperature, humidity control systems necessary to preserve art and artifacts. Air handling units equipped with special housing and additional carbon and chemical filtration features (with a minimum of 95% efficient filters) insure proper air quality. Slow air distribution from ceiling to floor return vents minimizes the distribution of airborne particles in areas like the galleries and theater.

The Potomac is this museum's central gathering area and its large-volume is used as a collection point for spill air from throughout the building. Excess air from the museum's galleries and other functioning areas is circulated at various levels into the Potomac, where it is expelled from the dome. The Potomac's lower level air supplies are discrete from that used to provide air to the upper levels so as to minimize the impact of stagnant air from above circulating to public areas below. Computational Fluid Dynamics analysis performed for smoke purge mode to ensure proper placement of smoke exhaust intakes in the

Potomac.

The museum required that all electro/mechanical infrastructure be incorporated into a single distribution system (with telecommunications, security and audiovisual systems as designed by others to reduce space requirements for these systems (i.e., number of ceiling conduit runs) and to allow for efficient access to all systems for maintenance and adjustments. Outlets for telecommunications systems can also be used to access the security system via hand held devices; the public address system can also be used for emergency messaging, etc.

Architect: Polshek Partnership Architects