

Keeping It Modern 2018 Architectural Conservation Grants

The Association for Preservation Technology International Inc.

Gateway Arch, Eero Saarinen, 1959-65, St. Louis, Missouri

A pinnacle of structural engineering, Gateway Arch in St. Louis was built to commemorate Thomas Jefferson's vision of a transcontinental United States, made manifest through his Louisiana Purchase and commission of explorers Lewis and Clark to map a route to the Pacific Ocean. The project originated in 1935 when President Franklin D. Roosevelt designated property along the Mississippi River to be developed as the Jefferson National Expansion Memorial. Designed by Eero Saarinen in 1948 and completed in 1965, Gateway Arch is constructed of triangular segments—double-wall carbon steel (interior) and stainless steel (exterior)—that reduce in size as they approach the apex. In a feat of engineering, this stressed metal double skin carries the structural loads, eliminating the need for interior framing.

Though Gateway Arch has welcomed well over 130 million visitors since opening, its stainless steel cladding has proven prone to soiling and wear over time. An interdisciplinary team of conservation specialists will partner with the National Park Service to research effective preservation protocols to protect the building's exterior. They will prepare small and large mock-ups for laboratory and field testing, and develop a series of practical treatment recommendations for brushed stainless steel, a material frequently used in outdoor sculpture and modern architecture. All findings will be documented in a conservation management plan, which will be shared with the international community.

Grant Support: \$180,000



The Gateway Arch in fall. Photo: NPS

Fondazione Politecnico di Milano

The National Schools of Art of Havana, Ricardo Porro, Vittorio Garatti, and Roberto Gottardi, 1961-64, Cuba

The construction of the National Schools of Art was one of the first major cultural projects to take place in Cuba following the country's 1959 revolution. Cuban architect Ricardo Porro and Italian architects Vittorio Garatti and Roberto Gottardi joined together to create an organic modernist architecture that would embody the new government's social aspiration: the integration of art, architecture, and landscape in a spirit of equality, freedom, and intercultural exchange.

Before the complex could be fully completed, however, the project fell out of political favor and was shut down. Although the National Schools were later placed on the World Monuments Watch List and designated a National Monument in Cuba, numerous organizations and government agencies—both local and international—attempted to resuscitate the project with only mixed results. With Getty support, experts at the Politecnico di Milano, one of the world's top technical universities for engineering, architecture, and design, will

take the lead on addressing the site's conservation. Ambitious in its scope, the project will include the collection and evaluation of historical documentation, technical studies on materials, tests of technical solutions on small pilot sites, the creation of computer models for flood risk assessment and mitigation, energy and environmental sustainability studies, and the development of a conservation management plan with suggestions for adaptive reuse. The project will also include training opportunities for Cuban conservation professionals to build local capacity.

Grant Support: \$195,000



School of Ballet, aerial view. Photo: Vittorio Garatti Archive

Foundation Cultural Heritage without Borders

History Museum of Bosnia and Herzegovina, Boris Magaš, Edo Šmidihen, and Radovan Horvat, 1963, Sarajevo

When the Museum of the Revolution (now the History Museum of Bosnia and Herzegovina) opened in Sarajevo in 1963, it symbolized optimism in the future and the belief that Yugoslavia could chart a unique path between Soviet and Western domains of influence. Blending characteristics of the International Style with the experimental ethos of Russian Constructivism, the museum was immediately celebrated for its innovative architecture: slender steel columns are all that support an enormous, yet seemingly weightless, reinforced-concrete cube as it floats above a glass-enclosed entry pavilion. A gallery wing extends from the entry pavilion, creating an impressive single-story curtain wall.



History Museum of Bosnia and Herzegovina. Photo © Boris Magaš

In the years following the museum's unveiling, however, environmental and political forces wreaked havoc on the structure. Sarajevo's climate includes a dynamic freeze-thaw cycle that has caused much of the building's concrete to expand and contract, leading to deterioration and loss. And the war in Bosnia from 1992–95 caused significant damage from shelling and gunfire. To ensure the museum's safekeeping, the nonprofit organization Foundation Cultural Heritage without Borders will document the building's history and condition and devise plans for its use and maintenance. The Foundation will also organize a seminar on the conservation of modern architecture for young professionals in the region. The resulting conservation management plan will address how future interventions can incorporate the building's more recent history, including the war damages that tell the history of the siege of Sarajevo and attest to the survival of the city's culture.

Grant Support: \$130,000

Georgian National Committee of the Blue Shield

Chess Palace and Alpine Club, Vladimir Aleksī-Meskhishvili and Germane Gudushauri, 1973, Tbilisi, Georgia

Since its opening in 1973, the Tbilisi Chess Palace and Alpine Club has acted as a community hub in the heart of Georgia's capital city. Architects Vladimir Aleksī-Meskhishvili and Germane Gudushauri designed the building to exist in harmony with its park setting and to serve as an inviting center for chess and mountaineering, two of Georgia's most popular leisure activities. The site is a unique example of late Soviet Modernism, and its event halls host several chess-related events annually, including national and international tournaments.



Tbilisi Chess Palace and Alpine Club, Façade, View from South-West.
Photo: Gogita Bukhaidze

Despite the club's popularity, the building has lacked dedicated funding for maintenance. Its exterior and interior finishes have begun to deteriorate, its heating and electrical systems require updating, and the structure itself has been subdivided to create rental spaces. A Getty grant will allow caretakers to develop a conservation plan to guide future treatment and maintenance. The project team will interview the surviving architect and interior designer about the building's original state and conduct research on its materials and structure. They will also apply for the building to be listed on Georgia's National Register of Cultural Heritage Monuments, raising awareness of the significance of modernist architecture in the region. Using the Chess Palace as a case study, workshops for young architects and conservation professionals will increase local capacity for architectural preservation work in the future.

Grant Support: \$134,000

Queen's University Belfast

St. Brendan's Community School, Peter and Mary Doyle, 1979, Birr, Ireland

Surrounded by fields on the outskirts of the designated Irish Heritage Town of Birr in County Offaly sits St. Brendan's Community School, an internationally recognized example of Irish modernism. Architects Peter and Mary Doyle designed St. Brendan's to reflect Ireland's newly emerged educational ideal: free education for all. In anticipation of an influx of new students, the Doyles configured the school to have modular components that could be added or removed as needed. Using elevated ceilings supported by concrete portal frames and sleek walls made entirely of steel-framed windows, the architects created a flexible space with a bright, bustling, interior "street" where students could easily socialize and exchange ideas.



St Brendan's Community School, Birr: view of social space.
Photo: John Donat / RIBA Collections

Due to its age and materials, as well as Ireland's updated construction and environmental performance standards, St. Brendan's now faces a number of conservation challenges. These include moisture ingress, asbestos abatement, energy performance, and thermal comfort.

Queen's University Belfast has assembled an expert team to develop a conservation management plan that not only addresses these concerns but also outlines principles for St. Brendan's future care. Given that St. Brendan's technology and construction are emblematic of other modern buildings, the conservation plan has the potential to influence the wider debate in Ireland on how best to preserve modern heritage. At the conclusion of the project, organizers will share their research findings through an exhibition and public symposium.

Amount recommended: €124,000

Salk Institute for Biological Studies

Salk Institute Campus, Louis Kahn, 1965, La Jolla, California

In 1957, Jonas Salk, developer of the first effective polio vaccine, sought to establish a world-class scientific institute where biologists and others could work together in an environment conducive to research and collaboration. His resulting partnership with renowned architect Louis Kahn led to the creation of a pristine research center, built on a serene and isolated bluff overlooking the Pacific Ocean. Composed of a series of striking concrete structures, the Salk Institute for Biological Studies possesses an array of modern materials and textures: lead, glass, pozzolanic concrete, unfinished teak, Cor-Ten steel left to weather and rust, and stainless steel/nickel alloy to frame the laboratory window walls.



Salk Institute for Biological Studies. Photo: Elizabeth Daniels

A 2014 Keeping It Modern grant supported the development of the site's comprehensive [conservation management plan](#). Now, the Institute is ready to address its aging architectural concrete. The corrosion of embedded reinforced steel has caused the concrete to become distressed, while water run-off has caused staining and discoloration. Grant funds will support the concrete repair of the site's North Study Tower. The research behind the project and its implementation will set a new standard for the conservation of concrete, which remains a major challenge for many modern buildings.

Grant Support: \$200,000

Technische Universiteit Delft

Technische Universiteit Delft Auditorium, Johannes van den Broek and Jaap Bakema, 1966, The Netherlands

A paragon of Dutch modernism, the Auditorium of the Delft University of Technology (TU Delft) hovers like a buoyant spaceship. Prompting instant acclaim upon opening in 1966, the 1,300-seat lecture hall features gravity-defying pre-stressed concrete ribs and a soaring cantilevered roof that protrudes nearly 100 feet from the main entrance. Johannes van den Broek and Jaap Bakema, both alumni of TU Delft, designed the bold brutalist structure as an homage to the modern movement—architecture that would fulfill a social function, create a cosmic space, and be organic in form.



TU Delft Aula. Photo: Marc Blommaert

To ensure that the Auditorium can accommodate increased usage demand and endure into the future, TU Delft will develop a conservation management plan that addresses issues ranging from concrete damage and code compliance to energy efficiency and the defining of surface colors. The project team includes members of the university's faculty in engineering, design and history, urban studies, and architecture. Their comprehensive research and analysis will inform detailed recommendations to guide future maintenance and demonstrate good stewardship for other post-war campuses in the Netherlands and beyond.

Grant Support: €146,000

United Nations Educational, Scientific and Cultural Organization - UNESCO

Rashid Karami International Fairgrounds, Oscar Niemeyer, 1967-75, Tripoli, Lebanon

Lebanon in the 1960s was a hub of tourism and finance, moving into prominence on the world stage. In 1962, to mark the country's international status and rapid economic growth, the Lebanese government commissioned Oscar Niemeyer, one of the world's premier modernist architects, to design a permanent fairground and exhibition complex for the city of Tripoli. Unfortunately, the boldly modernist compound of exhibition pavilions, theaters, museums, and residences was only partially completed when Lebanon's civil war broke out in 1975. Today, in its incomplete state, the fairground still encompasses fifteen buildings, which reflect Niemeyer's interest in the experimental use of reinforced concrete to create unexpected, even improbable, forms.



Oscar Niemeyer's Museum of Lebanon, Rashid Karami International Fair, Tripoli. Photo © UNESCO Beirut Office

Although the buildings are intact and structurally sound, they suffer from decay. Working with local authorities, [the UNESCO Field Office in Beirut](#) will use Getty support to develop a conservation management plan for the site. Distinguished local and international consultants will provide expertise on technical issues and explore possibilities for adaptive reuse that respect Niemeyer's original vision. The team will also conduct a detailed structural assessment and material analysis for one representative building, using the results to provide recommendations for conservation or mitigation strategies for the site's other buildings.

Grant Support: \$225,000

Università degli Studi di Roma "La Sapienza"

School of Mathematics, Gio Ponti, 1935, Rome, Italy

The School of Mathematics at the Università degli Studi di Roma "La Sapienza" is one of Gio Ponti's most significant early buildings. Through the site's design, the architect ingeniously knit together classical forms and Italian modernism, incorporating triangular and circular shapes for doors and windows, and using outer finishes and stone veneering in novel ways. The building consists of a large atrium flanked by classrooms, faculty offices, a library, a boardroom, and an inner courtyard. The library—perhaps the most architecturally significant part of the building—is

partially lit by a large vertical opening, at the center of the main façade, that lets in modulated and colored light. The roof and skylight, made of reinforced concrete vaults and glass-cement blocks, bring in a soft natural light from above.



School of Mathematics, Roma, Sapienza University campus, Gio Ponti, the rear façade in 1935. Photo from L. Licitra Ponti, Gio Ponti, l'opera, 1990
© Gio Ponti Archives

Although listed by the Italian Ministry of Culture in 1989, the building has suffered damage over the years. A team of architects, architectural historians, engineers, and 3D survey and modeling experts will use grant funds to create a long-term, sustainable conservation plan. By analyzing historical documents and investigating the original building materials and construction techniques, they will identify the remaining original fabric of the site. A geotechnical survey will inform a seismic assessment plan. All of the results will be compiled in a conservation plan intended to guide long-term preservation of the building and which will set the stage for systematic care of other significant structures on La Sapienza's modern campus.

Grant Support: \$180,000

Università degli Studi di Urbino Carlo Bo

Collegi Universitari, Giancarlo De Carlo, 1962-1983, Urbino, Italy

Italian architect Giancarlo De Carlo, a core member of the radical architecture collective Team Ten, achieved international acclaim when he created the five "Collegi" buildings (Colle, Tridente, Serpentine, Aquilone, and Vela) at the Università degli Studi in the rolling landscape near the medieval city of Urbino. He championed the philosophy that modernist architecture should support social change, and used this principle to design over 62,000 square feet of buildings that function as "an organism in the form of a city" — repeated, simple structural elements respond subtly to the surrounding hillside topography. A series of open public spaces reinforce a close relationship to nature by connecting through a system of flowing internal "streets."



Aerial view of part of the Urbino University Colleges. Photo: Fulvio Palma, Urbino

In 2015, the Getty Foundation awarded a Keeping It Modern grant to the university to develop a comprehensive conservation plan. Shortly thereafter, though, a severe earthquake struck near the site—a high-risk zone—and raised fresh concerns about the campus's seismic safety. A new Getty grant will allow the university to study its seismic conditions, with the goal of lowering its vulnerability and adapting the campus to new standards. Several of De Carlo's former students (who have dedicated their practice to protecting his work) will perform a comprehensive review of international building codes and seismic regulations in Italy. They will then research original drawings and documents to better understand De Carlo's construction techniques, including the foundation system and its connection with the soil. Finally, they will model seismic behavior of the buildings under vertical and horizontal loads to determine improvements and retrofit. The results will not only prepare the university to withstand future earthquakes, but also inform the care of other twentieth-century buildings that were conceived before specific seismic regulations existed.

Grant Support: \$100,000

University of Leicester

Engineering Building, James Stirling and James Gowan, 1962, England

James Stirling and James Gowan's Engineering Building at the University of Leicester is widely hailed as an early icon of postmodern architecture. The building's cantilevered lecture halls, contrasting volumes, and jagged glass rooflines have inspired generations of architects and engineers. Comprised of two joined towers—one for offices and one for research—attached to a low engineering workshop complex, the building was constructed from reinforced concrete with steel trusses spanning across the workshop spaces and patent glazing rafters, tiles, and engineering bricks applied as faceted skins throughout. Although the form of the concrete was daring in the extreme, the materials and basic arrangements drew from a well-established tradition of light industrial architecture.

While Stirling and Gowan were forward-thinking in their designs, they could not have anticipated how the passage of time would affect their building's function and infrastructure. Today, engineering students require more technically sophisticated environments for research, and energy standards demand performance that the building's original materials cannot match. Research and planning are essential to ensuring that the Engineering Building can continue to serve its intended purpose. A team of experts will conduct small research projects on the building's materials and environmental systems to identify sustainable solutions that maintain alignment with Stirling and Gowan's original design. They will then produce a comprehensive conservation management plan to guide the university in caring for the Engineering Building over the coming decades.

Grant Support: £85,000



External view of the Engineering Building tower and workshops. Photo © University of Leicester (photographer Simon Kennedy)