



Smithsonian Institution

Donald W. Reynolds Center for American Art & Portraiture
Washington, D.C.

Civil and Structural Engineering



Client Reference:

Office of Facilities Engineering & Operations
750 9th Street N.W. Suite 5200
Washington D.C. 20560-0908

Foster+Partners - Design Architect
SmithGroup - Architect of Record
Kathryn Gustafson - Landscape Architect

CMS Collaborative - Fountain Design
1100 Water Street, 2C
Santa Cruz, CA 95062

Budget: \$62 million

As part of the 2007 renovation of the courtyard of the Donald W. Reynolds Center for American Art and Portraiture, which houses the Smithsonian's National Portrait Gallery and the Smithsonian Art Museum, CMS Collaborative joined acclaimed landscape architect Kathryn Gustafson to design a unique water feature. The resulting design includes four of her signature water scrims and spans the length of the courtyard.

Due to uncertainties in the design and need for complex hydraulics calculations, Mesity-Miller Engineering was retained to design the geometry of the approximately 215-foot long trough, 510 gpm water feature as well as the geometry and capacity of the outlet works. MME's analysis included numerical methods to approximate solutions to differential equations and verification of the numerical results through standard civil engineering hydraulic calculation methodology. Precision analysis was required as freeboard tolerances were a fraction of an inch. The design process and ultimate geometric configuration involved a number of ultimately successful iterations with the architect, owner, and contractor.

An elegant glass canopy designed by world-renowned architect Norman Foster, "never touches but floats like a cloud" over the Robert and Arlene Kogod Courtyard; a stunning contemporary accent to the famous Greek Revival building that houses the National Portrait Gallery and Smithsonian American Art Museum in Washington D.C.

The resulting 28,000 square foot light-filled Kogod Courtyard is one of the largest public gathering spaces in Washington. It has quickly become the most sought after event spaces in the nation's capital and has helped turn the Smithsonian American Art Museum into a top destination museum for the 21st century.