

KEEPING IT MODERN

Getty Foundation Grants 2014–2018



The Getty Foundation



**Museu de Arte
de São Paulo Assis Chateaubriand**
Lina Bo Bardi
São Paulo, Brazil
1968

“Now that Modern Movement buildings are beginning to age, heritage professionals face mounting challenges to protect and preserve the innovative but experimental building materials and techniques that distinguished this era. From a global perspective, the international conservation community and the general public stand to benefit greatly from the results of Keeping It Modern project grants and their collective emphasis on thoughtful planning and stewardship.”

Gustavo Araoz, Honorary President of the International Council on Monuments and Sites (ICOMOS)

**The National Schools
of Art of Havana**

Ricardo Porro, Vittorio Garatti,
and Roberto Gottardi
Havana, Cuba
1964



INTRODUCTION

Deborah Marrow

Director, The Getty Foundation

From its earliest years, the Getty Foundation has advanced the discipline of conservation through grants for the preservation of historical buildings. Twenty years of Architectural Conservation Grants (1988–2008) benefitted a wide array of the world's most significant built heritage, from Frank Lloyd Wright's Fallingwater in Mill Run, Pennsylvania, to the Nagaur Ahhichatragarh Fort in Rajasthan, India. Those two decades of grantmaking remind us of not only the splendor of humanity's architectural past but also the importance of research and planning when it comes to preserving that past for future generations.

In 2014 when we decided to create a global initiative dedicated to architecture from the modern period, we knew that the same emphasis on planning should apply. The result has been Keeping It Modern, an initiative that continues our deep commitment to architectural conservation with a focus on research and thoughtful stewardship of important buildings of the twentieth century. The initiative complements the Getty Conservation Institute's Conserving Modern Architecture Initiative (CMAI), launched in 2012, to advance scientific research and the development of conservation solutions. Of the fifty-two buildings we have supported, the Salk Institute for Biological Studies in La Jolla, California, and the Eames House in Pacific Palisades, California, directly relate to CMAI.

Keeping It Modern grants have allowed the Foundation to extend and deepen our worldwide engagement with architectural heritage. We have awarded grants for projects in East-Central Europe, North and South America, and North Africa, as well as several grants in Asia and the Middle East. Now five years in, Keeping It Modern grants are supporting the conservation of modern buildings in twenty-nine countries around the world.

The goal from the beginning has been to help custodians of modern sites research the buildings in their care and systematize their conservation processes, leading to optimal long-term preservation outcomes. With a growing number of Keeping It Modern grants reaching completion, results are taking shape. The following report highlights the accomplishments of several of our grantees and explores key global projects.

Keeping It Modern would not have been possible without the dedicated work of Antoine Wilmering, senior program officer, whose vision for and leadership of this program has ensured the best possible care for dozens of international modern sites. I would also like to thank the members of our Keeping It Modern Advisory Committees and all the Foundation staff who have contributed to this important work.

**Rashid Karami
International
Fairground**
Oscar Niemeyer
Tripoli, Lebanon
1975



Gandhi Bhawan
Panjab University
Pierre Jeanneret
Chandigarh, India
1961



FOREWORD

Shikha Jain

Director, DRONAH

It is a great privilege to write this essay on the Getty Foundation's Keeping It Modern initiative, a grant program that I have been associated with since 2015 in varying roles, including as a grantee, workshop delegate, and in 2018 as an advisory committee member.

As a conservation professional in India, having completed more than fifty heritage conservation projects in over two decades, I have had the opportunity to work with a wide range of national and international organisations, including UNESCO, World Bank, World Monuments Fund, Ministry of Culture in India, Archaeological Survey of India, and various state government departments, in addition to the Getty Foundation. More recently, professional projects in Myanmar, Singapore, and China have given me a wider perspective of the conservation challenges facing the Asian region. Within this range and framework of my practice, I find the Getty Foundation's Keeping It Modern initiative to be one of the most rigorous and distinguished global conservation programs for modern heritage.

Recognition of modern heritage in India is a recent phenomenon. When UNESCO's World Heritage Centre held its "Regional Meeting on Modern Heritage, for Asia and the Pacific" in Chandigarh, India in 2003, the country had only one world heritage property from the twentieth century on the list. India's World Heritage presence in modern architecture has substantially increased since then with additional listings, most notably the transnational inscription in 2016 of seventeen buildings as part of the "The Architectural Work of Le Corbusier," including the Capitol Complex at Chandigarh. Inclusion of the Bahá'í House of Worship in Delhi and other twentieth-century sites on the Tentative List further indicate increased awareness and promotion of this heritage in the country.

However, despite this progress, the significance of modern heritage in India is yet to be fully recognized. Conservation architects struggle to define the scope and values of the country's Modern Movement buildings. Considering the vast expanse of unprotected heritage in India, it is not surprising that very few of our iconic modern structures are protected and that even fewer are being consciously conserved. A clause within the Indian national and state heritage acts defines heritage structures as those that are over one hundred years old, a statute that bars most modern structures from protection. While twentieth-century urban heritage in the modern cities of Chandigarh and Bhubaneswar are well-protected through recognition and grading in the city master plans, singular modern landmarks across the country are vulnerable. We have suffered remarkable losses such as the demolition of the Hall of Nations at Pragati Maidan, New Delhi in 2017. Calls for the preservation of modern heritage, as advocated by Keeping It Modern, are therefore extremely critical.

Another challenge that modern architecture in India faces is the acceptance of "planning" as a critical part of the conservation process. Usually, project stakeholders are so eager to see immediate results that they compromise on research and planning, the basis for responsible implementation of any conservation work. It is rare to find grant programs like Keeping It Modern that fund technical analysis of building materials and research-based conservation management plans, which are setting an important benchmark for India's modern heritage.

Gandhi Bhawan at Panjab University was the first building in India to receive a Keeping It Modern grant, earning the award in 2015. I was fortunate to lead the team that completed the site's conservation management plan in early 2017. Currently, the university is organizing funds to implement the recommendations contained within the plan and to follow a similar approach for the preservation of other modern structures on campus.



Gandhi Bhawan
Panjab University
Pierre Jeanneret
Chandigarh, India
1961

I was also fortunate to take the helm on the development of a conservation management plan for the Government Museum and Art Gallery, Chandigarh, which received a Keeping It Modern grant in 2017. We're currently studying and analyzing the structure's context and climate to derive a planning model that encourages conservation of the building materials, internal environment, and exterior landscape, including aspects of passive control and preventive conservation. An interesting aspect of this plan is that the Getty Conservation Institute is undertaking a parallel, supporting study of Le Corbusier's three Museums of Unlimited Growth, of which Chandigarh is one, the other two being in Ahmedabad, India and Tokyo, Japan. The study involves environmental monitoring with the aim of developing a sustainable indoor museum climate control system.

The Keeping It Modern projects in India go beyond just preparation of singular conservation management plans. The results are being widely disseminated within professional and academic arenas and are serving as pilot cases for future projects related to the conservation of modern architecture within the country. Moreover, Keeping It Modern workshops are leading to capacity building of professionals by encouraging vibrant exchange among grantees from diverse parts of the world.

During the middle of the twentieth century, the city of Chandigarh served as a laboratory for modern architecture, with the future architects of India trained under Le Corbusier, Pierre Jeanneret, Maxwell Fry, and Jane Drew. Today, the city has the potential to yet again become a global laboratory for conservation of modern heritage, this time with Keeping It Modern projects serving as catalysts.

Salk Institute for Biological Studies
Louis Kahn
La Jolla, California
1965



Faculty of Architecture Building

Middle East Technical University

Altuğ and Behruz Çinici

Ankara, Turkey

1963



KEEPING IT MODERN OVERVIEW

The crowning achievements of modern architecture, from the Bauhaus buildings of 1925–26 by German architect Walter Gropius (1883–1969) to the planned city of Brasília (built in 1956–60) by Brazilian architects Lúcio Costa (1902–1998) and Oscar Niemeyer (1907–2012), have come to symbolize the artistic dictum “less is more,” along with other, more broad twentieth-century ideals of progress. With the architecture of the modern era becoming a historical legacy, ensuring its long-term conservation is increasingly a priority.

In 2014 the Getty Foundation launched the architectural conservation grant initiative Keeping It Modern. Focused on preserving significant twentieth-century buildings around the world, Keeping It Modern concentrates mainly on research and planning—activities that are essential to the long-term preservation of cultural heritage. A few implementation grants have also been awarded to exceptional sites that are advancing conservation practice and serving as models for the care of other twentieth-century buildings.

The term modern architecture encapsulates a period from the early 1900s to roughly 1980, a time when advancements in science, technology, and engineering set architects free from traditional structural requirements. During this era, architects embraced experimental materials and novel construction

techniques to create innovative structures that advanced new philosophical approaches to the built form.

Given that modern materials and systems were often untested at the time of construction, many twentieth-century buildings—some of which are now nearing one hundred years old—have begun to deteriorate. In fact, evidence suggests that modern buildings, although relatively young by preservation standards, have a life span roughly half that of more traditionally built structures. Many modern sites, including some of the most iconic, face problems such as water ingress, mechanical failure, cracked exteriors, outdated electrical wiring, and substandard energy performance. Furthermore, heritage professionals who care for these buildings frequently lack the scientific data they need to develop the necessary conservation protocols. Those dedicated to safeguarding modern architecture have signaled a growing urgency to preserve this heritage before it is too late.

Keeping It Modern grants are allowing conservation specialists to deeply investigate historical buildings and outline strategies for their long-term preservation. Such activities begin with scrutiny of the architect’s original intent combined with analysis of the building’s physical and material properties. Practitioners, for example, may examine archival materials,

Sevan Writers’ Resort

Gevorg Kochar and
Mikael Mazmanyan
Sevan, Armenia
1965



such as design notes and sketches, correspondence, and technical drawings, to gain insight into an architect's thinking. They may then test materials, such as flaking paint pigments or rusted exterior steel cladding, to determine conservation methods that align with the original purpose of the site.

Since launching, Keeping It Modern has supported fifty-two buildings of outstanding significance across the globe. Grantees have ranged from the Sidi Harazem Thermal Bath Complex in Morocco to Miami Marine Stadium in Florida and from Casa de Vidro in São Paulo, Brazil to the Sevan Writers' Resort in Sevan, Armenia. The projects—whether churches, stadia, once-private residences, or other building types—represent a variety of shared concerns that practitioners face when preserving modern architecture, from the aging of materials such as concrete and glass to the need for improved seismic standards. The vast majority of projects result in the creation of conservation management plans that guide a site's long-term maintenance and conservation policies.

Project Selection

Keeping It Modern grants are offered annually through an open competition. Potential projects are evaluated by a committee of international experts on such criteria as the prominence of the building's architect, the quality of design, the type and use of materials, the level of authenticity, the current state of preservation, plans for current and future use, and the potential to serve as a model for the conservation of other modern buildings.

The Foundation expects to offer Keeping It Modern architectural conservation grants through 2020. Although Keeping It Modern is a fully global initiative, the Foundation particularly encourages applications from Latin America, Eastern Europe, and the Far East.



Frederick C. Robie House
Frank Lloyd Wright
Chicago, Illinois
1910



Attendees of the 2018 Keeping It Modern Workshop hosted by the Twentieth Century Society.

Accomplishments

Reports to Guide Professional Practice

With five years of grantmaking under its belt, Keeping It Modern is well on its way to having a tangible, positive impact on the field of modern architecture conservation. The Getty is committed to sharing the results of completed projects with conservation professionals, architects, and other stewards of twentieth-century architectural heritage. To date, twenty grantees have published conservation management plans and/or technical reports, which capture research findings and recommendations for a given site's long-term care.

As a service to the field, the Foundation is making these reports freely available on its website through the Keeping It Modern Report Library (www.getty.edu/foundation/initiatives/current/keeping_it_modern/report_library/). Each downloadable document contains detailed information about a building's history and construction. Site visitors can filter projects by function (for example, school, church, performance venue) and material (brick, concrete, and metal, and so on) to allow for targeted research. The library is updated periodically as new reports are completed.

Networking among Global Stewards

Keeping It Modern has encouraged the development of global networks among conservation professionals. Each year, new Keeping It Modern awardees travel to London for a grant-funded workshop hosted by the Twentieth Century Society.

During sessions led by the Getty Conservation Institute, the grantees exchange knowledge with their peers about conservation challenges and learn how they can adopt values-based management practices through the Conservation Management Plan framework. The time spent together establishes a cohort of individuals who can turn to one another for further advice and counsel.

Around the world, project leaders are banding together to spread awareness of research-based planning for modern buildings. In Brazil and Armenia, grantees have orchestrated conferences to discuss successes, solve problems, and confer about local issues affecting their work. In East-Central Europe, two new grants awarded in 2018 for buildings in Georgia and Bosnia and Herzegovina—combined with earlier grants in Armenia, Kosovo, Poland, and Russia—are creating the potential for a robust network in the region.

Growing Local Capacity

Many Getty Foundation initiatives include an emphasis on training, and Keeping It Modern is no exception. Several grantees have incorporated training opportunities into their projects, helping to develop lasting local capacity. For example, a grant awarded in 2018 for the National Schools of Art of Havana in Cuba includes funds not only for a detailed study of the site but also for training opportunities for Cuban conservation professionals, which will help build local support and expertise.

Bauhaus Building

Walter Gropius
Dessau, Germany
1925



AN INVALUABLE DOCUMENT: THE CONSERVATION MANAGEMENT PLAN

Antoine Wilmering

Senior Program Officer, The Getty Foundation

While Keeping It Modern's catchy name might imply that it endorses a static, status quo approach to the preservation of modern heritage, quite the opposite is true. Keeping It Modern aims to advance the conservation of twentieth-century architecture by helping caretakers understand and manage the evolution of modern structures over time. The initiative's premise is, therefore, that managed change is what keeps modern architecture modern.

An excellent tool for plotting out the dynamic, long-term care of a site is the Conservation Management Plan (CMP). A relatively new development for the field, this comprehensive document defines the significance of a site and details the policies that should guide its continued preservation. It leverages what was once the prevailing document, the Conservation Plan, and takes it one step further, focusing on the permanent value of a site and the creation of research-based, long-term policy guidelines.

Over the past decade or so, CMPs have become increasingly accepted as conservation best practice. In fact, CMPs have become so instrumental in defining and guiding the preservation of cultural heritage that they are now frequently considered a requirement by project leaders and stakeholders, including for UNESCO World Heritage sites. The majority of the Keeping It Modern grants awarded to date by the Getty Foundation have included support for the development of CMPs.

In order for a CMP to be effective, however, it must incorporate benchmarks for a site that help stakeholders assess future change. In the realm of modern architecture—a genre whose origins are still so close to the present—a benchmark can be developed by scrutinizing the original intent of the architect and then outlining every aspect of the built structure. But how does one assess an architect's creative vision? Some ways include reflecting on the architect's oeuvre, studying the work of contemporaries, and assessing the spirit of the times when the site took shape. And to produce sound technical knowledge about the physical qualities of a site, specialists must test and analyse its materials and fabric, from construction to finish, whether purposely designed or not.

But to only consider a building's "internal" change—for example, deviations from the architect's vision, decay of original materials—would constitute too narrow of an approach. Of equal importance are "external" factors, such

as change in design tastes, shifts in function, building code upgrades, new safety and security issues, and fluctuations in energy use. Combining all of the above, stakeholders arrive at a statement of significance for the building and outline conservation principles and policies that guide repairs and capital improvements. The result is a long-term, values-based maintenance agenda.

A CMP becomes the backbone of all conservation actions, serving as both a record in time of a building's significance and an outline for when, where, and how specialists can and should intervene. One example of a grant-supported CMP is the document prepared for the Bauhaus-era Max Liebling House (1936), designed by Israeli architect Dov Karmi (1905–1962) and located in the White City of Tel Aviv. A UNESCO World Heritage site since 2003, the White City contains approximately four thousand Bauhaus style buildings of which about one thousand are listed and about two hundred are in urgent need of repair.

After nearly eighty years, the Max Liebling House—a former residential building turned into municipal offices—no longer served the city's needs. The development of a Getty-funded CMP helped guide local authorities in preserving the building and adapting it for reuse. The finished site will house the Israeli-German Center for Heritage and Architecture, a professional information and resource center for Bauhaus-style building owners in the White City. The CMP, a first for modern architecture in the State of Israel, leveraged significant support from the German federal government, and carries the potential to have considerable impact beyond the Max Liebling House.

The above, as well as other Getty-funded CMPs, are proving their value not only by saving important buildings but also by providing model plans that can guide the field as it looks to define and implement strategies for preserving architecture from the modern era. While the short-term result of the CMPs marks a shift from ad hoc repair approaches to managed conservation strategies, the long-term impact will only become evident in the future. And, if we agree that CMPs provide a roadmap for planning cyclical care, conservation, and maintenance schedules, then the journey will be smooth for preserving the important architectural legacy of the twentieth century for subsequent generations.



KEEPING IT MODERN FEATURED PROJECTS

The following nine projects are representative examples of the fifty-two buildings that have received Keeping It Modern grants.



Centennial Hall

A tour de force of structural engineering, Centennial Hall in Wrocław, Poland, was designed by German architect Max Berg (1870–1947) to celebrate the one hundredth anniversary of Napoleon’s defeat at the Battle of Leipzig in 1813. When completed in 1913, Centennial Hall was the largest reinforced concrete structure in the world and featured the biggest freestanding dome ever built. Widely recognized as one of the most important examples of early twentieth-century architecture, this UNESCO World Heritage site remains a popular venue for major conferences and cultural events.

A grant of 2014 allowed the city of Wrocław to develop a CMP to ensure the Hall’s long-term preservation. The project involved architectural analysis, including archival research and bibliographical research of all known publications about the site. Conservation experts undertook structural analysis of the building’s fabric, performing laser measurements to develop Building Information Modeling (3-D model-based mapping) and Finite Element Method Modeling (a numerical method for solving problems of engineering and mathematical physics) to illustrate Centennial Hall’s state of preservation. Both interior and exterior details were fully considered. Testing of surface

finishes helped determine the original paint color scheme and the factors that have damaged it over time. A survey of the composition and condition of the greenery in the surrounding areas informed recommendations for the revitalization of the historical landscape design.

All of this research was combined to inform a comprehensive CMP, the first of its kind in Poland. In a show of national support, the Polish government invited the Centennial Hall conservation team to present the plan at a conference celebrating the tenth anniversary of the Hall’s inscription on the UNESCO World Heritage List. In addition to offering recommendations for the Hall’s long-term care, the document asserts several mandatory stipulations: neither remodeling nor extensions can alter the building plans and architectural shape of Centennial Hall, and conservations agencies must provide annual, detailed inspections of the state of preservation of the building’s original elements. Such policies, and many more like them, reveal the deep dedication of stakeholders for preserving the integrity of this iconic Polish site, which for over a century has been at the epicenter of some of Europe’s most devastating conflicts, but which time and time again has prevailed to be enjoyed by future citizens.

Children's Library

Soon after its independence in 1957, postcolonial Ghana began a building campaign that reflected the country's optimism and established Accra as both the capital city and a center of West African modernism. An emblem of this movement is the Children's Library in Accra, designed in 1966 by the architectural firm of Nickson and Borys. The site employs a climate-sensitive design that ensures the building's effective functioning without the need for indoor temperature control, making the library a prime example of "tropical modernism." A deceptively simple facade, for example, forms a brise-soleil, which shields a series of semi-open-air spaces from direct sunlight, facilitating natural airflow and cooling. Owned by the Accra Metropolitan Assembly and maintained by the Ghana Library Board, the library is recognized as a National Heritage building by the Ghana Museums and Monuments Board.

Although the library was well maintained over the latter half of the twentieth century, several decades passed without any upgrades to the original design or materials. In 2016 a grant helped ensure that the building would be preserved to the highest standards moving forward. A group of local experts assembled an international team of specialists to

collaboratively research the library complex and develop a CMP. The project also included training for architecture students from universities in Ghana and the United Kingdom to provide them with experience working with modern methods and materials.

Once the investigation into the buildings was complete and the CMP finalized, the research results were shared with international and local audiences through an exhibition about the library's history. The long-term goal of local stewards is for the CMP to guide the Ghanaian government's policy to protect and preserve not only the library but also the country's abundant, postindependence architecture. To further this aim, stakeholders are leveraging the CMP to bolster a growing movement to place the library on UNESCO's list of World Heritage sites.





Einstein Tower

Completed in 1921, the solar observatory at the Leibniz Institute for Astrophysics Potsdam, also known as Einstein Tower, is the signature design of German architect Erich Mendelsohn (1887–1953). A paragon of German expressionism and the first solar tower telescope in Europe, the building was designed to support research into Alfred Einstein's theory of relativity. It continues to function as a research center today. Breaking away from conventional post and beam architecture, Mendelsohn crafted an organic and sinuous form to reflect new theories of the universe then in development. The use of reinforced concrete to create a smooth, unified skin over the building's brick substrate was innovative at the time and enabled an expressive plastic whole; however, this experimental combination of materials left the structure vulnerable to water infiltration, threatening the safety of the scientific equipment housed inside.

A grant awarded in 2015 supported an in-depth study of the building's moisture problems, created by the thermal stress of fluctuating seasonal conditions—a shared concern among concrete buildings in similar climates. Scientists performed hygrothermal simulations, studying the combination of moisture and heat, and how the two move through the building. They concentrated on the most damage-prone elements of the tower, and precisely measured the interior and exterior temperature and humidity conditions.

The results of these and other investigations were consolidated into a comprehensive CMP that governs the future care of the site. The plan includes guidelines for a new heating system that will be carried out with electrically operated radiators in order to have the smallest possible structural impact on the building scheme. Site managers have already obtained detailed architectural and engineering plans to perform other interventions, which promise to restore the Einstein Tower to a healthy condition in the years to come.

Gandhi Bhawan

Gandhi Bhawan, located at Panjab University in the city of Chandigarh, is one of the most celebrated examples of modernist architecture in India. Swiss architect Pierre Jeanneret (1896–1967) employed innovative cast concrete to evoke an abstract lotus flower, marrying angular lines with swelling organic forms, all fittingly surrounded by a large reflecting pool. The distinctive building reflects the result of a proposal in 1960 that established a Gandhi Bhawan (Gandhi Center) at each university in India in order to promote “the study of Gandhian ideals and his way of life.”

A grant in 2015 supported an in-depth technical study of the Gandhi Bhawan to address concrete deterioration. A team of conservation architects and scientists carried out a preliminary condition assessment, including sound testing and visual examination of each precast concrete panel. To perform the sound testing, experts tapped the surface of each concrete section with a dead blow hammer or mallet. Based on the subsequent vibrations, they were able to detect areas that could split or break. They also performed composition analysis of concrete samples to determine the water-cement ratio, a formula that reflects the concrete’s strength and durability.

Given the building’s complex geometry and height, the team used non-intrusive laser scanning to produce 3-D point cloud renderings that fully map the as-built structure. The results of these and many other detailed scientific investigations led to a CMP that paves the way for informed conservation and continued functionality of the site now and in the future.

The CMP is the first such document for a modern heritage structure in India, a country abundant in modern sites. Having gained independence in 1947, India was quick to embrace the progressive ideologies of the time, with regional governments across the country inviting both local and foreign architects to pursue forward-thinking designs. Due to this, the Gandhi Bhawan CMP is serving as an invaluable resource for the development of similar documents for other modern buildings in India. Already, Panjab University officials have remarked on how the project has instilled a sense of pride among university stakeholders, leading to increased conservation efforts for other modern heritage buildings on the campus.





Henry Luce Memorial Chapel

At the center of Tunghai University in Taiwan stands the Henry Luce Memorial Chapel. Designed in 1962 by Chinese American Pritzker prizewinner I. M. Pei (b. 1917) and completed by Taiwanese architect and artist Chen Chi-Kwan (1921–2007) in 1963, the chapel serves as a powerful example of early modernism while retaining a nod to traditional Chinese temples with its sweeping roofline. Although the chapel was originally to be constructed of wood, it was instead built using innovative in situ cast concrete. Its exterior is covered with yellow-glazed, diamond-shaped tiles that are inserted into the concrete, providing a striking contrast against the blue sky.

Structurally, Henry Luce Memorial Chapel is composed of four saddle-shaped slabs that are tied together by metal-framed windows fitted with single-paned glass. Although the chapel was designed to provide earthquake stability and durability in this typhoon-prone region, water leaks have developed over time, permeating the groundwork and hardening into efflorescence, a white or greyish powdery residue that mars building surfaces. The water penetration has also caused the concrete reinforcement to rust and expand, which in turn has created stress on the surrounding shells.

A grant awarded in 2014 supported the development of the chapel's CMP—the first ever for a Modern Movement building in Taiwan. The project included in-depth examination into the building's history, materials, and past conservation efforts, as well as research into much-needed weatherproofing and climate control measures. The Taichung City Government officially listed the Luce Chapel as a cultural asset in 2017, the Cultural Heritage Department pointing out that Tunghai University has set an example for other universities by proposing the listing of campus buildings as cultural assets. Then in January of 2019, Luce Chapel became the first modern building to be named as a National Monument on Taiwan's National Heritage List. In addition to demonstrating the history of postwar Christian education, these designations contribute greatly to the protection of historical assets and the preservation of other modern buildings throughout Taiwan.



Iglesia de Cristo Obrero y Nuestra Señora de Lourdes

The Iglesia de Cristo Obrero y Nuestra Señora de Lourdes, located in Atlántida, Uruguay, is the first independent commission of the country's celebrated architect and engineer, Eladio Dieste (1917–2000). Having forged his reputation by eschewing modern industrial materials in favor of locally available and affordable brick, Dieste refined a number of groundbreaking architectural features including freestanding vaults, undulating surfaces, and folded planes. His rigorous understanding of geometry and engineering enabled him to design the Cristo Obrero church as if its block-formed walls were fully pliable.

Cristo Obrero was fabricated with two layers of red bricks surrounding a pretensioned iron armature. Carefully placed windows and brick apertures contain colored glass that diffuse the interior lighting, and a bell tower—with perforated walls and an open circular staircase—ascends without a single support column or handrail. Although the local community maintained the church over the years, by the early twenty-first century the building was showing signs of age, including leaks

that required immediate attention. Compounding the need for repair was the fact that Dieste's engineering had never been fully understood, making it difficult to develop conservation plans without in-depth technical analysis.

To address this problem, a team of national and international experts used Getty support to embark on a rigorous study of the site, resulting in a comprehensive engineering study and conservation management plan. In one example, experts used state-of-the-art fixed scanners placed in different locations around the building to capture millions of tricoordinated points. The result was a 3-D digital topographical record of the church that contained a high level of geometric detail and accuracy. The record was used not only to analyze the church's characteristics and functional requirements but also to compare the existing structure with the architect's original drawings. The technical studies have shed light on Dieste's structural innovations and are now informing the conservation and care of Cristo Obrero, as well as of the architect's prolific portfolio across Uruguay and beyond.

Saint John's Abbey and University Church

In the 1950s, the Benedictine monks of Saint John's Abbey, located on the joint campuses of Minnesota's College of Saint Benedict and Saint John's University, made a daring choice. They commissioned Hungarian Bauhaus architect and noted brutalist, Marcel Breuer (1902–1981), to design a new church for the universities' growing monastic and student communities. In response to the clergy's call for a church that would be "an architectural monument to the service of God," Breuer unveiled a striking design that combined concrete and stained glass to create a masterful juxtaposition of levity and mass. Outside the building entrance, a monumental concrete bell tower stands in stark contrast to the church's perforated, honeycomb facade. Encased stained glass, as well as large skylights and windows, span the abbey's sides, flooding the church interior with light and balancing the massive concrete framing buttresses.

By 2015 the fifty-four-year-old structure—although still in good condition—was beginning to show signs of wear and tear. Portions of the concrete had cracked and become discolored (partly due to rainwater and the growth of

whitish lichen), and areas of reinforced steel were corroding. To address these issues and to gain a comprehensive understanding of the significance and state of preservation of the abbey, stakeholders requested grant support for a CMP.

With Getty funding, specialists examined every aspect of the abbey, from its concrete exteriors and stained-glass interiors to its heating system and lighting. The results, and accompanying recommendations, were compiled into a CMP that has gone on to serve as a guidepost not just for the care of the abbey but also for other significant Breuer buildings. Today Saint John's Abbey stands as the architectural centerpiece of nine buildings by Breuer on the university campus—the largest collection anywhere of a single modernist architect's work. The plan has informed the preservation of six of these buildings, widening the effect of the original Getty grant and affirming the fact that a conservation management plan can extend beyond its stated scope to improve the longevity of other modern masterpieces.



Sydney Opera House

Designed by Danish architect Jørn Utzon (1918–2008), the Sydney Opera House is a World Heritage site and cultural symbol of Australia's most populous city. Renowned for its highly recognizable, nested sculptural forms, the building innovatively uses exposed steel reinforced concrete to buttress its famous tile-covered "sails." For over fifty years, the Opera House has withstood exposure to a corrosive marine environment and millions of annual visitors. Although the concrete has held up well—having been designed to last two hundred and fifty to three hundred years—recent caretakers needed to make sure that a few high-risk portions could maintain their longevity and that the concrete, as a whole, could resist deterioration.

In 2014 the Opera House received a grant to support the research and development of a Concrete Conservation Framework. The framework is a strategy that provides a robust, logical, and replicable system for inspecting and testing the concrete, in order to allow building stewards to perform preventive conservation measures as needed. To develop the framework, a team of heritage experts spent two years

exploring noninvasive concrete testing methodologies, working alongside University of Sydney faculty and students to cultivate expertise in younger generations. They gathered crucial data about causes of concrete deterioration (including less-studied materials such as binders and sealants) and even researched the possibility of using robots to perform conservation work on the hard-to-reach tile sails.

Once the research was complete, stakeholders developed a concrete classification system to record and interpret condition-monitoring results. Research data was then fed into a digital management tool that links to a geospatial 3-D model of the site, informing everything from routine maintenance to specialized conservation treatment. Now that the data is consolidated, the several thousand staff members at the Opera House can reference the repository daily to inform their work. Furthermore, the system allows caretakers to counter the unpredictable effects of exposure to the elements and thus continue a tradition of outstanding heritage management and conservation practice—paving the way for tourists around the world and the Australian people to continue enjoying the Opera House into the twenty-first century.





Villa E-1027

On the rocky hillside shore of southern France's Côte d'Azur sits the Villa E-1027 conceived by Irish-born Eileen Gray (1878–1976), one of the most innovative furniture designers of the modernist era. Constructed between 1926 and 1929 as a retreat and vacation home for Gray and architectural critic Jean Badovici, the villa is a model of Gray's uniquely balanced modernist approach, which attends to the inhabitants' practical and spiritual needs. In addition to paying close attention to the furniture and interior design of the home, Gray also carefully planned the surrounding landscape and gardens. Gray's vision was compromised, however, when Baldovici brought in famed Swiss-French architect and neighbor Le Corbusier (1887–1965) to paint seven murals inside the villa without Gray's consent. Although not part of her original design intent, the murals remain today as part of the building's history and fabric.

In the decades following 1960, the house endured numerous owners, environmental stress, and general neglect. A recent restoration project in 2010 stabilized the site, and now the villa is under the care of the Association Cap Moderne, a nonprofit organization committed to the long-term maintenance of this

Monument Historique. The organization's analysis revealed the need for a comprehensive CMP, as well as additional scientific research to mitigate the key environmental challenges of the site: exposure to harsh sea air and water runoff from a surrounding steep slope.

In 2016 a Getty grant allowed for a preeminent conservation architect and an experienced landscape architect to develop the plan and guide the research. The project included testing of the reinforced concrete, a scientific study of the original color scheme, climate control research, a furniture study, and scientific analysis of the Le Corbusier murals to inform their future restoration. A large portion of the interior study focused on finding the most sympathetic and elegant solution for conserving and promoting Gray's original design while also preserving Le Corbusier's later interventions. The resulting conservation plan not only ensures the thoughtful, nuanced care of Villa E-1027 but also informs an effort to provide public access to the overall site, which includes three adjacent buildings designed by Le Corbusier.



**Le Corbusier's
Apartment and Studio**
Le Corbusier
Paris, France
1934

GRANTS AWARDED 2014-2018

2014



Paimio Sanatorium

Alvar Aalto
Paimio, Finland
1933



Eames House

Charles and Ray Eames
Pacific Palisades, California
1949



Le Corbusier's Apartment and Studio

Le Corbusier
Paris, France
1934



Frederick C. Robie House

Frank Lloyd Wright
Chicago, Illinois
1910

GRANTS AWARDED

2014



Miami Marine Stadium

Hilario Candela
Miami, Florida
1963



Salk Institute for Biological Studies

Louis Kahn
La Jolla, California
1965



Centennial Hall

Max Berg
Wrocław, Poland
1913



Sydney Opera House

Jørn Utzon
Sydney, Australia
1973

2015



Max Liebling House

Dov Karmi
Tel Aviv, Israel
1937



Faculty of Architecture and Urban Planning Center

University of São Paulo
João Batista Vilanova Artigas and Carlos Cascaldi
São Paulo, Brazil
1969



Henry Luce Memorial Chapel

Tunghai University
I.M. Pei and C.K. Chen
Taichung City, Taiwan
1963



Einstein Tower

Erich Mendelsohn
Potsdam, Germany
1921

GRANTS AWARDED

2015



Hill House
Charles Rennie Mackintosh
Helensburgh, Scotland
1904



Saint John's Abbey and University Church
College of Saint Benedict and Saint John's University
Marcel Breuer
Collegeville, Minnesota
1961



Gandhi Bhawan
Panjab University
Pierre Jeanneret
Chandigarh, India
1961



Arthur Neiva Pavilion
Oswaldo Cruz Foundation
Jorge Ferreira
Rio de Janeiro, Brazil
1951



Gropius House
Walter Gropius
Lincoln, Massachusetts
1938



Het Schip
Michel de Klerk
Amsterdam, The Netherlands
1920



Rietveld Schröder House
Gerrit Rietveld
Utrecht, The Netherlands
1924



Strutt House
James Strutt
National Capital Area, Canada
1956

GRANTS AWARDED

2015



Arts Building and Cloister

George Nakashima
New Hope, Pennsylvania
1967



Università degli Studi di Urbino Carlo Bo, "Collegi" Buildings

Giancarlo de Carlo
Urbino, Italy
1982



Unity Temple

Frank Lloyd Wright
Oak Park, Illinois
1908



Jewett Arts Center

Wellesley College
Paul Rudolph
Wellesley, Massachusetts
1958

2016



Villa E-1027

Eileen Gray
Roquebrune-Cap-Martin, France
1929



Casa de Vidro

Lina Bo Bardi
São Paulo, Brazil
1952



First Presbyterian Church

Wallace Harrison
Stamford, Connecticut
1958



Iglesia de Cristo Obrero y Nuestra Señora de Lourdes

Eladio Dieste
Atlántida, Uruguay
1961

GRANTS AWARDED

2016



Children's Library

Nickson and Borys
Accra, Ghana
1962



Liverpool Metropolitan Cathedral

Sir Frederick Gibberd
Liverpool, England
1967



Sevan Writers' Resort

Gevorg Kochar and Mikael Mazmanyan
Sevan, Armenia
1965



National Library of Kosovo

Andrija Mutnjaković
Prishtina, Kosovo
1982

2017



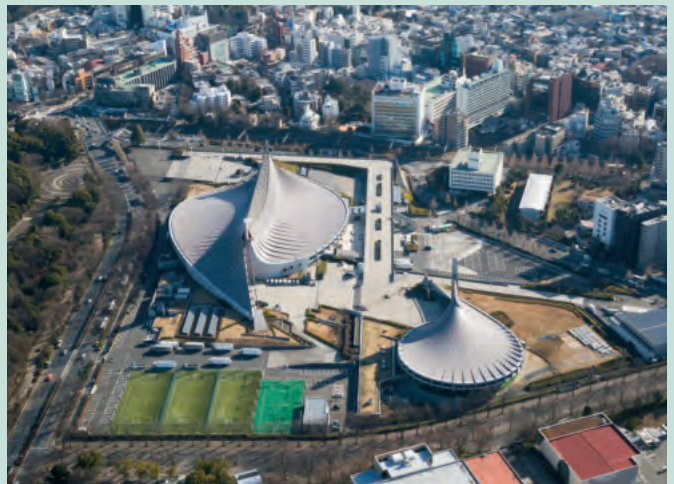
Coventry Cathedral
Sir Basil Spence
Coventry, England
1962



Boston City Hall
Kallmann McKinnell and Knowles
Boston, Massachusetts
1968



Sidi Harazem Thermal Bath Complex
Jean-François Zevaco
Sidi Harazem, Morocco
1958



Yoyogi National Gymnasium
Kenzo Tange
Tokyo, Japan
1964

GRANTS AWARDED

2017



Faculty of Architecture Building
Middle East Technical University
Altuğ and Behruz Çinici
Ankara, Turkey
1963



**Museu de Arte de São Paulo
Assis Chateaubriand**
Lina Bo Bardi
São Paulo, Brazil
1968



Government Museum and Art Gallery
Le Corbusier
Chandigarh, India
1968



Price Tower
Frank Lloyd Wright
Bartlesville, Oklahoma
1956



Melnikov House
Konstantin Melnikov
Moscow, Russia
1929



Bauhaus Building
Walter Gropius
Dessau, Germany
1925



Stadio Flaminio
Università degli Studi di Roma "La Sapienza"
Pier Luigi Nervi
Rome, Italy
1960

GRANTS AWARDED

2018



Gateway Arch
Eero Saarinen
St. Louis, Missouri
1965



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



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



Engineering Building

University of Leicester
James Stirling and James Gowan
Leicester, England
1962



History Museum of Bosnia and Herzegovina

Boris Magaš, Edo Šmidihien,
and Radovan Horvat
Sarajevo, Bosnia and Herzegovina
1963

GRANTS AWARDED

2018



Rashid Karami International Fairground
Oscar Niemeyer
Tripoli, Lebanon
1975



The National Schools of Art of Havana
Ricardo Porro, Vittorio Garatti, and Roberto Gottardi
Havana, Cuba
1964



Salk Institute for Biological Studies
Louis Kahn
La Jolla, California
1965



School of Mathematics
 Università degli Studi di Roma "La Sapienza"
 Gio Ponti
 Rome, Italy
 1935



**Università degli Studi di Urbino Carlo Bo,
 "Collegi" Buildings**
 Giancarlo de Carlo
 Urbino, Italy
 1982



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

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Strutt House. Photo: Titania Truesdale

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Coventry Cathedral
Sir Basil Spence
Coventry, England
1962





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