

# Five Points for Preserving Twentieth-Century Architecture. A Conservation Management Plan for the National Art Schools of Cuba



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**Abstract** The National Art Schools of Cuba were designed immediately after the Castro revolution (1961–64) by Ricardo Porro, Vittorio Garatti, and Roberto Gottardi to accommodate the integrated teaching of various art forms: visual arts, theatre, music, dance, and ballet. Although the Schools are included in the WMF list of 100 most endangered sites (2000), the UNESCO Tentative List (2003), and the National Register of Monuments (2010), a scientific approach to their sustainable conservation has long been lacking. The conservation plan prepared between 2018 and 2020 includes five lines of action: documentation, architectural preservation, landscape protection, environmental sustainability, and management. The plan has developed a clear list of priorities and practical solutions to the most urgent needs, such as the conservation of concrete and the adaptive reuse of abandoned parts, also in combination with themes that are ancillary to architecture but are also essential to its survival, such as the risk of flooding. The plan also discussed the “statement of significance” of this architectural masterpiece, involving different stakeholders (designers, owners, users) and other points of view (local, national, and international). In this way, the writing of the CMP was an exceptional collaboration experience between Italy, Cuba, and the United States.

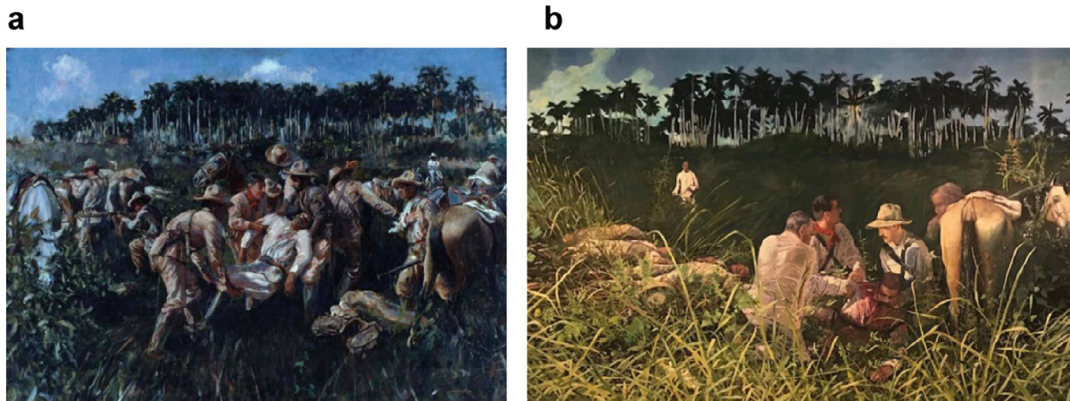
**Keywords** Tropical modernism · Thin-tile vaults · Reinforced concrete · Flood risk

## 1 Rectificaciones

In 2017 Cuban painter José Manuel Mesías painted *Rectificaciones a la obra de Armando Menocal, “La muerte de Maceo”*, where he corrected a previous work dating back to 1908, portraying the killing of a lieutenant-general of the liberation army during the War of Independence (Fig. 1a,b). Operating from a contemporary

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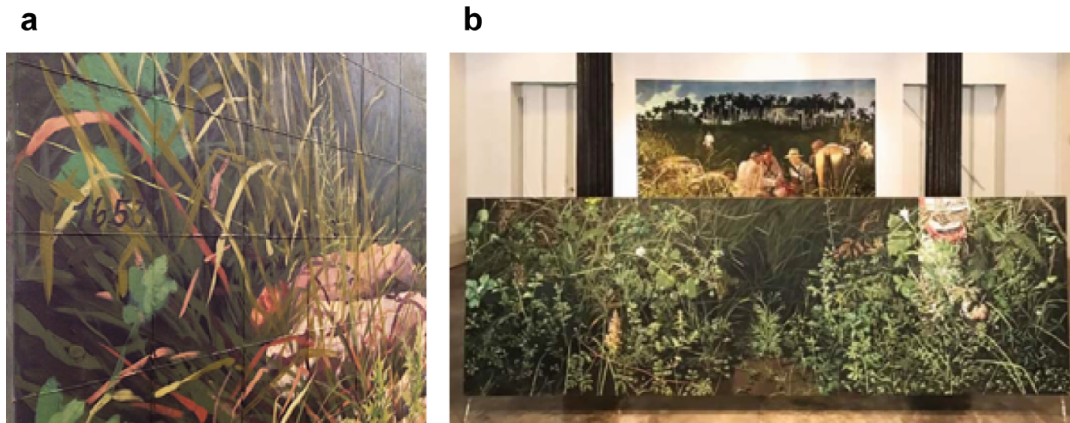
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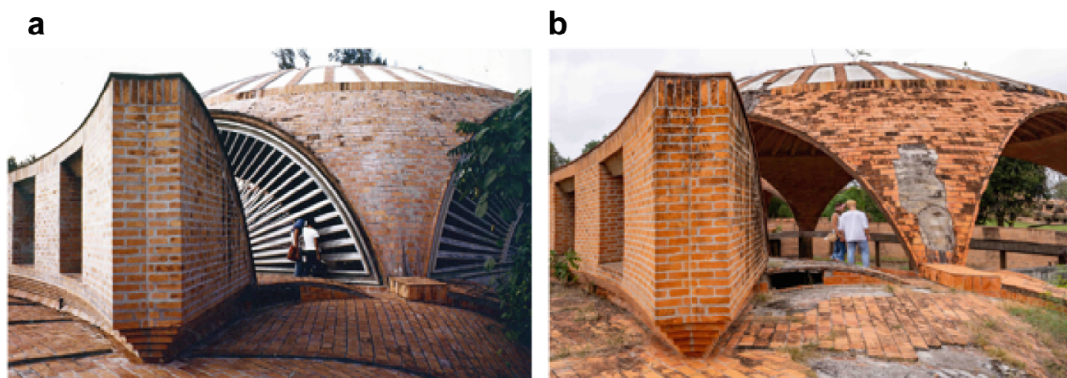
**Fig. 1** **a** Armando Garcia Menocal, *La muerte de Antonio Maceo*, 1908 (*Source* wikipedia.org/Armando\_Menocal\_1.jpg, last accessed 2023/10/08), **b** José Manuel Mesías, *Rectificaciones a la obra de Armando Menocal “La muerte de Maceo”*, 2017. Courtesy of the artist, photo by Davide Del Curto

and more detached historical perspective, Mesías liberated the early 1900s painting from any emphasis and distortions [1]. Mesías set the point of view very close to the wounded hero lying on the ground, unlike in Menocal’s picture, where the companions support lieutenant-general Maceo at the center of the scene, in a classical layout. The result is a less rhetoric and more natural composition, evoking the humanity of the wounded man and calling forth the smell of the prairie. Moreover, Mesías artificially applied a grid to the surface of the canvas, thus giving the painting the immediacy and neutrality of a photographic or even photogrammetric shot. As further proof that such pictorial-historiographic revision work is based on a scientific method, Mesías surrounded the main picture with a series of secondary canvases dedicated to the taxonomic and botanical examination of the tropical prairie where the central scene of the dying hero takes place. Mesías accurately portrayed details of individual blades of grass two or three times greater than the real scale, thus simulating the zoom effect of a scientific photo-documentary and obtaining an unexpected visual result (Fig. 2a,b).

Like Mesías’s work, we might affirm the Conservation Management Plan (CMP) for the National Art Schools of Cuba (NAS) has operatively continued John Loomis’s historical–critical updating, and this is not just aimed at celebrating the memory of utopia. The CMP overcomes the idea of an unfinished dream of architecture and focuses on the scientific assessment of the as-built architecture. It is a basis for designing multiple sustainable development scenarios with contributions from all stakeholders (Fig. 3a,b).



**Fig. 2** **a** José Manuel Mesias, *Rectificaciones a la obra de Armando Menocal “La muerte de Maceo”*, 2017. Detail with grid and time. Courtesy of the artist, photo by Davide Del Curto, **b** *Hortus conclusus. Estudio de plantas de la mitad inferior del cuadro base*, 136 × 425 cm. Courtesy of the artist, photo by Davide Del Curto



**Fig. 3** **a** Looking at Vittorio Garatti’s school of ballet in 1970. Photo by Lorenzo Carmellini, **b** Respecting the vision, changing the view. Looking at Vittorio Garatti’s school of ballet 50 years later (1970–2020). Photo by Federica Allegretti

## 2 A Myth of Architecture: Modern, Heroic, and Tropical

According to the mythology that has accompanied the narrative of this architecture for seventy years, Fidel Castro and Che Guevara had a moment of relaxation at the Havana Country Club in the aftermath of the revolutionary triumph. Trying their hand at an improbable game of golf, they dreamed that Cuba would soon become a point of reference for all Latin America and lead the subcontinent in the fight against the slavery of capitalism. According to Che Guevara’s Pan-American vision, Cuba would have inspired that liberation by spreading not only the socialist political-economic model but also a cultural message based on freedom, education, creative amenities, art, and music of the Caribbean.

To make that dream come true, Fidel Castro called three young architects, two of whom were under thirty years old and still little experienced. He ordered them

to transform that tropical green into a great art school open to young people from all over the Third World. He also ordered them to hurry because the Revolution could not wait. We can imagine the enthusiasm of those three young architects when the *Comandante* called them to participate in a political wave that aimed to rewrite the rules and build an equal world, their state of mind in those feverish months of work, when they had the chance of creating in total freedom, without any limits or restrictions, thus experiencing an ideal and unrepeatable condition for any architect [2].

Ricardo Porro (1925–2014), Vittorio Garatti (1927–2023), and Roberto Gottardi (1927–2017) designed five revolutionary buildings, each dedicated to teaching a form of art: music, visual arts, drama, dance, ballet. Each worked independently based on specific standard criteria such as free inspiration from the forms of nature, the absence of borders and fences, the use of bricks and Catalan vaults.

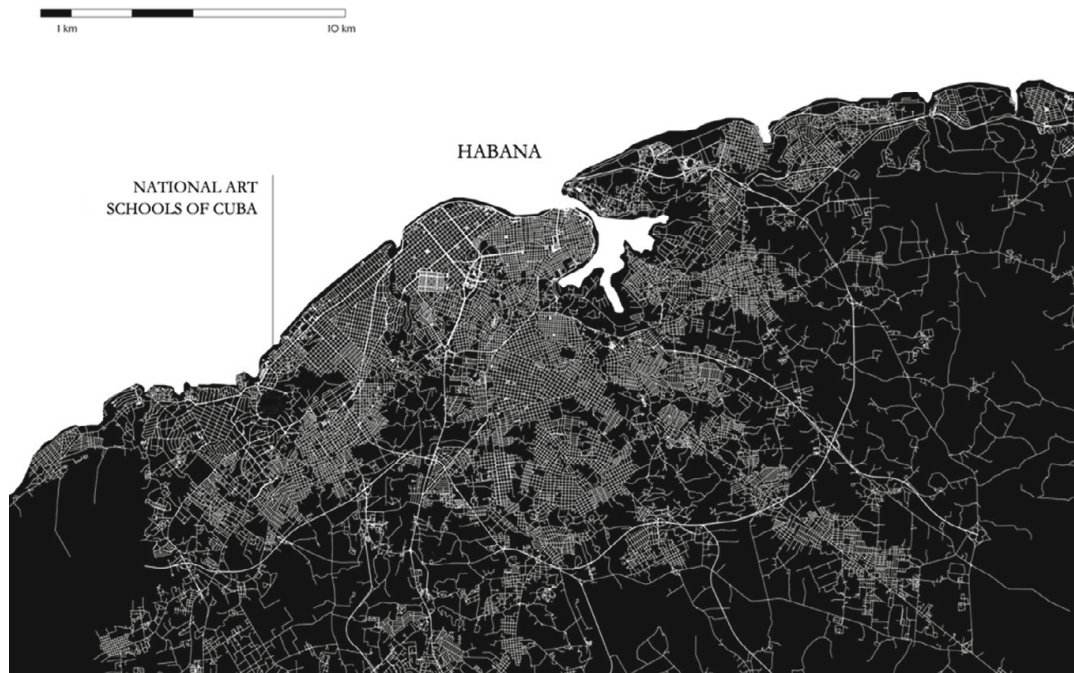
Ricardo Porro designed the Dance School, whose plan represents a sheet of glass broken by a blow, an architectural metaphor of the revolution, which disrupts the status quo and creates vital confusion. Porro also designed the School of Visual Arts, taking inspiration from the sensual shapes of the female body. Roberto Gottardi designed the Drama School, where he evoked some architectural features of Venice in a labyrinth of narrow passages and little courtyards. Vittorio Garatti created the Ballet School, taking inspiration from the foliage of tropical trees and the domes of Labrouste's library in Paris. He also designed the Music School by retracing John Wood's Royal Crescent in Bath. As a result, the building looks like a long snake following the hill's profile and should have included a gigantic concert hall which, however, was never built.

These visionary buildings arose on the edge of the 18-holes golf course in Havana, resulting from the subdivision of an agricultural property (Finca Lola) concluded in 1911 [3]. The area also included other buildings, such as the Country Club, which is now the seat of the rectorate, the library, and other minor buildings. This wonderful green area of over fifty hectares alternates the bright green of the English lawn and the dark green of the tropical ficus and carob trees. The Quibù River crosses the park before flowing into the Caribbean Sea a few hundred meters downstream, adding to the beauty of the landscape but also exposing the complex to the risk of flooding (Fig. 4).

### 3 Revolution of Forms

Once the post-revolutionary enthusiasm was over, the construction of these buildings was interrupted and the three architects were forgotten, if not ostracized, because of their alleged excess of individualism and narcissism that did not fit well with the new course of real socialism. The National Art Schools were forgotten by international critics and the tropical vegetation grew up to literally bury them. The first time John Loomis visited Havana, the Schools appeared to him like the remains of a pre-Columbian city hidden by the forest, or an archaeological treasure sunk in the





**Fig. 4** Habana and the National Art Schools of Cuba

Caribbean Sea, a forgotten architectural treasure waiting to be discovered... and this is just the dream of each young researcher in architectural history! John Loomis published “Revolution of forms” in 1999 and the success of this book (translated into Spanish and Italian) literally brought the Schools out of the oblivion into which they had sunk [4]. Finally, thanks to a scientific study based on documentary and comparative research, “Revolution of forms” set the forgotten National Art Schools of Cuba in the framework of international modernism, freeing them from local disputes and interpretative distortions and giving them a place in the history of twentieth-century architecture.

Following this critical fortune, the World Monuments Fund included the NAS in the list of the “100 most endangered sites in the world” at the beginning of the 2000s. This decision consolidated the perception of the architectural and cultural value of these buildings both inside and outside the borders of Cuba and promoted an international debate over their conservation. As a result, the NAS were registered in the UNESCO Tentative List (2003) and, finally, also in the list of national monuments of Cuba (2010), thus being considered a building of historical value and worthy of protection.

Moreover, the Cuban authorities promoted the restoration of the School of Visual Arts and the School of Modern Dance, the only two buildings out of five that had been completed and regularly put into operation. However, the restoration was not supported by a proper research campaign and a scientific debate adequate to the importance of the buildings [5]. As a result, the restoration implemented poor structural solution due to interpretative mistakes and therefore worsened the stability of the buildings rather than consolidating it [6].

Almost at the same time, in 2012, Cuban dancer Carlos Acosta, star of the Royal Ballet in London, offered to recover the ruins of the unfinished Ballet School as a location for his dance academy [7]. Sir Norman Foster prepared a restoration project, but Vittorio Garatti protested violently, demanding to be involved in the project and claiming respect for his copyright as the original designer. He wrote a public letter to Fidel Castro to denounce the capitalist attempt to dismember the remains of the revolutionary dream. The political controversy that followed his words thwarted any effort, and the only result was the abortion of Acosta's initiative. He therefore found another location for his academy, and the Ballet School remained an abandoned ruin [8].

#### 4 A 5-points CMP for Modern Architecture

Today, the National Schools of Art present both conservation and management issues. On the one hand, we have a masterpiece of modern architecture in a terrible state of conservation and a national monument that requires protection and repairs after seventy years of neglect. On the other hand, we have an arts academy with a robust teaching model based on integrating visual arts, music, dance, and theatre that continues its educational mission despite countless difficulties. To address this double challenge, as early as 2004 the Cuban authorities developed a *Plan Rector* aimed at the strategic management of the transformation of this large complex. However, the results were poor due to a lack of resources and failure to define a clear strategy and set priorities. The *Plan Rector* thus proved to be a weak management tool during the above-mentioned restoration of the Schools of Dance and Visual Arts and the attempts to repair the Ballet School.

Building on that precedent, between 2018 and 2020 the Getty Foundation's Keeping It Modern program funded the drafting of a new Conservation Management Plan. The activity was led by Politecnico di Milano together with Fondazione Politecnico di Milano and in collaboration with the University of Parma, Princeton University, Universidad des Artes de Cuba, and Assorestauro, the Italian association of producers of materials, equipment, and companies specialized in the restoration sector. The research was carried out in Italy, Cuba, and the US involving architects, archivists, structural engineers, hydraulic engineers, students, and professors.

The Conservation Management Plan follows the methodology defined by ICOMOS Australia in 2013 based on the experience of the Sydney Opera House and the Burra Charter and provides for five operational phases. It represents an important step in the path—started fifty years ago—toward the enhancement of twentieth-century architecture as part of the built heritage and its protection. The NAS CMP covers all the five revolutionary buildings, thanks to the skills of five international partners, and is structured in five WPs (Working Packages): (1) Documentation, (2) Conservation, (3) Flood-risk assessment and landscape protection, (4) Environmental sustainability and energy efficiency, (5) Integrated information management and adaptation strategy. The result is a 1600-page report involving over

seventy specialists from three countries who explored 600,000 m<sup>2</sup> of green area and over 40,000 m<sup>2</sup> of buildings corresponding to more than 500 rooms and 40 domes.

## 5 CMP as Research

The CMP for the National Schools of Art of Cuba was conceived by a university with expertise in the preservation of architectural heritage and the support of two more universities specialized in structural engineering. Preparing a CMP was thus an excellent opportunity for doing applied research in the field of architectural preservation and carrying out the first systematic study of this modernist masterpiece. The research team carried out as-built analyses, technical surveys, and site tests. As-built architecture was the primary source of information instead of only archive documents or literature. Therefore, in terms of methodology, preparing a CMP is the opportunity for investigating twentieth-century architecture by applying the same, well-established method used for all historic buildings, which is culturally based on the material history of the built environment [9]. According to Fernand Braudel, the *École des Annales* and the culture wave derived from the *Nouvelle histoire*, the material history of the built environment is one of the micro-stories or “particular stories” that form the history of material civilization. The material history of the built environment differs from the history of architecture. The latter stems from the history of art and identifies and retraces a succession of periods dominated each by a certain movement, a formal style, a school, or a single master. However, this type of history is not sufficient to support those conservation activities that are the goal of any research on architectural heritage. The material history of the built environment combines the methods of historical-archival analysis with the *Bauforschung*, i.e., the post-classical archeology applied to the built environment [10] and based on the direct survey of buildings.

This is not new for historic buildings, but it is often so for twentieth-century architecture, which due to its young age, has rarely been studied with this method. Therefore, drafting a CMP has been the first opportunity to carry out such a systematic study with the primary objective of preserving the authenticity of these buildings. We know that twentieth-century buildings were constructed with innovative, highly experimental, and often unprecedented techniques and materials that had never been tested before. We are also aware that architects of the period focused most on designing highly creative forms without controlling every detail, and many construction issues were decided directly on the building site. For this reason, when investigating twentieth-century architecture with the *Bauforschung* method, researchers often encounter significant differences between the as-built work and the information contained in the original project drawings, or even between the narratives of the different architects, who sometimes show not to be completely aware of all the construction aspects of the works they designed, despite these aspects are often crucial to the final architectural outcome.

This is just the case of the NAS. Starting from previous findings from Princeton University, the drafting of the CMP redefined the structural system used in the complex [11]. By means of archival research, on-site analyses, and IR-survey, it was possible to prove that this revolutionary architecture was not created only by adopting the Catalan vaulting technique, as they have believed for the last sixty years, as instead, it was created using a mixed structure combining reinforced concrete and thin-tiles vaults [12]. The reason that Vittorio Garatti, Roberto Gottardi, and Ricardo Porro never explicitly admitted the fundamental role of reinforced concrete is still unclear, although it is evident that those iconic buildings would simply not exist without this material. Since every work of architecture results from co-authorship, even though some of the co-authors may remain hidden [13], it would be worth to further investigate the role of engineers Edoardo Esenarro, Isabelita Wittmarc, and Ilda Fernandez, who contributed to the project by conceiving and calculating this ingenious “invisible concrete” and whose co-authorship deserves to be fully recognized [14].

Such results confirm the hermeneutic potential of any conservation and restoration activity, including drafting a CMP. By (ideally) dismantling and reassembling a building, we highlight new and often unexpected details, thus supporting an innovative and research-based interpretation [15].

Historic documents remain fundamental and need to be managed by specialized archivists and not only architects or arch-lovers as it often happens with twentieth-century architecture. Historical documentation of the NAS was spread over more than six institutional archives and at least five private holders in four countries. To bring order in such a complicated framework, we settled the structure of an archival superfund [16] for collecting the results of any current or future research and thus contribute to the building of knowledge, just like the Princeton Library has recently done by ordering and making publicly accessible Roberto Gottardi’s archive.

Alongside the consequences on a historical–critical level, the discovery that the NAS are mainly made of reinforced concrete has implications for their preservation; the pilot restoration site and the workshops organized in Havana in collaboration with Assorestauro focused precisely on these implications. Therefore, twenty years after John Loomis’ “Revolution of forms” had brought the NAS into the scientific debate on international modernism and had given them a place in the history of twentieth-century architecture, the CMP brought the NAS into the global discussion on how to practically preserve modernist architecture, where preserving concrete is one of the core issues (Fig. 5).

## 6 Alongside Preservation

Besides documentation, on-site analysis, and material preservation, the CMP tackled some lateral issues of architectural conservation, such as the hydraulic risk in the climate change scenario. The whole area is exposed to the risk of frequent floods from the Quibu River, due to its proximity of the Ocean and the changes occurred





**Fig. 5** Pilot site for reinforced concrete's restoration. Courtesy of Assorestauro, photo by Davide Del Curto

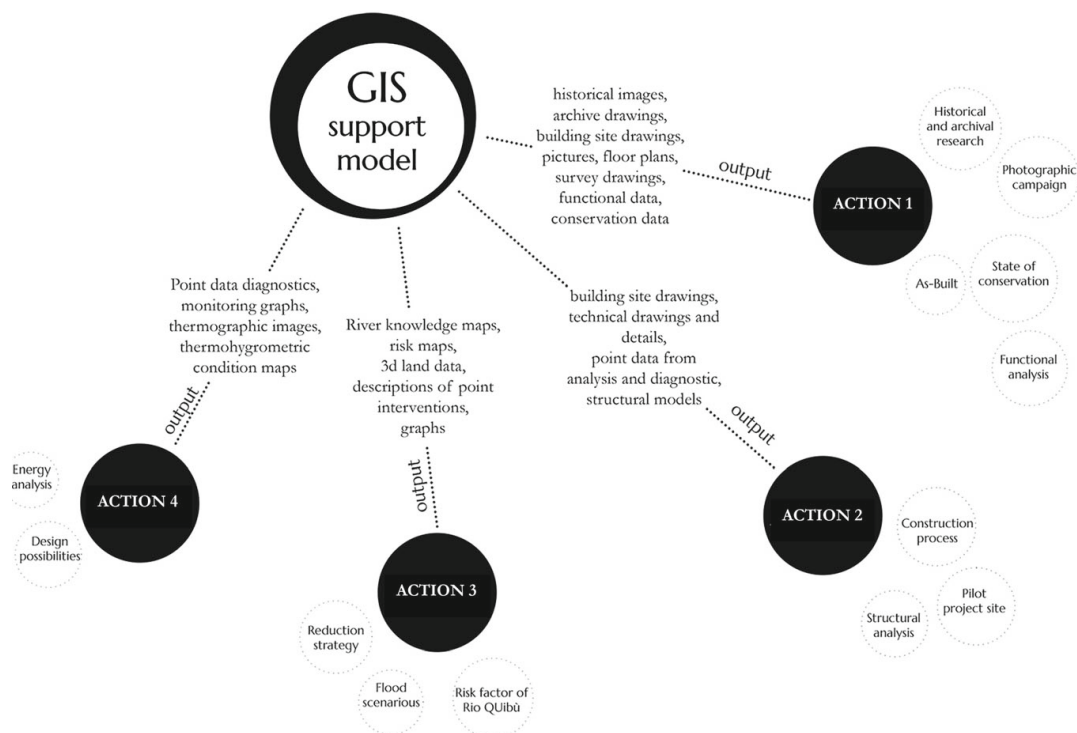
in the riverbed in the early 1900s, when it was artificially modified and adapted to the layout of the golf course. Subsequently, this artificial landscape offered Vittorio Garatti a perfect river meander to set up the Ballet School. However, he did not realize the building would have been exposed to flood risk and that this would have become ever more frequent due to climate change. Mitigating the flood risk is clearly a priority for preserving the NAS, even more than repairing concrete or thin-tile vaults. A team of hydraulic engineers joined the preparation of the CMP by developing a digital model that predicts the risk of flooding for each building and sets solutions to mitigate this risk in both short and long-term scenarios [17].

The CMP also analyzed the entire complex, room by room, and assessed its state of conservation, current use (200 rooms out of 500 are today completely unused), level of authenticity, and tolerance for change, that is how much each part of the complex could withstand new restoration works or transformation. Based on this investigation, we have locally assessed the level of significance, both at the scale of the single building and at the scale of the entire complex. These data were organized and managed based on a GIS [18] (Fig. 6 and Fig. 7).

Finally, the Plan defined some guidelines for planning spaces' restoration and adaptive reuse and addressing future transformations. Ricardo Porro, Roberto Gottardi, and mostly Vittorio Garatti based the architectural design of the NAS on a tight functional analysis of each single school, where they assessed the number, dimension, and position of each room, depending on its specific function. That



**Fig. 6** Ballet School flooding, January 2019, photo by Davide Del Curto



**Fig. 7** The conservation management plan's structure for the National Art Schools of Cuba

organicist-modernist architecture was thus grounded on entirely rational architectural thinking, and the idea, typical of the twentieth-century idea, that form follows function. However, the educational programs have changed a lot over time, and today, after two national reforms of education, the NAS are now very different compared to the Sixties. The teaching manifesto does include ballet, and therefore, one might ask what the purpose is of restoring Garatti's unfinished School and what form of adaptive reuse best suits it. Roberto Gottardi developed four projects to complete the Theater School between 2001 and 2011 in response to four different educational-functional programs of the Ministry of Education, but none of them was realized. In the meantime, the new departments of "Conservation of Cultural Heritage" and "New Media and Communication" are attracting more and more students due to the training and job opportunities they offer. However, these two departments are outside the iconic but unfinished buildings from the 1960s. We may therefore ask: to what extent the iconic architecture of the 1960s, firmly designed for a functional program that no longer exists, is today capable of accommodating the current educational manifesto of the ISA, the University of the Arts of Cuba? How much can those revolutionary forms follow the contemporary function and today's will of modernization? It is a crucial issue because if the answer was yes, architectural preservation and school management could collaborate, while on the contrary, if the answer was no, they could have different or even antithetical targets.

## **7 CMP as a Tool for Discussion and Inclusion**

In drafting the CMP, we asked various stakeholders the above-mentioned question on the antinomy between architectural preservation and school management, we collected their answers and promoted dialogue among each other:

- Vittorio Garatti, who joined the research since the very beginning: the NAS have been an unfinished dream for over sixty years and claims to be completed.
- Most international scholars and architecture enthusiasts: the NAS are an icon of the post-revolutionary wave and represent a hypostatized image of that period.
- The Monuments Office of Cuba: the NAS are architectural monuments to be protected by controlling risk factors.
- The Cooperation Agency of Cuba: the NAS are an opportunity to implement international cooperation projects in a sector attractive to foreign financiers, such as music and the arts.
- The users (teachers, students, rector): the NAS are simply a modern university of the arts asking for a comfortable place to teach and learn, with a certain degree of indifference to the fate of the architectural ruins from the 1960s.

Such debate has occurred perhaps for the first time since the 1960s. It proves that the CMP process is effective in promoting cooperation and boosting the decision-making process, more than (or before) any architectural design as the ones aborted in 2012 (Ballet School), 2001–11 (Drama School), and 2016 (Music School). These





**Fig. 8** Dancing over the ruined roof of Vittorio Garatti's school of ballet. Photo by Federica Allegretti

projects were designed by great architects but were not adequately supported by an open discussion and the sharing of objectives and expected results. Moreover, each stakeholder has specific requests, priorities, and needs for economic resources which nowadays in Cuba can only come from abroad through international collaboration or cooperation projects. Therefore, the CMP has clarified the complex's priorities, promoted dialogue among the stakeholders, and made the NAS a more reliable entity for global investors (Fig. 8).

[...] architecture must no longer be that of the great utopian projects of the 60s, the years of megastructures, or the dreams of Superstudio. Today, only what is interesting is possible; Yona [Friedman] and others then developed an essential criticism of traditional architecture and indicated that the model of the architect, fundamental for us, is no longer understood as a great author of visionary designs but is rather seen as a mediator, a figure capable of relating both to those below and those above. The time of charismatic architects as the Renaissance was, is truly over; today, we need the role of the architect to be recognized greater social legitimacy if we want to change things [19].



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