

Striking Symbol of Progress in Steel



Smarter.
Stronger.
Steel.

National Museum of African American History and Culture

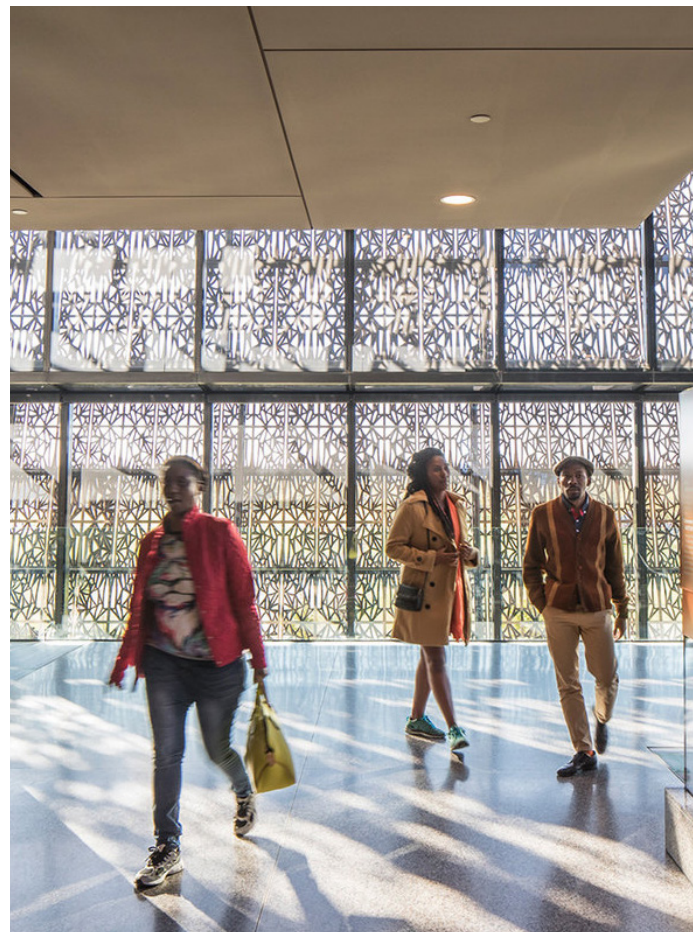
Location: Washington, D.C.

Size: 76,000 sq. ft

The National Museum of African American History and Culture, located on the National Mall in Washington, D.C., is a symbolic testament to the rich cultural heritage it celebrates. More than 4,000 tons of steel make this landmark structure a symbol of endurance and strength. The steel latticework on the exterior, inspired by the ironwork created by enslaved African Americans in the South, adds historical context and emotional weight to the physical architecture, while its three-tiered structure resembles crowns used in Yoruba art from West Africa.

Challenges

The design and construction of the National Museum of African American History and Culture faced several challenges, including balancing the need for a modern, innovative structure with the historical significance it represents. The unique design also had to complement the traditional architectural context of the National Mall, ensuring it would stand out while still harmonizing with the surrounding landmarks. The engineering



CASE STUDY: NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE

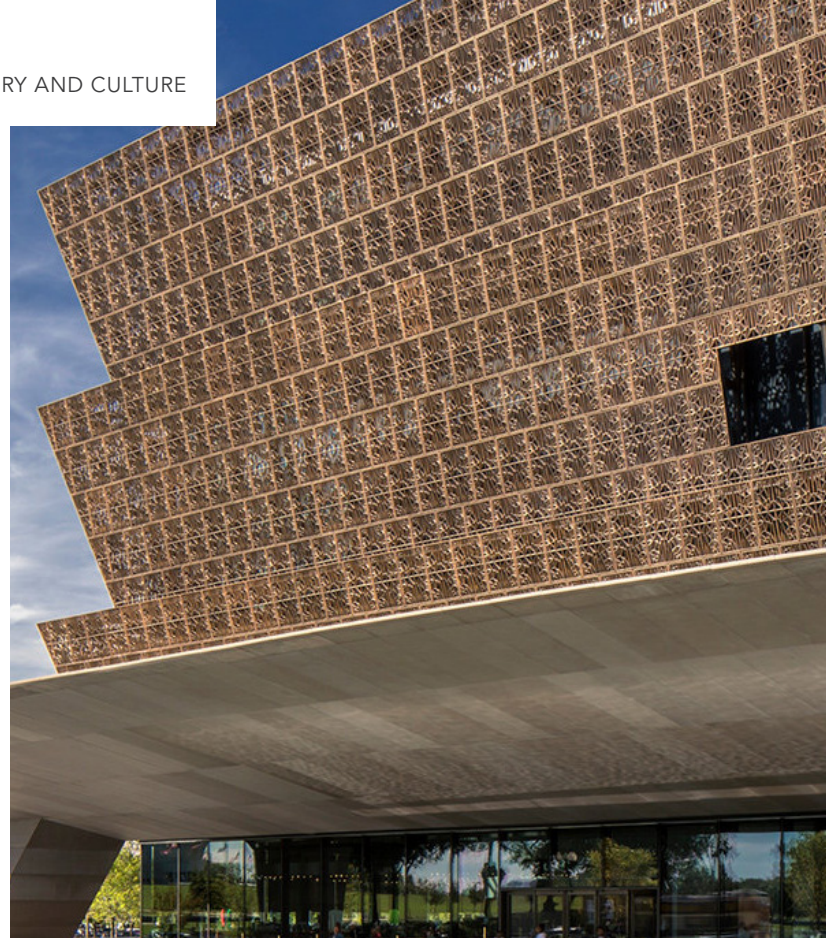
was also complex, as the latticework cladding is framed into the building only at level five and the base of the museum to create a single atrium around the entire museum.

Benefits of Steel Construction

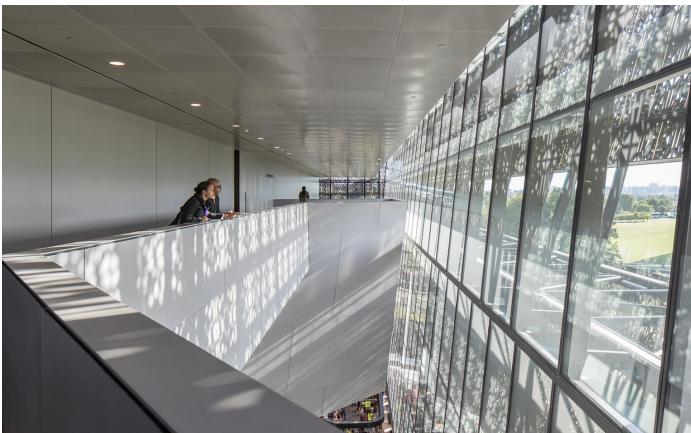
Structural durability: Steel provides exceptional strength and durability, ensuring the museum can withstand environmental elements and maintain its integrity over time.

Design flexibility: Steel facilitated the creation of complex, intricate designs, such as the iconic latticework, which reflects African American artistic traditions while enhancing the building's visual impact.

Sustainability: The average American structural steel beam contains at least 93% recycled content and is 100% recyclable, making it the only structural material that is a responsible choice both today and tomorrow.



Unique Steel Applications



Steel cores, column-free space: Four composite structural cores, cantilevered steel beams, and perimeter vertical trusses allow for column-free spaces at the ground-floor lobby and above-grade floors.



Long spans, major impact: The 120-ft by 350-ft at-grade history gallery roof was originally designed in concrete. Switching to steel saved time and money, eliminating the complex and costly shoring that would have delayed work in the interior.

The National Museum of African American History and Culture's iconic bronze-colored lattice, large open spaces, and sturdy below-ground reinforcements showcase the innovation that's possible with structural steel. These steel applications not only enhance the museum's visual impact but also ensure durability and sustainability within its challenging architectural design.



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