BUILT ENVIRONMENT CASE STUDY

Princeton University Art Museum

Balancing Preservation and Public Programming Through Acoustic Design

VISION

Create a purpose-built museum that supports exhibition, scholarship, and flexible public programming.

PARTNERSHIP

Collaborate with the project team to integrate acoustic criteria early and address the challenges of locating a performance-capable hall within a collection-driven facility.

VALUE-ADD

Use modeling, testing, and vibration monitoring to safeguard artwork while enabling the Grand Hall to function as a dynamic venue for lectures and musical events.

When Princeton University elected to replace its former art museum, the institution envisioned a larger, purpose-built facility designed to support expanded exhibition space and long-term stewardship of its collection. The new three-story, 146,000-square-foot museum includes galleries, conservation studios, offices, mechanical systems, elevators, and a prominent Grand Hall designed for flexible programming.

Trinity Consultants provided acoustical consulting services for the project, addressing both traditional gallery performance requirements and the specialized acoustic and vibration considerations associated with a performance-capable event space within a museum environment.

Trinity Consultants

VISION

The new museum was conceived as an academic and cultural hub capable of supporting exhibitions, conservation, and public engagement within a single facility. The Grand Hall serves as a flexible space for music performances, lectures, and events, expanding the museum's role beyond static display.

At the same time, preservation of artwork remains central to the institution's mission. Acoustic and vibration performance strategies were therefore critical to ensuring that future programming can continue without compromising the integrity of the collection. By embedding these measures into the design, the museum supports both long-term stewardship and meaningful visitor engagement.

PARTNERSHIP

Trinity Consultants was engaged early to establish acoustic and vibration criteria aligned with curatorial requirements. Working closely with Cooper Robertson, now Corgan, as architect of record and Adjaye Associates as design architect, the team coordinated performance goals with architectural and building systems design.

The Grand Hall presented the most complex challenge. Concerns that amplified music could affect artwork required careful evaluation. Trinity Consultants collaborated with the design team to study how the sound system would interact with the space and adjacent collection areas, incorporating in-house modeling, on-site testing, and vibration monitoring to verify compliance with artwork safety.

VALUE-ADD

A primary focus of the acoustic scope was protecting artwork from potential sound and vibration impacts generated during events in the Grand Hall. Trinity Consultants conducted detailed modeling to assess system performance and supplemented that analysis with field testing and vibration monitoring to confirm that established thresholds were met.

Across the broader facility, acoustic consulting addressed galleries, conservation studios, offices, and building systems to satisfy performance requirements. Through early engagement and technical validation, Trinity Consultants helped create an environment that supports flexible programming while preserving the museum's collection for students, faculty, and visitors.

CLIENT
Princeton University

ARCHITECT
Corgan

DESIGN ARCHITECT
Adjaye Associates

LANDSCAPE ARCHITECT
Field Operations

CONSTRUCTION MANAGER
LF Driscoll

MEP ENGINEER
Kohler Ronan

STRUCTURAL ENGINEER
TYLin

LIGHTING DESIGNER
Adjaye Associates

LANDSCAPE ARCHITECT
Tillotson Design Associates

FAÇADE ENGINEERING
Heintges

AUDIOVISUAL/TELECOM
Harvey Marshall Berling Associates

SECURITY
Layne Consultants International

SUSTAINABILITY
SOCOTEC

COST ESTIMATE
Stuart-Lynn Company

FOODSERVICE CONSULTANT
Clark Wolf Company

ACOUSTICS
Trinity Consultants

PHOTO CREDIT
Richard Barnes