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Museums Facing their Social and Environmental Responsibilities: Towards an Ethical and Sustainable Model

SERIES OF ONLINE DEBATES, 2023

**Museums Facing
their Social
and Environmental
Responsibilities:
Towards an Ethical and
Sustainable Model**

*Series of Online Debates
May-October, 2023*

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Foreword



The concept of sustainable development was formalized at the United Nations Earth Summit in 1992 in Rio de Janeiro, along with its three pillars: economy, environment and society. These are the principles that underlie the current re-evaluation of the museum model and are inspiring profound change.

In February 2022, ICOM France organised a first ethics debate entitled “Museums, Credible Actors of Sustainable Development?” On 13 December 2022, a second meeting was devoted to reassessing preventive conservation standards in the face of the climate and energy crisis. The success of this second event (over 600 connections across 31 countries) showed just how high the expectations of professionals are for concrete suggestions on how museums can develop new practical solutions and ways to operate in order to respond to today’s reality.

The current context, with its climate, energy and social crises, raises questions about the resilience of our heritage institutions, which are now wondering how they can reconcile sustainable development and museum day-to-day life. As a result, the museum sector is undergoing a complete overhaul. What tools do we have at our disposal to come up with new ways for museums to operate? What could help us move forward, and what obstacles are in the way? Can we develop more energy-efficient models of conservation? Can we change our practices, and how?

The “Museums Facing their Social and Environmental Responsibilities: Towards an Ethical and Sustainable Model” series was designed to create a space for discussion and dialogue for all ICOM members, where they could share their questions and concerns, express their expectations, and present inspiring examples. With support from ICOM under the 2023 Solidarities call for projects, this project was led by ICOM France and co-organised along with 9 partners: ICOM Canada, ICOM Spain, ICOM Lebanon, ICOM-CC, ICTOP, NATHIST, ICOM Arab, ICOM LAC and the University of Québec, Trois-Rivières (which also provided financial support), each taking the lead for one session. The series of debates was based on the Sustainable Development Goals of the UN 2030 Agenda. In line with ICOM’s strategic plan for 2022-2028, it aimed at creating a platform for international exchange. The goal was to highlight the innovative and inspiring experiences of museum professionals from

different countries, in order to show how museums can take concrete steps in their day-to-day activities to build a more sustainable future.

The series was built around six topics, with the aim of widely disseminating fresh and engaging reflections about museum issues and sustainable development, understood in its broadest, environmental and social sense. The diversity of topics was designed to give participants the keys to improving the social and societal function of museums. Debates aimed to highlight how museums, as socially active institutions, can contribute to building a better world.

Each online session was simultaneously interpreted into the organisation's three official languages (English, Spanish and French), thanks to the support of the French Ministry of Culture's General Delegation to the French Language and French Languages, and was designed along the same format: three to five museum professionals presented a concrete initiative implemented within their institution, or offered an analytical perspective of the situation. These brief presentations were followed by time for discussion and debate.

This publication and the recordings of each session bear witness to the openness, honesty and generosity shown by each speaker. Each presentation highlighted the ideas, methods and successes behind each initiative, but also raised questions about the resources, limitations and obstacles to developing new ways of thinking. One of the main goals of these sessions, which were designed to be as lively and spontaneous as possible, was to initiate dialogue between museum professionals, and this was definitely achieved. The series featured 32 speakers and attracted 890 connections during the live broadcasts, from an average of 28 countries.

This publication summarises the results of this major collective effort, and we hope this format will prove equally useful and inspiring to the museum community.

Émilie Girard,

Présidente d'ICOM France, janvier 2023

The "Museums Facing their Social and Environmental Responsibilities: Towards an Ethical and Sustainable Model" series ran from 24 May to 22 November 2023.

Session 1

Sustainable Architecture and Built Heritage

Wednesday 24 May 2023

Speakers:

Annelies Cosaert, from the sustainability unit of IRPA (Royal Institute for Artistic Heritage) – Belgium

Danilo Forleo, Head of Preventive Conservation, musée national des châteaux de Versailles et de Trianon

Ning Liu, architect, co-founder of Building for Climate

Laurent Ricard, Head of the Building and Security Department, Conservation Centre of the Louvre Museum

Session moderated by Ann Bourgès, Secretary General of ICOMOS France and leader of the Climate Change and Heritage Working Group, and **Hélène Vassal**, member of the ICTOP board and Director of Collections Support at the Louvre Museum.



Hélène Vassal: We decided to open this series with a session about sustainable architecture and built heritage. What could be more natural than talking about buildings, the natural envelope which, yet limited, protects our precious collections? Environmental requirements now force us to think differently about our relations to conservation, in contexts that sometimes raise debates. This evening, I hope we will lay the foundations for this discussion. We will attempt to identify sources of inspiration through examples that, thanks to their systemic approach, highlight the most appropriate tools and strategies. The art of architecture remains, by definition, the art of compromise and adaptation, the art of “embracing complexity”, to quote architect Nicola Delon.

Ann Bourgès: Thank you Hélène. Good evening everyone. It is a pleasure to be here today alongside ICOM France and to moderate

this debate with H el ene Vassal. Today, I represent ICOMOS France, and more specifically the Climate Change and Heritage Working Group, created in June 2021. This group is in line with the institutional initiatives in progress, such as the creation of the international scientific committee on climate change at ICOMOS: Climate Change and Heritage Working Group, a committee for the development of monitoring units at World Heritage Sites to assess the impact of climate change.

Climate change is already impacting both communities and heritage on a global scale. The main challenge is therefore to adapt our cultural heritage to climate change, while preserving its heritage value. For many of our natural, cultural and museum heritage sites, it is no longer a question of coping with the risks associated with climate change, but a question of adapting to them and developing management strategies to preserve their heritage value. The notion of risk is no longer relevant, but action and planning are. The dialogue between science and heritage is therefore becoming increasingly essential and is gradually unfolding.

The international symposium “*Un patrimoine pour l’avenir; une science pour le patrimoine*” (Heritage for the Future, Science for Heritage) organised by the *Fondation des sciences du patrimoine* in March 2022, supported by the French Presidency of the European Union, further underlined the need for dialogue between science, digital science and the monitoring of cultural and natural sites.

The actions to be taken and the responses to be provided can only be based on the identification of vulnerabilities and the development of new digital and methodological tools. Today, it is essential to adapt and implement measurement systems. Some cultural assets are classified as sensitive, with various risks such as rising temperatures, intensified freeze-thaw cycles, intensified humidity-drying cycles, but also landslides, the stability of our monuments, soluble salt contamination, pollutant contamination, which also affect our museum collections.

The challenge now is to understand how to restore and the impact of this restoration. To do so, it is essential to measure the building as a “buffer envelope” between the inside and outside climates. This is an essential step in integrating the technical and technological demands of today’s environmental regulations.

Therefore, the reality of built heritage uses seems to be the emerging issue from the discussions held within the various groups. Diagnostic tools therefore need to be implemented, along with a methodology that integrates these diagnoses before renovation. The aim is then to lay out a real management plan for sites and collections, incorporating protection and mitigation solutions, as well as evolving solutions that strike a balance between preservation and collections management. There is therefore a lot to be done in identifying the effects and the opportunities offered by heritage.

Preservation is a “green” act, but how can this be done in a sustainable manner, while minimising intervention and preserving essential heritage values? To do so, we need to measure, optimise and enhance our impact. By taking these steps towards adaptation and resilience, we will know what we have been able to save and preserve.

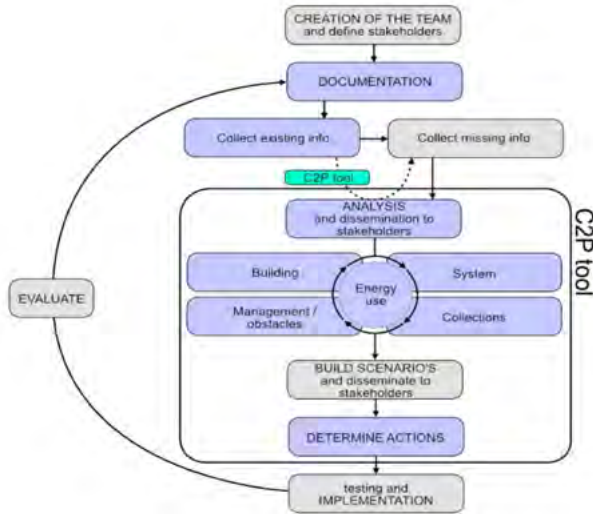
We will use a number of examples to illustrate this point, starting with a presentation by Annelies Cosaert, from the sustainability unit of IRPA (*Institut royal du patrimoine artistique*). The goal of this organisation is to identify, study and preserve Belgium’s cultural and artistic heritage. Annelies has been working at IRPA for several years, more specifically in the preventive conservation department. She specialises in glass, metal and ceramics. She works on the integration of short- and medium-term measures related to the conservation of collections. She is going to talk to us more specifically about the Climate to Preserve project and the tool developed by IRPA within this framework, based on a strong interdisciplinary approach.

Annelies Cosaert: I wanted to talk to you about the Royal Institute for Cultural Heritage (KIK-IRPA) in Belgium and its four-year project: Climate to Preserve. This project is run by the sustainability unit which I am part of. We mainly focus on emergency responses and reducing energy use. We try to interpret sustainable practices and do some research.

The “C2P Protocol”

The aim of this project is not only to create a protocol, but also a toolbox with strong figures and case studies. As part of this project, we have worked with the University of Liège, which specialises in climate systems, as well as the University of Louvain, which

specialises in building physics. We believe it is important to involve several partners (building experts, systems experts and collection experts) in all our projects.



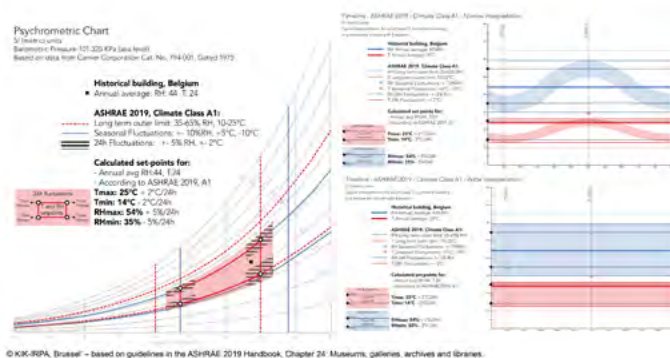
The first step is to create an interdisciplinary team. We then begin with a documentation phase, as it is essential to first collect data. This involves both studying existing information and gathering new information. Once all the information has been gathered, we move on to the analysis phase, followed by the testing and implementation phases. For the analysis of the building’s energy use and management, we are currently creating an online tool and we plan to create a low-tech version of the tool as well.

There are many strategies to achieving energy savings. We can work directly on the building envelope or on systems from a technology perspective. Another possibility is to change climate zones within the building by creating microclimates to add a layer of protection for objects.

Changing Guidelines

We have talked a lot about changing guidelines. These are designed to help you understand the risks associated with different climates

for your collections. You can see hereby the general recommendations for cultural heritage institutions, but also the specific criteria for historic buildings.



Raising Awareness

Guidelines are something you apply to a specific type of building. We are trying to help participants understand the kind of climate they can have in their institution to maintain the environment around the collection.

We are currently raising awareness by writing a “Climate Declaration”. We have versions in Dutch and in French, and a draft version in English¹.

The aim is to help you understand how you can achieve an acceptable climate for your collections, including examples of energy conservation strategies. It also highlights some risks. This is a general statement that we give to museums and ask them to sign.

We also have a more practical document that we created during the energy crisis. This document gives you information on energy-saving strategies. It also highlights risks associated with climate change and potential adaptations².

⁽¹⁾ https://drive.google.com/file/d/1_GxYodpEyDO5ZQMewf0Cwf4Qs80ERhPR/view?usp=sharing

⁽²⁾ <https://drive.google.com/file/d/1jEfYJx9Ys693pJQVvPy6ipusCk4KX4X1/view?usp=sharing>

I hope this explains our work on collections. I know there are other professionals here who are more knowledgeable about buildings, which is why I preferred to focus on collections. I am open to answering any questions you may have, and you can contact me by email.

Ann Bourgès: Thank you for this very interesting presentation, which highlights the importance of an interdisciplinary approach and of the provision of online tools. I will have some questions about the feasibility of setting up an online tool, at which level it can be shared and how interactive it is. This idea of methodological tools for assessing potential climates in various museum rooms raises the issue of which collections and objects are prioritised according to certain climates.

This brings us to our next speaker, Danilo Forleo from the musée national des châteaux de Versailles et de Trianon, who is in charge of Preventive Conservation. He holds a degree in preventive conservation from Paris Sorbonne University. Since 2015, he has been leading the EPICO (European Protocol in Preventive Conservation) research program, which he will be presenting to us today. It involves a methodology that matches climate conservation recommendations with actual observations made *in situ* on the Château de Versailles collections.

Danilo Forleo: I would like to present the EPICO research programme and its evaluation method, which is a decision-making tool for the preventive conservation of historic buildings.

I would like to start with a question about the climate management of collections, and more specifically about the method for identifying temperature and relative humidity guidelines for collections: Is it doable to have a castle heated between 16 and 17 degrees? In most castle-museums, this would avoid problems of dryness in winter, and would enable us to install humidifiers while saving water and electricity.

I would like to emphasise that the effects of climate change described in the literature are reflected in our on-site observations. At Versailles, for example, we have been observing changes in collections, particularly since 2020, due to an increased number of extreme climate events. Since 2015, we have been looking into this issue through the EPICO research programme run by the Château de Versailles in collaboration with other historic residences, and

via the Network of European Royal Residences. The several thousand cases recorded at European castle-museums, assessed using the EPICO method, can give us a statistically informative picture of the situation.

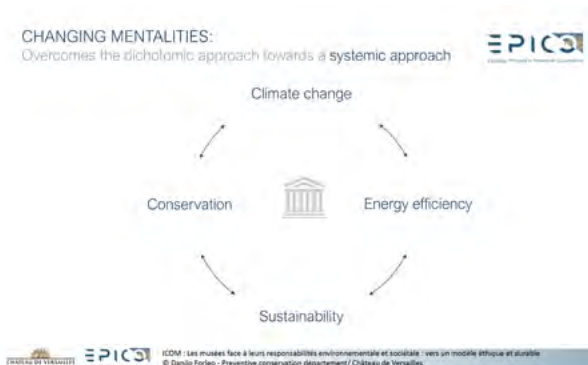
The Role of Cultural Heritage: Changing Mentalities

Let us start with the issue of air conditioning for museum spaces. It is well known that the Earth's atmosphere is warming due to greenhouse gas emissions caused by human activity. We know that our built heritage plays a role in the local climate. In particular, heating in winter and air conditioning in summer create significant greenhouse gas emissions. This raises the following question: how can we preserve our collections while taking into account their specific climate condition needs?

CHANGING MENTALITIES:
Overcoming the dichotomic approach...

CHATEAU DE VERSAILLES **EPICO** ICOM - Les musées face à leurs responsabilités environnementales et sociales : vers un modèle éthique et durable
© Danilo Forleo - Preventive conservation département/ Château de Versailles

For example, suddenly changing the climate in a room can damage sensitive works of art, whereas air-conditioning the entire space of a room for no evident reason leads to excessive energy use, and contributes to CO₂ emissions. If we want to find solutions, we need to overcome this dichotomous approach, which positions conservation on the one hand, and climate issues and sustainable development on the other hand. Museum professionals have been debating this issue for decades, and the debates are based on convictions, sometimes without any scientific basis.

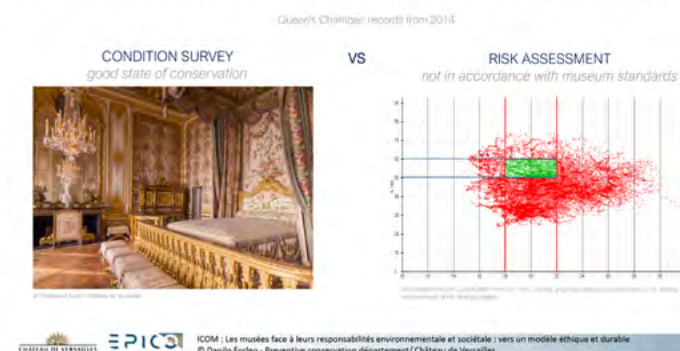


Systemic Approach

We all agree that new strategies need to be adopted and disseminated in order to solve this seemingly unsolvable equation. Climate change, heritage conservation, energy conservation and sustainable development are interdependent variables, but there is a point of equilibrium between them that relies on knowledge of the objects, their environment and their reciprocal interaction. This balance must be found through a systemic assessment approach, based on knowledge of the objects and the state of the collections. The EPICO method offers a suitable approach to the conservation of historic residences.

An Emblematic Case: Versailles

AN EMBLEMATIC CASE: THE AIR CONDITIONING PROJECT OF THE PALACE OF VERSAILLES



Let me continue with an emblematic example: the Queen's room in the Château de Versailles. This room is part of a series of spaces for which work was planned in 2014, in order to secure the technical networks and install a new air treatment system. Prior to the work, the conservation department had carried out around 1,000 assessments of the collection's condition, including those in the room containing one of the Château de Versailles' most precious and potentially most fragile objects: the Queen's jewel box.

The condition of collections in these spaces was entirely fine, requiring no climate treatment despite, paradoxically, a room climate that could be described as critical and far from museum standards. In particular, there were significant daily fluctuations (up to 25% in 24 hours), a south-facing exposure with large bay windows raising the temperature to over 30°C in summer and up to 18,000 visitors a day during busy periods.

The diagnosis of the collections' conservation led to the minimisation of air-conditioning work, while the diagnosis of the thermo-aerodynamic studies led to the installation of major air-conditioning equipment and to complications such as the weakening of the building in order to run the ventilation ducts and grills in the historic location of the objects.

Given this situation, the Director of the Château de Versailles Museum decided to take a closer look at the state of knowledge in the field of preventive conservation of historic residences, a research project that I was going to develop as part of the EPICO (European Protocol In Preventive Conservation) programme. For the example at hand, the results of successive studies have enabled us to extend the climate regulation thresholds of the collections without compromising their conservation, to minimise the invasiveness of the equipment in the architecture and to cut energy consumption and CO₂ emissions by around a third.

EPICO Method

Since 2015, the objectives of the EPICO programme have been included in the Château de Versailles's scientific and cultural programme. Thanks to the dissemination provided by the Network of European Royal Residences, Versailles has joined forces with other European partners to develop a conservation diagnostic method for identifying preventive conservation priorities.

The EPICO method is based on five criteria:

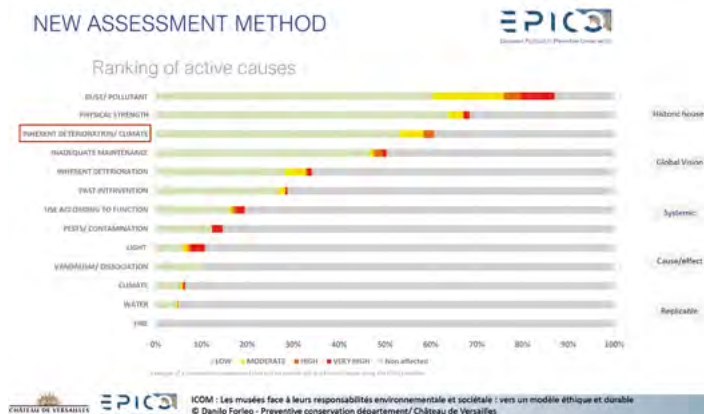
1. Adapted to the specific case of historic residences;
2. Conducted using a systemic approach;
3. Based on the cause-and-effect relationship of alterations;
4. Able to provide an overall picture of the conservation system of a residence; and
5. Able to be reproduced and applied to other historic buildings.

This method is adapted to the specific case of historic residences, where the condition of the collections is intrinsically linked to the spaces for which they were designed. The reciprocal interaction between the conservation of collections and the environment has been at the heart of the programme's research since its inception.

The new EPICO programme (2023-2025) should help to identify common strategies to meet the challenges brought about by climate change and the energy crisis:

- Carry out new assessments using the EPICO method;
- Weight the impact of climate among the other causes of deterioration and changes since 2015;
- Consolidate the data from the various EPICO digital tools; and
- Integrate this data into a shared digital platform, in line with the guidelines of the French Ministry of Culture and the national ESPADON project.

These themes will be discussed during four workshops between 2023 and 2025 at the Châteaux de Chantilly, Versailles and Monaco. This programme should lay the foundations for a charter of best practices to limit the effects of climate change on the conservation of castle-museums, and reduce energy consumption and CO₂ emissions.



Charter of Traditional and Modern Preservation Methods

Particular attention will be paid to traditional maintenance practices for historic residences, with the aim of combining them with new conservation technologies. Here are just a few examples: passive systems, window insulation, the use of museum fabrics and lower heating temperature targets. So let me ask you again: can we imagine visiting a castle-museum heated to 16/17°C? In many cases, this would eliminate the need for humidifiers, while saving water and electricity.

Hélène Vassal: Thank you very much Danilo. We would like to ask you a few questions. Could smaller museums benefit from a common methodology? Can anything you are developing today be disseminated and used by smaller institutions?

Danilo Forleo: Yes, we designed the EPICO method to be transferable. It was deliberately based on Excel files, which are easy to distribute but not very user-friendly. Our aim is to put a freely accessible platform online, thanks to the support of the French Ministry of Culture and the guidelines of the ESPADON project, allowing everyone to use it without having to transfer files.

Hélène Vassal: That goes back to what we were saying. The idea is to make them accessible to a much wider audience. Annelies, what do you think?

Annelies Cosaert: Yes, of course. I do not think there are any museums that are less advanced. The only thing is that if a museum has no climate systems at all, it does not consume a lot of energy, and consequently this methodology is not necessarily applicable. However, the aim is to make this method applicable to all museums.

Hélène Vassal: But you have established a methodology, and it might be a good idea to make it available to everyone, even museums that do not have air-conditioning.

Annelies Cosaert: Yes, but the methodology is aimed at consuming less energy. So if the museum does not have a specific climate system, it cannot be applied directly. But these museums do have the possibility of carrying out a self-assessment that will explain whether a large amount of energy can be saved by their institution.

Hélène Vassal: Another forum question for Danilo. When you talk about traditional methods, what do you mean by this?

Danilo Forleo: Take the example of the Queen's second-floor apartment at Versailles. When I say modern and technological, I mean high-performance, undetectable anti-UV and anti-infrared filters, which can block almost 40% of incoming solar energy while being perfectly satisfactory aesthetically speaking. We have combined this new system with reconstruction fabrics that will typically be used to dress the rooms. These are sheers, curtains and sub-curtains. We doubled and counter-lined these curtains with blackout fabrics. We can modulate the different layers of curtains and sub-curtains in addition to the filters to achieve 50 lux for textile or painted objects on display inside. Natural light is not only important to the historic aesthetic appreciation of the premises, but can also be controlled using traditional, cost-saving methods.

Hélène Vassal: It is truly innovative and exemplary, and ties in with our introductory remarks, that is the idea of combining heritage value with technological innovation in order to optimise the conservation of collections. I assume that light will also have an impact on temperature. So if you also minimise the increase in lux, you also lower the temperature of the building, which is also interesting in terms of the general climate of the building. There is also the question of visiting at 16 degrees.

Danilo Forleo: It is a highly sensitive issue, and one that will surely raise debate. In England, for example, the National Trust has adopted this approach for its residences open to the public. Although these homes are not as large or as busy as Versailles, this organisation has decided to provide good equipment for reception and security staff and to reduce indoor heating. I think it to be a good solution, and I would like to open the debate on this.

Hélène Vassal: This provides a perfect transition with Ning Liu's talk and her exploration of traditional methods. This is a topic that has long interested Ning Liu. She is a member of the presidential programme created by Jacques Chirac called "150 Chinese Architects in France". She is a graduate of INSAT Strasbourg and holds a PhD in Science from the Ecole Polytechnique fédérale de Lausanne. In 2011, she co-founded the Building for Climate agency in Paris, whose practices consist in blending environmental and cultural aspects to create a new, more sustainable urban environment. She has led several projects in China, Morocco, Burkina Faso and South Africa, and is co-leading international urban planning workshops on resilience in Mayotte. She is also a member of the ICOMOS working group on heritage and climate change, and will be sharing her experience in the rehabilitation of old city centres.

Ning Liu: I took the example of the Palace Museum in the Forbidden City, which perhaps also echoes Versailles as a great royal palace-museum in France. Compared to my colleagues, who have shown a lot of charters and physical calculations, I have adopted an architect's perspective. I have chosen a few pictures and illustrations to tell you the story of the Forbidden City. What I have learned over the last ten years is that collaboration between architects, building technicians and museum curators is essential to preserving our ancient cultural centres and palace-museums.

Why choose the example of a museum like the Forbidden City? It is important to note that heritage is not just about bringing together collections, but also about showing a living environment to the thousands of people who visit the site. For example, Versailles' visitors are seeking to recall how French kings and queens once lived.

The Forbidden City is extremely large. I am presenting just one part of it here: the Yangxin Palace (Hall of Mental Cultivation). This is

a very important area located on the west side of the central axis of the Forbidden City. It is where the emperors of the Qing dynasty lived with their empresses. The architecture is traditional, with lots of woodwork and brickwork. There is also the central area, which is the presentation space, and the living spaces around it.

Chinese interdisciplinary research teams have recently discovered a number of problems linked to climate change. In Beijing, for example, there are increasing problems from sudden heavy rainfall with large quantities of water in a very limited period of time, causing problems for water drainage in the three monuments. There are also heat peaks in summer and frost peaks in winter. The palace's temperature record shows that it can vary from 3°C to 27°C, with the associated problems of salinity, rising water levels, mould and condensation. So, to keep the palace in good condition, very detailed scientific work is required.

During archaeological research, we discovered that these phenomena are due not only to the intensification of bad weather, but also to a lack of maintenance and historical knowledge of the palace's sub-surface. A great deal of research needs to be carried out regarding traditional methods of water drainage. In this region of northern China, under-floor heating has historically been used for winter warmth. So, to keep the palace open with a high visitor flow, risk and compensation assessments need to be carried out first.

We also have a project in southern China with the same research team, but in a very different climate (southern China has a subtropical climate). We have learned that different climates have different preservation techniques and priorities, particularly in terms of water treatment and ventilation. There is also a difference with European architecture, which has a relatively low level of permeability. In this long-span wooden architecture, buildings are often naturally ventilated, and research also shows that adding new glass to certain spaces can actually create mould as the balance with the original architecture is being disturbed. The lesson resulting from this is that we need to strike a balance between passive and active methods. The results of measurement studies, with extremely well-preserved artwork, is the introduction of well-hidden assisted ventilation to monitor changes in humidity in the palace.

In a palace or mini-palace like in the Forbidden City, we are really looking at a condensed version of Chinese architecture structured

around an empty space. In this case, space is built around the central courtyard, and particular attention is being paid to the centrality and spatial distribution of traditional architecture. Here, collaboration between architects and scientists is important to safeguard and preserve the authenticity of the building. The options at our disposal are therefore very different.

In southern China, close to the Vietnamese border in China's Guangxi Province, we have another research project in Huang Yao, one of China's most beautiful villages that count ancient mud and brick buildings. There, even though it is 15 degrees in winter, there is still a problem of capillary rise due to humidity and discomfort felt by users. The microclimate of this specific architecture means that the space needs to be managed differently.

Another example: I was on a study trip to Japan. In this country, places are very busy, and their wooden structures can easily deteriorate. This led to a brainstorming session with the team. The example in this case is the Todai-ji Temple in Kyoto. The temple remains wide open and has no air-conditioning. To preserve the area, the museum's curators adopted strategies to both accommodate heavy visitor traffic and safeguard this fragile structure. As in the case of the Imperial Palace Museum, discussions were held with archaeologists and curators. As a result of these discussions, a monthly maintenance schedule was set up, while restoration sites were identified on an annual basis. Care and maintenance is key to the preservation of these spaces. In China and Japan, museum spaces are also cultural spaces that remind children and future generations of a certain heritage and way of life.

In recent years, other conservation strategies have been discovered. Take the example of the musée historique de Villèle on Réunion Island. It is a historic house with a veranda opening onto a formal garden. To ensure the right conditions for preserving this historic house, you can see that all the shutters are closed and no more than twenty people can visit the building's interior at the same time. This limited visitor capacity has enabled us to create a different museum itinerary. As the house is in a tropical climate, the tour starts from the outside. No energy or architecture has been created to accommodate all these visitors. The tour starts in a garden, where visitors stay for twenty minutes. They then go to the house and return to the garden for the conclusion. It is a very interesting museum and cultural experience for visitors that enables the preservation of the

historic house. Perhaps this limited visitor capacity is not ideal, but I found this way of visiting very interesting.

I will end with this photo I took in Shanghai. It is on the seventh floor of a stone pagoda that stands behind one of Shanghai's oldest temples. You can see a changing city putting emphasis on preserving the existence of ancient monuments. You can see that the existence of these monuments in the city, the respect for their scale and the living environment they project are of great value to the city today. Perhaps is it an oriental Chinese and Japanese tradition, but the relative transparency between inside and outside, the space of the city and the space of the monument may inspire future generations. As urban planners on this site, we did our best to preserve the temple's scale, and planned a linear urban park separating the high-rise towers from the preserved temple. The 35-metre-high pagoda can still be seen clearly on the city's skyline, thanks to its unobstructed perimeter. So, we are very pleased with the integration of this monument into today's modern architecture. It helps keeping our traditions alive in today's cities.

Hélène Vassal: Thank you very much, Ning Liu, for your contribution. It reminds us that conservation and visitor strategies can be designed using traditional methods and a visitor framework adapted to the constraints of the site. It also reminds us that we can develop relevant strategies through multidisciplinary teamwork.

Now, I would like to hand things over to Laurent Ricard, who will tell us more about another region, that of Hauts-de-France and Northern France. We wanted to end this session of presentations with one on the Louvre's conservation centre in Liévin. Built by the Rogers Stirk Harbour Partner team, this centre integrates environmental concerns into its architectural design and day-to-day operations.

Laurent Ricard is Head of the Building and Safety Department at the Liévin Conservation Centre. He holds a degree in HVAC and Electrical Engineering. He spent five years working for a fluids engineering consultancy specialising in cultural facilities, before joining the Louvre Museum as Project Manager. In 2018, he joined the building teams at the centre. The facility has been on since 2019, and Laurent is going to tell us about its major challenges.

Laurent Ricard: These are very interesting discussions which relate to what I will be talking about later. Here, we work in a

different context, as it does not involve an old heritage building, but a new building recently constructed for a specific purpose.

The CCL: Choosing a Better Balance between Function, the Building and its Environment

At the outset of the project, dialogue took place between the client, the users, future operators, the planning engineer and the architects.

The project had a number of goals:

- To make the building envelope as airtight as possible, in order to keep humidity levels as stable as possible;
- To provide visual comfort for visitors by striking the right balance between artificial and natural lighting; and
- To create performance tools (such as building management systems) that are important for the day-to-day monitoring of technical systems (alarms, climate monitoring, production monitoring, metering and maintenance of the building as a whole).

From the Project to the Building

There was a perfect correlation between the programming document drawn up by Frédéric Ladonne and the project plan, characterised by the central role of the storage areas and the importance of having spaces for circulation, reception, offices and logistics. We have had real success in translating our needs into well-thought-out spaces. We have doors for security and safety reasons, but, during the various visits we were able to make, no one told us that they did not understand at all how the building worked. This is a real success in that sense.

When it comes to the architectural design, there has been a very strong integration of the building into the landscape, with a building that is semi-embedded in the ground. From the outset, we wanted to use the natural terrain, and we took advantage of the soil that was already on the site to replant it around the building and take advantage of this inertia. An important element of the project is the 18,000 m² green roofs with thermal insulation and different weatherproofing layers to prevent leaks. We have three layers of waterproofing on the building, as well as a leak detection system to

identify the exact location of any leaks. All this inertia means that the building blends seamlessly into the landscape of the site and its surroundings, and delivers very high-energy performance.

In July 2019, we broke heat records in the Hauts-de-France Region, with temperatures of 42°C between 12 midday and 1pm. Despite these extreme temperatures, the temperature in the storerooms remained at 20°C, even though the air conditioning was not working. 150 workers were working on site and almost all the doors were open. Since inertia has its limits, after a week we had an increase of 2 to 3 degrees. Nevertheless, we realised that we still had a very airtight building.

We also have green spaces, with four hectares of land on which the architects have integrated various landscaping elements, such as trees all around the site. The building is therefore an extension of the Louvre Lens Park and has a gently sloping 3.5% roof (inaccessible to the public for safety reasons) that blends in perfectly with the overall landscape.

Electricity and Water

The first graph shows consumption of 932,000 kWh for all uses combined in 2020. The year 2020 is not a date to refer to, as Covid led to reduced activity and therefore lower consumption. A reference year would be 2021, when we had a major relocation phase and the workshops were virtually all in use. That year we recorded 1.3 million kWh in energy consumption. In 2022, we succeeded in reducing this consumption by 13.5% using a variety of tools. For us, this is a great success, and we are continuing to make efforts in this direction.

If we break down our consumption by use, we can see that 75% of it stems from hot and cold water production. This water is used to humidify and dehumidify and to heat or cool rooms. A further 9% is used for power sockets for the various workstations and servers, 15% for lighting and 1% for miscellaneous equipment.

As far as our water consumption is concerned, we use around 600 m³ of water, divided into three parts: 38% for humidification; 34% for sanitary needs (various uses for cleaning the areas); and 21% for cleaning the premises. Once again, we are trying to reduce these 600 m³ even more. We have managed to reduce consumption by 8.8% between 2021 and 2022, despite dry spells. Of course, we do not water the lawns or roof spaces, and leave nature to its

own devices. The green roof is managed similarly to a meadow landscape: we let nature take its course and cut the grass once a year. We are also looking into the possibility of installing beehives on-site. This is one of my priorities for 2023.

We also have a large glazed facade, as well as a lighting system that provides natural light and greater comfort for users in corridors. In the main traffic areas we have LED lighting, with the interior brightness adjusted according to the brightness outside. All the lighting in the building is LED, of course.

We regularly educate users not to leave doors open and to turn off the lights when leaving a space (storeroom, workshop, office, etc.). We recently succeeded in stopping the fresh air supply at night and at weekends, and working solely with recirculation. This has resulted in real energy savings. We are still working on ways to improve things and carry out regular monitoring internally, as well as with our operations and maintenance service providers.

We carry out climate monitoring every two years. Calibration of the industrial sensor is what controls the air conditioning, cooling and dehumidification. Probes are calibrated every 2 years. Another point is our digital simulation work on ventilation. Our air is recycled using very low mixing rates (0.3 volumes compared with 3 to 5 volume hours for a conventional museum). We also do this because no member of the public lies in the space, so there is no need for significant air renewal. Despite this low rate, perforated induction ducts provide airflow uniformity.

Waste Production and Management

We have been trying to reduce the amount of waste we produce by recycling crates. For example, we recycle wood internally, reusing it for other crates or donating it to other institutions. For smokers, we also recycle cigarette butts which helped us, in 2022, to avoid polluting almost 6,500 m³ of water with cigarette butts that would otherwise have been thrown into the environment and have polluted the water table on our site.

Finally, we infiltrate all our rainwater on site. This groundwater allows us to produce hot water and chilled water using a geothermal heat pump that we have on site.

Hélène Vassal: In the chat, our colleague from the University of Quebec, Aude Procéda, writes: “Does rethinking conservation standards in the light of climate issues amount to a real major shift in practices, or is it just a necessary adjustment that is under way?”

Danilo Forleo: I think this is a real challenge that needs to be a revolutionary one. Changing standards and guidelines can have a major impact on the design of equipment, energy consumption and the monitoring of collections (more parameters to control goes hand in hand with more risks). All this has to be weighed against global warming. If we imagine, for example, an overall increase in temperatures, we could try to lower the heat in winter and cool the most sensitive rooms in summer. It is vital to think about this carefully, because the work we do now will have an impact for the next 50 to 100 years, so I think the question we are asking ourselves now is absolutely essential.

Annelies Cosaert: We see that it is sometimes very complicated. A lot of museums have signed the “Climate Declaration” that we distributed, but we have also received a lot of comments going in all directions. Some people have told us that it is excessive, while others have said that it does not go far enough.

We do not give many figures in this document, the aim being to focus on the recommendations rather than the figures per se. We can see some improvements, but unfortunately people do not always want to adopt these changes for the right reasons. We can see that there is still a need for education about the risks applied to collections. So we are trying to be aware and provide advantages and disadvantages. In my opinion, these documents are fairly comprehensible for everyone and enhance dialogue.

Ann Bourgès: What you all have in common in your presentations is that you do not start from systematic instructions but adapt them according to each work’s state of conservation. The idea is not to start from a systematic basis, but to really understand the state of conservation, as well as the envelope and the architecture. It also means knowing our buildings better and understanding the original state of conservation better, so that we can evolve and adapt.

Hélène Vassal: This work also involves dissemination through the presentations and talks you give at symposiums and conferences. I invite you to share the various projects and initiatives you are working on with us. If you could each mention one or two relevant news items. Danilo, you mentioned the ESPADON project, perhaps you could tell us more about it.

Danilo Forleo: ESPADON is a major national project headed up by the French Ministry of Research and Innovation, in conjunction with the Ministry of Culture, which should enable us to make all our databases interoperable. Through ESPADON, we plan to use artificial intelligence to better cross-reference all this data, to have faster cross-cutting readings and to better diagnose any changes to an object. It is an ambitious, complex and exciting project, which I believe will open up many new possibilities.

Pascal Liévaux (*General Curator of Heritage, Head of the Department for Research and Scientific Policy at the Directorate General of Heritage*): Thank you Danilo for mentioning this very important project in which the Ministry of Culture is particularly involved. This project is part of a major European call for projects launched by the European Commission to build a European Cultural Heritage Cloud. It is an extremely ambitious project on which a French-Italian consortium is currently working. I sincerely hope that this consortium wins this call for projects, because the project's goal is precisely to encourage and enable the sharing of data produced by heritage institutions, to be able to cross-reference them and work on them. I also think it is important to be able to retain sovereignty over this data, which is of great interest to Big Tech. One of the objectives of this Cloud is to enable small and medium-sized institutions to have an ambitious policy for managing their data, to have access to shared tools to sustainably and intelligently manage this heritage data over the long term and to share it both internationally and at a European level.

I would like to take this opportunity to mention that the French Ministry of Culture and the Italian Ministry of Culture are developing a partnership on research, training and action in the field of cultural heritage. A series of seminars has been organised within this framework to bring together Italian and French researchers and professionals. This year's theme is heritage and ecological transition.

The next date is 27 June, and the seminar can be attended remotely. The aim will be to compare and contrast views on this subject and come up with joint projects.

Ning Liu: I believe that the conservation and restoration of palace-museums and the creation of conservation spaces specific to the different objects require specific training. Because of the different climates in different countries, it is clear that technology is essential to controlling indoor and outdoor spaces. And when spaces are not waterproofed, it is even more difficult. But we are really living at the right time because we can achieve this thanks to the simulation methods, monitoring and research that exist today.

This summer, we are offering a course in Huang Yao, Southern China, on earthen architecture. This course is open to students from 4th year upward, masters and doctoral students with a passion for heritage. We obtained financing from the University of South-East China and I am currently working to get more money to organise these workshops online and on site in the future.

We are also going to try and get the experts who work on the Forbidden City to come to rural areas that need heritage restoration. They will then come and study the solutions adapted to these areas, taking into account the specific climate conditions.

Ann Bourgès: I wanted to touch again briefly on the importance of training. We have also identified it in the working groups and within the DIRI (Innovation and Research Delegation). We would like to continue our work on identifying traditional techniques relating to climates and therefore to each country and region. There are things that need to be identified through an interdisciplinary approach, but training remains essential to integrating all the issues involved in architectural design.

Hélène Vassal: Another interesting point we discussed this evening was the contribution of new technologies and research. These topics are extremely important and will be discussed in the next sessions in autumn..

Session 2

Sustainable Development Mediation

Wednesday 7 June 2023

Speakers:

Anne Charpentier, Director of the Jardin botanique de Montréal, Canada

Tamar Mayer, Assistant Professor, Chief Curator, Genia Schreiber University Art Gallery, Tel Aviv University, Israel

Marina Piquet, Curator, Public Programmes Coordinator, Museu do Amanhã, Brazil

Ludivine Vendé, Head of Scientific, Technical and Industrial Culture Department, Museum of Nantes, France

Session moderated by Philippe Guillet, Vice-President of NATHIST.



Émilie Girard: Today's session is on issues related to sustainable development mediation. The aim is to examine how to raise public awareness about these issues.

Dorit Wolenitz: At the International Committee for Museums and Collections of Natural History, we are concerned about the sustainability of our collections, particularly since the United Nations 2030 Agenda¹. These issues are not only environmental but also societal, both for natural history museums and museums in general.

Philippe Guillet: The sustainability of our museums is a key issue. The term “mediation” refers to all things related to the public. “Sustainable development”, in my opinion, is nowadays only heard in governmental rhetoric. Oddly enough, throughout

⁽¹⁾ “UN 2030 Agenda for Sustainable Development - Directorate of Programme Co-ordination - www.coe.int”. n. d. Directorate of Programme Co-ordination. <https://www.coe.int/en/web/programmes/un-2030-agenda>.

the description of the project we are conducting at the Museum of Nantes, the word “sustainable development” does not appear. It is a static word that does not take into account today’s urgent environmental issues: the collapse of biodiversity, the urgency of climate change, and all the impacts that such a situation implies on the human level. The terms “ecological transition” or “societal transition” would then be more appropriate, as they would enable us to better address these emergencies. To go one step further, we could even speak of the Earth’s habitability for all living beings. The question is whether we will be able to live in a world we have made uninhabitable and unliveable.

Today, four speakers will share their experiences with us: Anne Charpentier, Tamar Mayer, Marina Piquet and Ludivine Vendé.

Anne Charpentier holds two Master’s degrees from the universit  de Montr al, one in Botanical Biological Sciences and the other in Museology. She is in charge of exhibitions and cultural mediation at the Biod me de Montr al and also participated in the renewal of all Biosph re exhibitions. She was also the director of the Insectarium de Montr al for 11 years, overseeing its complete metamorphosis. The new museum, with its unique concept, won awards in 2018 from the Canadian Architect Awards and in 2023 from the Ordre des architectes du Qu bec and the Chambre de commerce de l’Est de Montr al. Anne Charpentier has been managing the Botanical Garden within *Espace pour la vie* since 2019. In June 2023, she tabled the Botanical Garden’s first Master Plan to help the institution become a player in the socio-ecological transition.

Anne Charpentier: Espace pour la vie includes five Canadian museums dedicated to the natural sciences: the Biod me, the Biosph re, the Insectarium, the Botanical Garden and the Rio Tinto Alcan Planetarium. The main mission of this museum complex is to help people live better with nature. The vision of Espace pour la vie, as defined at the Montr al 2030 Summit, is to sustainably develop people’s autonomy to act to protect the environment and biodiversity, while accelerating the socio-ecological transition.

The Montr al Botanical Garden is a 75-hectare garden in the heart of Montr al. It includes 20 thematic gardens and an arboretum. The garden welcomes an average of 914,000 visitors a year, 40% of whom are tourists, and nearly 200 employees in high season.

In addition, 330,000 people benefit from educational and cultural programmes, and 25,000 from school programmes. The garden also has important academic partners such as the universit  de Montr al (and its Institut de recherche en biologie v g tale) and the CSSDM (Montreal School of Horticultural Trades).

The Montr al Botanical Garden is part of the Montr al 2030 Strategy, whose objectives are to accelerate the ecological transition, improve solidarity, equity and inclusion, increase democracy and participation and stimulate innovation and creativity.

We recently submitted the Botanical Garden Master Plan, which includes 28 actions around three major strategies.

The first strategy is to create an exemplary Garden in terms of socio-ecological transition and a model for demonstration. It is important to emphasise that all institutions need to be models when it comes to the socio-ecological transition. To give an example, the Botanical Garden has set up a rainwater recovery system. We are also installing a number of phytotechnology stations to better manage run-off water. All these actions contribute not only to the exemplarity of the institution, but also to education, as we become a showcase for demonstrating solutions. Our view is that plants are at the heart of solutions for the socio-ecological transition.

One of the plan's other strategies is to offer an inspiring, universally accessible experience for all. Our museums need to be more open and accessible. We can mention the ideas of "audience development" and "universal accessibility".

Finally, a third strategy relates to a garden committed to its community and to the international community. We have created a section within the Public Programs and Education Division called "*Animation et mouvement citoyens*" (Citizen Outreach and Movement). Our aim is to support the citizens' movement to fight global warming and protect biodiversity. We would like to offer the Botanical Garden's expertise and support in this transition.

We have recently revised our education and mediation policy with this in mind. Our educational approach is based on a desire to create a comforting personal connection and an emotional attachment that makes people want to come back. It establishes a personal, two-way, dynamic and rich relationship with the public that offers support rather than direction. The proposed experience provides

assistance, facilitates, imparts knowledge, creates memories and opens new perspectives.

In our educational approach, we use different disciplines, such as science, art and philosophy. We also use a variety of methods to tell a story and engage the audience, such as storytelling and dialogue. Through a variety of outreach techniques, we address themes such as everyday life, food, gardening and cultural history. Each visitor is unique and comes with his or her own experience and knowledge. The wide range of activities we offer enables them to take the path that suits them best. Knowledge and the scientific approach are always present, but are not an end in themselves. Having fun in nature, celebrating, playing and enjoying ourselves through festive events are still the backbone to our programming approach.

The education team strives to meet several objectives. Their goal is to provide visitors with an experience that stimulates their senses, engages their body and arouses their emotions. The team's aim is to create wonder, curiosity and observation, and to help visitors think more about the subjects being covered. We also organise workshops in which participants create, invent, make things or get involved. The mediator's role is to support the public. The mediator's aim is to arouse the visitor's curiosity.

Phillipe Guillet: The next intervention is offered by Ludivine Vendé, PhD in Radiochemistry and Head of the Nantes Metropolitan Area's Scientific, Technical and Industrial Culture Centre (CSTI) since 2022. In 2016, she was responsible for regional coordination of the *Fête de la science* and the *Village des Sciences de Nantes*, both being set up at the *Conservatoire national des arts et métiers*. She continued her career at the Nantes Metropolitan Museum as CSTI Project Manager from 2018 to 2020. At the University of Nantes, she coordinated the Pays de la Loire national and regional missions from 2020 to 2021. She was also secretary and then vice-president of the association *Le labo des savoirs*, which produces science-related radio programmes and organises CSTI events.

Ludivine Vendé: I am going to talk to you about the Museum of Nantes. I have chosen to focus the presentation on one of our main objectives, which is to inspire the public to discover and take action.

At the Museum of Nantes, we have an exhibition called “Ocean: an Unusual Dive” (*Océan : une plongée insolite*) in which we talk about ocean exploration and the importance of phytoplankton. The end of the exhibition also looks at microplastic pollution, ocean acidification and all the technological advances made to date. We have also put together a whole programme of activities related to the exhibition.

One example is the Marine Siesta Gallery, where visitors can relax while listening to the sounds of the ocean depths. We have also organised a series of lectures on the theme of the exhibition, featuring speakers from the research and business sectors, on subjects ranging from the hard sciences to human and social sciences. We always call on a strong, local and national network of partners to make discussions as accessible as possible for the public.

In addition, on World Ocean Day, we are organising an art-science show that presents marine exploration through poetic and dreamlike texts and songs.

Finally, today we talk a lot about eco-anxiety among young people. The mediation team is working with a facilitator specialised in children’s activities on philosophy to offer discussion time to broach philosophical questions, gain perspective and try to ensure that eco-anxiety does not overwhelm young audiences.

I would also like to tell you about another off-site initiative: the Connivence project. It includes the mediation team, the museum’s entomologist, the museum’s Nature and Gardens Department and some family gardens: plots of land loaned to associations will be divided up into lots for families, who will then be able to grow their own vegetables. The aim of the project was to create connections between gardeners, local residents and the museum team. What emerged from the initial discussions was that both gardeners and residents were keen to learn more about biodiversity and cultivation. A whole ecosystem was then created within this project, both in terms of discovering the garden and involving gardeners in the inventory. We also organised hikes for local residents and partners to enable them to study the biodiversity and history of gardens. It is a project involving local residents and gardeners, with an initial focus on biodiversity, but with a broader cultural dimension.

In recent years, we have seen a trend in France towards reorganising museums to bring them more in line with public expectations. As

a result, many museums have undergone renovations to offer their visitors new exhibition designs, itineraries and themes. One example is the Museum of Nantes, where we have been working on a new visitor itinerary around the theme of “inhabiting the Earth”.

Finally, a new space to be created within the Museum of Nantes is the *Agora des sciences*. The aim is to provide the public with reliable resources, in a time of misinformation. It is also a place for dialogue between science, research, the public and the museum. The *Agora des sciences* will be free of charge, and we hope this will increase the number of visitors to the museum. It will be a participative space for the public, museum teams, external players and associations.

Phillipe Guillet: I will hand the floor over to Tamar Mayer, art historian and curator, specialist in 19th century French art and researcher in museum history and practice. Tamar is Chief Curator of the Genia Schreiber Art Gallery, where she has established an innovative interdisciplinary platform bringing together the sciences and the arts. She received her PhD from the University of Chicago in 2017 in the Department of Art History and the Social Thought Committee. Her museum experience also includes internships and fellowships, notably at the Metropolitan Museum of Art and the Art Institute of Chicago.

Tamar Mayer: I am presenting a case study of the Tel Aviv University Art Gallery’s exhibition. This 2021 award-winning exhibition was born before the Covid-19 crisis, but changed and gained new meaning because of it. The exhibition is called “Planet” and was co-curated with Dr. Sefy Hendler, also from Tel Aviv University. We started it with the recognition that sustainable thinking must include a reevaluation of the pyramid that places humans at the top and plants at the very bottom. We aimed to produce a diversified view of plants, their complex forms, functions and abilities; we encouraged our viewers to see plants differently and think more about local consumption. The exhibition is site-specific, with a series of objects that integrate science and arts. With Covid, the exhibition gained significance. It was crucial for us to find ways for the exhibition to not only make people think about sustainability but also to put it into practice. So, we made efforts to reduce the exhibition’s overall carbon footprint, to use available resources and to rethink our responsibilities as conservators. Covid

provided us with a unique opportunity to enhance this approach. Our most important choice was not to take the show down and move on but to keep it up and expand it.

This is the entrance of the gallery with the work of the American duo David Burns and Austin Young (“Fallen Fruit”), called *Promised Land*. It is an immersive installation that includes taxidermies of injured or extinct birds of prey from the Steinhardt Museum of Natural History at Tel Aviv University. The artist duo has also created a collection of maps showing Tel Aviv’s various neighbourhoods and they marked all the fruit trees that people can pick from. Some of the fruit trees are planted on private land but they reach beyond the fences and are in public spaces. These maps encourage people to walk around the city, recognise and share fruits and pick it rather than buy it. Overall, we have really focused on the sustainability of the project as a whole, by printing these maps on recycled paper, printing the wallpaper on biodegradable fabric, etc.

After *Promised Land*, we commissioned a project from the Israeli collective Onya. They created an installation that was made of wood from the previous exhibition. The installation includes a library with books on sustainability and spaces for workshops. The project was opened to the public two months before Covid started, and we were forced to close during the lockdown. After the lockdown, we did not reopen straight away, but took the time to think through the impact of the crisis and study people’s expectations.

We also used the sculpture garden outside our gallery as we thought people might be more comfortable being outdoors. We worked with an archaeobotanist on campus who studied Herod’s ancient gardens. The artist created a kind of semi-archaeological site with a garden emerging from beneath the “ruins”. Plants used in this space are those that the archaeobotanist found in Herod’s garden in Caesarea.

I also wanted to show you the work of the French artist Stéphane Thidet *La pierre qui pleure* (*The Weeping Stone*). Here, you can see that circles formed by the drops of water seem to miraculously flow down from the stone to the earth. In reality, controlled by a hidden system, the idea of this work was to show a dystopian, lifeless space. We can see that water is flowing down and moulding the clay of the earth and, because the exhibit has been extended, the water circles have widened. In addition, because the exhibition went on for much

longer than what we had anticipated, the circles of dried earth have grown larger, and the cracks deeper.

As time moved on, we also saw that little creatures came to visit the gallery and left their footprints on the powdered clay ground. We were then confronted with a dilemma: Should we keep these footprints or not? We decided to keep them and consider them as part of the piece. This meant that we had to rethink the limitations and the constraints of art conservation approaches and our museum-related responsibilities. Basically, instead of removing these uninvited intrusions, we chose to welcome them, as they reveal the inability of humans to control their environments. The relationship that was created in the gallery between the piece, the artist, the curators and the public changed dramatically.

Phillipe Guillet: I am always cautious about bringing science and arts together, but I think the exhibition you have presented, Tamar Mayer, is really very interesting. I just had one question: What was the animal you identified?

Tamar Mayer: They were different cockroaches and lizards.

Phillipe Guillet: I would now like to hand things over to Marina Piquet, architect and curator, who holds a Master's degree in Museology from the Reinwardt Academie, Amsterdam University of the Arts. She has over 15 years' experience in creating exhibitions in Brazil and other countries. In 2021, she organised the exhibition "Menja. Actua. Impacta", on sustainable food systems in Barcelona. Marina currently works as Head of Exhibitions at IDG, where she leads the development of the new Environmental Museum in Rio de Janeiro's Botanical Gardens, as well as new temporary exhibitions at the Museum of Tomorrow (Museu do Amanhã).

Marina Piquet: With all these presentations, we realise that we are all facing similar challenges, despite the geographical distance between our institutions. I would like to start with a brief presentation of our museum, before offering some food for thought on the topic of mediation, which has brought us together today.

The Museum of Tomorrow is a cultural centre in Rio de Janeiro. It opened in 2015 and is managed by a non-profit organisation called IDG, specialised in cultural management. During the opening

week-end, we had to stay open for over 48 hours non-stop with free-entry so that everybody that wanted to visit this spaceship could come. Since opening in 2015, the museum has welcomed over 5 million visitors, 22% of whom had never visited a museum before. Our surveys have also shown us that more than 80% of museum visitors were prepared, after their visit, to make changes in their daily habits to reduce their environmental impact. We are proud of these figures, which are not only numbers but the confirmation that we are addressing an important subject in a country like Brazil.

Why a Museum of Tomorrow? It was created by a group of scientists led by an astronomer and an environmentalist, as a place to foster public debate about our shared futures. We did not want to call our museum the “Museum of the Future”, as the future is really far away and gives the impression that things are already written. That is why we prefer to call it the “Museum of Tomorrow”, which refers to a more immediate time frame as it is always tomorrow somewhere and it shows a direct relationship between our actions of today and tomorrow. We wanted to create a space that would also be a call to action. Our slogan is therefore: “Today is already tomorrow somewhere”.

How do we talk about tomorrow? At the museum, we follow two ethical guidelines: one of them is sustainability and the other is conviviality or coexistence. The first deals with how we interact with other living systems, and the second deals with how we live with each other. We define ourselves as a new kind of science museum. Our permanent exhibition is not collection-based but multimedia-based. Our exhibitions are designed to answer three fundamental questions: “Where do we come from?”, “Where are we now?” and “Where do we want to go?”

We also have some neighbourhood programs. We have a very dynamic agenda, as we organise several exhibitions, festivals and seminars. On our social media, you can see that we are offering a wide range of activities this week, particularly during the International Environment Week.

In our ethical guidelines, it is much more about ecology than it is about technology. In our day-to-day activities, we follow sustainable practices. For instance, we are a single-use-free institution and we are carbon neutral. As a whole, we are always trying to do better to minimise our carbon impact. In addition, we believe that it is

crucial to walk the talk. For example, if we have an exhibition on diversity, it is essential that this be reflected in our hiring practices. Likewise, if we are talking about plastic in the oceans, we must not use single-use plastics in our cafeteria. So, we are constantly trying to improve our practices in order to be credible.

To conclude, I would like to give you examples of practices aimed at making our spaces more sustainable.

First, we have a workshop called “The Power of Herbs” facilitated by the leader of the African Center, who has shared her knowledge on the topic. It is very important for us as a science museum to be committed to going beyond paradigms and showing other forms of knowledge.

Also, when we create our exhibitions, we always try to have a multi-disciplinary team so that we can compare different points of view and learn a lot more.

We are a new museum, created in a specific context. For us, it is much easier than for other institutions to move in the direction of the socio-ecological transition. Here in Brazil, for some years now, it has not been very easy because we have a very conservative government. However, I think we have to be bold and we cannot be neutral in our communication and our exhibitions.

Phillipe Guillet: Thank you Marina for this fresh approach and your desire to make things happen. It is true that the museum lends itself to this too, since there are no collections, but I find this example very inspiring.

Aude Porcedda: Do you see any differences between younger mediators, who may be more sensitive to sustainable development issues, and older mediators, or is this not a generational issue?

Anne Charpentier: Yes and no. For example, for our mediators and scientific outreach workers, a transition is taking place and we are starting to make a real effort to change our approach. In addition, our mediation team is made up of people from different generations. We also have around 60 volunteers, mainly women, all of whom are botanical garden and horticultural enthusiasts. These volunteers offer more traditional guided tours, giving visitors the chance to wander through the gardens and learn about the beauty of the plants.

They also share with them the history of the Botanical Gardens. We are currently working with them to help them discover other approaches to tours. However, it is important to remember that these people are not there to take the place of the museum's mediators, but to add to the actions already underway. However, we do not want to change everything, as traditional guided tours are also in demand and appreciated by a certain clientele.

Phillipe Guillet: To go further, I would like to ask a question from the chat forum addressed to Marina Piquet. In the list of sponsors for the Museum of Tomorrow appears the hydrocarbon giant Shell, so how do we manage our patrons, which ones should we accept, which ones should we decline? Indeed, even if major sponsors like Total are prepared to fund institutions and grant large sums of money, this raises a number of ethical questions. So, how do we manage the contradiction between the museum's stance and patronage?

Marina Piquet: I will first answer Aude's question. At our museum, we do not have any volunteers for mediation but I think that diversity is the key. We believe that if we have diverse mediators, we can more easily reach a wide audience. I think younger people feel that they are well received at our institution, but we have to keep working to ensure that the 60+ generation also feels comfortable with and able to use the technology we offer.

About sponsorships, here in Brazil we are highly dependent on this type of sponsorship. Currently we are 100% financed by businesses via tax incentives and we do not receive any public funding. So, it is a very different scenario than many European institutions. We have some guidelines to help us with the relationship with companies. The most important thing for us is to remain 100% independent when it comes to creative content. Companies do not contribute, do not share their opinion and do not have any influence on the content. This is critical to us and it is the priority in the contract we have with them. In addition, we ask these companies to share with us a plan showing that they are working on becoming a cleaner company in the near future. Finally, we truly believe in dialogue. We do not think that closing the door to them is going to help, because these companies have an important place in society. So, we prefer to involve them in the debate. They take part in our events, a real exchange takes place and we hope to have a positive

influence. For now, we have a very healthy relationship with these companies, not only Shell but others as well.

Phillipe Guillet: It is a very interesting question indeed, and it is very important that you have been able to maintain this freedom. We could imagine that, in a few years' time, companies could end up thinking that you do not give them enough publicity, in which case they would reduce their funding. I wanted to come back to the question of the exemplarity of our institutions towards our respective audiences. Tamar Mayer, in this dialogue between the sciences and the arts, how could you talk to us about exemplarity?

Tamar Mayer: We are the largest university gallery in Israel. We do not have any collection. Therefore, we create temporary exhibitions and always choose a topic that is timely. The current exhibition, for example, is about cognitive science and our senses in response to fake news and to post-truth. So, we always choose something that we think is relevant and, in that sense, we try to be exemplary. That is why we are keen to bring together both scientists and artists, who do not speak the same languages or do the same things. The dialogue between these two disciplines is not always easy, because scientists sometimes think they are going to get a presentation of their scientific knowledge, when in fact they get an artistic interpretation, which might also be critical, of what they do. In that sense, we become a space for dialogue, sometimes critical, and open up new perspectives for reflection.

Stéphanie Wintzerith: I had carried out an audience survey as part of an exhibition on insects. The main aim of the exhibition was to raise awareness about the decline in insect numbers and the urgent need to protect them. The survey showed that the message about the gradual disappearance of insects had got through, and that visitors generally came away with the idea that action was needed. However, we also heard from a number of people who wondered what they could actually do. We came up with a list of very concrete actions that visitors could take on an individual basis. Another outcome of this survey is that there is a very specific audience for natural history museums. One of the museums in which the exhibition was organised was a museum of ethnography, which also presents natural science exhibits. At this museum, we realised that the exhibition was reaching a different audience, and that the satisfaction and perception of the issue was different from other

museums. The result is that, depending on the museum, we have an audience that is aware of and won over by the theme from the outset, whereas, when we present an exhibition on purely environmental themes, the audience is more receptive. At other types of museum, we are dealing with an audience with different expectations. So I wanted to know whether you have come to this same finding at your respective institutions, and what feedback you have received from your visitors.

Phillipe Guillet: Marina Piquet, you mentioned a figure on the number of visitors who felt motivated to take action after their visit.

Marina Piquet: I was thinking while you were talking that it would be really nice to have a common database to share our surveys and compare our results. As far as I know, this does not exist yet.

To answer Stephanie's question, I would like to give you a few examples. We have found that visitors have come away from their visits with a real desire to take action. A few years ago, in 2018, the museum developed an artificial intelligence device with IBM. This tracked visitors' interests along the exhibition. Before leaving the exhibition, each visitor received suggestions for actions they could take according to their respective interests.

To answer Philippe's question about the number of visitors who felt motivated to take action after the visit, 80% of visitors said they wanted to change. However, it is difficult to study how many visitors actually changed their practices in real life.

Anne Charpentier: I wanted to give a few examples related to insects. The Montreal Insectarium was completely redesigned and reopened last year. What is interesting is that it was completely designed to create a positive relationship with insects. Although we say that insect biodiversity is collapsing, the problem is that people do not necessarily attach much importance to them. For most people, insects are a nuisance. So, one of our main objectives with this Insectarium is to create an entomophilia aimed at making people appreciate insects in the first place. The entire museum is designed to provide a progressive experience that leads to an encounter with insects. When visitors leave the museum, they pass through a pollinator's garden, where many native insects can be observed. This is the perfect moment to convey the message about the collapse of insect biodiversity and the concrete actions that each visitor can take at his or her own level. We offer them

a range of tools, including a participatory science programme called the “Biodiversity Challenge” and another called “Mission Monarch”. We also have a programme called “*Mon jardin : Espace pour la vie*” (My Garden: Space for Life), enabling visitors to create a garden in their own home that promotes biodiversity. Finally, a study shows that the Insectarium has an impact on visitors and their view of insects and has proved highly effective.

In addition, to pick up on the question of exemplarity, at all our museum sites we offer a vegetarian menu to show to the public that a plant-based diet is better for their health. We are also increasingly trying to take a stand on various issues. I invite you to take a look at the *Espace pour la vie* website. There is currently an exhibition at the Planetarium called “nobELLES”, which highlights extraordinary women scientists, often invisible compared to their male counterparts, who have remained unknown for too long, and who deserve to be discovered by the public. It is an exhibition created by a committed feminist artist: Miss Me.

Phillipe Guillet: How far should the institution go? These are discussions that have been going on in our science museums for several years now. For example, there was a conference on engagement in Québec City some twenty years ago. It is true that some museums have gone very far in their commitment to the cause, even going as far as activism. You could talk about a “socially engaged museum”.

Hélène Vassal: I fully support this idea of “socially engaged museum”.

Phillipe Guillet: Ludivine, could you tell us about this idea of engagement at the Museum of Nantes, which is also key?

Ludivine Vendé: Yes, this notion really is key. One example is the Agora project. In this space, we have a little more freedom to carry out more socially engaged or even activist actions, depending on the partners.

Phillipe Guillet: Yes, and I would add to that the notion of freedom at our institutions, which is fundamental.

Ludivine Vendé: Encouraging action is very important. The Connivence project, for example, is a joint project in which the

gardener is fully involved. It should be noted that gardeners do not necessarily have the same sensitivity to sustainable development or ecological transition issues. By way of illustration, some are already very aware of permaculture, while others know nothing about it or are completely opposed to it. However, this project allows us to demonstrate another form of biodiversity and other techniques, while raising awareness about the importance of the socio-ecological transition. Participatory science and participatory research can be developed to complement our exhibition tours.

Anne Charpentier: By offering participatory science programmes and reaching out to audiences outside our walls, we make progress. To give another example, twenty years ago, Aude Porcedda had already carried out work on “sustainable development and museums”, studying our group of institutions which, at the time, was called the Montreal Nature Museum. Our position was relatively neutral, and we were simply trying to understand what was at stake. Today, we are going further, and I am very happy about that. We are no longer so much about raising awareness as we are about taking action. Museums have really taken the socio-ecological transition into account in all spheres of their activity. I must say I am rather jealous of Marina and your Museum of Tomorrow, which is a young institution that has already been able to think about all these aspects. It is really part of your genetic code, whereas we have to make a relatively slow change and transition. But I think many museums and institutions are moving in the right direction. Nevertheless, I am glad Marina is here, because I think it gives hope for the ecological transition.

Tamar Mayer: I am also very jealous of Marina. I wanted to add one thing. The taxidermy I told you about came from the natural history museum of our campus. There was also another piece of the exhibition that came from the botanical garden on the other side of our campus. So, we created maps for our visitors to encourage them to go from one institution to another. We can then ask the visitors which works have had the greatest impact on them, which were less effective, etc. Unfortunately, we do not have the opportunity to contact them afterwards to see what remains of this discussion, but I think it is important to develop additional ways of measuring our impact.

Session 3

Societal Issues of Sustainable Development

Wednesday 5 July 2023

Speakers:

Amareswar Galla, UNESCO Chair on Inclusive Museums and Sustainable Heritage Development - India

Marie-Claude Mongeon, Head of General Secretariat and Strategic Projects, musée d'Art contemporain de Montréal - Canada

Diala Nammour, Director of MACAM (Modern and Contemporary Art Museum) in Beirut - Lebanon

Xavier Roigé Ventura, Professor of Museology, University of Barcelona - Spain

The session was moderated by Aude Porcedda, Associate Professor of Cultural Management and Organisation at the University of Québec, Trois-Rivières, and **Rodney Chaisson** Director of Baile nan Gàidheal (Highland Village) and Treasurer of ICOM Canada



Aude Porcedda: The social dimension of sustainable development is often misunderstood. I would therefore like to present the diagrams of the Italian researcher Isabella Pop, who has devised a theoretical model showing the different dimensions of sustainable development and in particular its social and cultural dimensions. The cultural dimension includes all forms of knowledge, heritage, identity, audiences, intercultural dialogue, creativity and innovation, as well as the artistic and cultural vitality of the region. The social dimension includes social responsibility, civic participation and action and the organisation's commitment to its employees and stakeholders. So when we talk about museums in the context of sustainable development, we need to consider all of these aspects. Since 2015, the Sustainable Development Goals have emphasised the "5Ps" rather than the three dimensions of social, economic

and environmental issues: Planet, People, Prosperity, Peace and Partnerships. From now on, all the goals linked to the environment and socio-economic issues are interconnected. Until now, societal issues in museums have been linked to mediation and our audiences, but today we are going further, tackling them on the scale of our organisation (e.g. human resources management), our territory (e.g. relations with local stakeholders) and even humanity (e.g. our relationship with others and nature, inclusion and decolonisation).

Rodney Chaisson: I am the Executive Director of Baile nan Gàidheal | Highland Village and ICOM Canada Board Member. ICOM Canada identified climate change and climate justice as one of our top priorities. Elka Weinstein and Victoria Dickinson are leading an initiative in cooperation with the Coalition for Climate Justice. The aim is to develop a special programme for museums and heritage institutions to help them reduce their use of plastics and therefore reduce the amount of microplastics that are ending up in our waters. This is a three-year project with a pilot project currently underway at different museums, including the Aga Khan in Toronto and my institution here on Cape Breton Island.

Our first speaker is Amawesar Gala, who is currently the Professor of Inclusive Cultural Leadership and UNESCO Chair on Inclusive Museums¹ and Sustainable Heritage Development. He served as the former Vice President of ICOM and the Chair of ICOM's Cross Cultural Task Force between 2005 and 2011 and is the Founding Trustee of the Pacific Island Museums Association and has led a number of other initiatives in the Asia Pacific Region. He is also the Editor in Chief and Founder of the Economic Journal, *International Journal of the Inclusive Museum*, and former Editor of the *International Journal on Intangible Heritage*.

Amawesar Galla: I am an unhyphenated IndoAustralasian. I came back to India from Australia in 2015, invited to work on an eco-museum project called *Kodallu* (literally meaning “daughters in law”). It is a cultural project on development, addressing SDG 5.

¹ International Centre For Inclusive Cultural Leadership (ICICL), AnantU – International Institute for the Inclusive Museum. (s. d.). <https://inclusivemuseums.org/index.php/anantu/>

If you log on to the Sustainability Collection², you will find that I established the sustainability knowledge community with culture as the fourth pillar along with social, economic and environmental interests. Outstanding global research outputs form the Collection. The Kodallu project is part of this applied project momentum.

The village at the centre of the project is Amaravathi in the South Indian state of Andhra Pradesh. His Holiness the 14th Dalai Lama, Tenzin Gyatso, has often mentioned that Amaravathi as one of the most sacred sites dedicated to Buddhism. It is the birthplace of Mahayana Buddhism. He conducted the *Kalachakra* ceremony there in 2006, some 600 years after the previous one in the 14th Century, drawing on the evolving intangible heritage of Mahayana Buddhism. However, Amaravathi's tangible heritage remains in ruins and the sites are poorly conserved.



The site where His Holiness conducted the Kalachakra ceremony has the largest Buddhist Stupa in South Asia. Unfortunately, most of the sculptures from it were removed or stolen during colonial times. There is based a major international school of art called Amaravati School of Art. The most significant collection is in the British Museum. Recontextualising and revitalising Amaravathi heritage in all its manifestations is a major project that I have worked on from the end of 2015 with the blessings of His Holiness The Dalai Lama.

⁽²⁾ <https://onsustainability.com/about/history>



Ma Vuuru Ma Kodallu, “our town and our daughters-in-law” (hereafter Kodallu) was launched as a project on International Women’s Day on 8 March 2016. Participatory cultural mapping and self-empowerment of women were central to the Kodallu project. Demographics of the town revealed that locally born women married men from outside Amaravathi and left for other places, whereas women born elsewhere married men from Amaravathi, mostly farmers and traders, and made the small town their home. They brought with them knowledge of their mothers and grandmothers. Homemaking, child rearing, sharing traditional stories, diverse cuisine and traditional medicines and healing are part of it. In short, they transplanted the living traditions and cultures of their birthplaces to Amaravathi. They often wore the same *sari* in which they got married in their mother’s home when they moved to their husband’s home in Amaravathi. The fusion of their respective heritage values formed the heart of the town’s culture. However, until the Kodallu project started, they had no voice in the town. Therefore, it was a transformative project that demonstrates that intangible heritage is living and dynamic and that it has no borders. Ecomuseology has proved to be an invaluable method for bringing people and their heritage together, especially self-empowerment for women and girls (SDG 5).



One of the local women, who is a weaver and artist, painted the map of the place on silk. Over 20 sites were mapped. Ninety-six Kodallu, the oldest of whom was ninety-four and youngest twenty-three, formed the self-help women's group for the project. They were from various castes, religions and communities. Twenty-six were active using WhatsApp to communicate. Three were employed on the project. Individually, they were isolated in their own streets and homes. In the civic space of the Amaravathi Heritage Centre and Museum, they became a collective with the understanding that their heritage values from diverse places and their local fusion formed the quintessential Amaravathi culture and heritage that is dynamic, evolving and informing the next generation's sense of place and identity.



They took ownership of over twenty places with residual intangible heritage for community cultural development. They were responsible for reinterpreting and presenting the artefacts in the local museum. Performing arts, especially classical *Kuchipudi*, was performed in the main temple for the first time since October 1947. Classes were initiated for primary and secondary school pupils. Even though it is a Brahmanical Hindu dance, even Sunni Muslim women brought their daughters for the classes. They used to sit with the *burka*, watching their daughters dancing. Ground art or *Muggu* was revitalised during the annual Harvest Festival, *Sankranthi*, and other festive occasions. Women of all ages and backgrounds reclaimed the main street of Amaravathi. *Muggu* competitions were held in three categories: grandmothers, mothers and daughters. Local farmers, who were either husbands or fathers-in-law of the daughters-in-law, funded all the activities.



Twelve dilapidated Mother Goddess temples were rehabilitated. Unlike the bigger temples where the consort is often subordinate to the main male god, in the Mother Goddess temples the female deity in her contextual locality is predominant. The demonstration project is the Balusulamma Thalli Gudi Temple. Her idol was recovered after it was stolen in connection with illegal art trafficking. The day of her reinstatement in the temple on 7 November became a *jataral*

major day of celebration, rituals, blessing and feasting. Kodallu played a major role in the festivities. The dilapidated temple has been conserved to its 13th century form. Rituals have been revived. Naming of new-born babies, first sightings of babies by their grandparents, and a number of traditional rituals that were endangered have been revived through intergenerational transmission between older women, men and Kodallu. Traditionally, ploughs and bullock carts were brought to Balusullama for blessings. Now even new motor-bikes are brought, especially if they are for teenage daughters. The temple area including the neighbouring large banyan tree became part of the civic space for Kodallu to build on their solidarity.



In the shade of the banyan tree, Kodallu gathers for ceremonies and rituals. The Kodallu project included preventive conservation workshops for objects of significance in their homes, often from the past two centuries and brought from their birthplace. That means they brought them into the museum, they received training and then took them home and learned how to look after them. The overall idea is that every home or hearth is a living museum.



As for art and antiquities, women's perspectives have been promoted. They also tried to influence the major western museums to transform their dominant aesthetic and male gaze with women's perspectives through interventions. Two major contemporary art exhibitions by Kodallu from Amaravathi and the neighbouring districts have been showcased. These are multi-day art studios where the daughters-in-law from across Andhra Pradesh State discuss their ideas and their perspectives through their own creativity.

The Kodallu project promotes intercultural and intergenerational engagement as well as events across social and cultural borders. Public posters include the image of trans-youth, highly respected traditionally. It is very interesting that trans-women and trans-men were highly respected until the colonial regimes disempowered them in the 19th century by calling them "ugly" and minimised the benefits they had through the local rulers and communities at the time.

Women are able to participate in the arts and craft exhibitions. They are able to not only participate, but also further their skills, such as lace making, basketry and storytelling. The transformation of the life of women through the Kodallu project in Amaravathi has become a testament to women's self-empowerment and self-respect. Men publicly sponsored activities. Initially they were hesitant, but soon they played a supporting role and often praised the ability of the Kodallu to bring to life the dormant, historical and cultural landscapes of Amaravathi. It is an example of SDG 5, especially when it comes to gender, culture and sustainable development.



Important aspects are self-respect, dignity and the ability of women and girls to participate in the local community. The advocacy of Kodallu stopped child marriages (eleven to twelve-year-old girls were being married and consequently, most of the widows were under the age of 30 with at least two children from child marriages). These women started receiving overdue government support through widow's pensions. They were supposed to get them legally, but they were not getting them. Marriages between uncles and nieces and between cousins are not practised anymore. They were the tradition but these family marriages resulted in a high number of children being born with disabilities. So the idea was to implement an educational programme through the ecomuseum to raise women's awareness and husband's awareness about disabilities through close-kin marriages.

Very often, girls with disabilities were not allowed to go to school because people often say that if you have a girl who is disabled in your family, nobody will marry into your family. Therefore, mothers would keep them home.

Kodallu started a new school for girls with disabilities. Another initiative is that girls from lower castes were trained to look after their own safety and be aware of their cultural empowerment. Culture in development is helping them to address social development and

sustainable development. It is an approach that UNESCO has been advocating as part of its culture and development approach.



Young women, who would have never been on the main street started performing, celebrating and taking over the main street. Participating in main street life actually means dignity, self-respect and well-being.

The Project Lessons include the following:

- Rigorous participatory cultural mapping is critical for ensuring the participation of women in sustainable development;
- Women's ownership of their own community cultural leadership is a sign of sustainability;
- Intergenerational transmission of cultural heritage and redress to overcome gender, caste, class and other cultural divides; and
- Civic spaces such as museums and heritage spaces can be empowering for women through local initiatives.



Ecomuseology has proved to be an invaluable method for bringing people and their heritage together, especially for women and girls. Here you see on the main street with the main temple, the local women forming the jury for ground art and evaluating it.

Rodney Chaisson: I am going to introduce the next speaker, who is Diala Nammour. She has been with the Modern and Contemporary Art Museum since 2020 with a Double Masters in Social Psychology called “Prejudice and Intergroup Conflict and Visual Communication”. She worked as a researcher from 2000 to 2002 in Lebanon and then as an artistic director from 2008 to 2020 for cultural institutions and publishing houses in France. So I am going to hand the floor over to Diala.

Diala Nammour: I am the Director of MACAM, the Modern and Contemporary Art Museum in Lebanon³. The museum is about 40 km away from Beirut and about 10 km away from the bigger cities in the area. We are located on an old industrial complex that was

³ MACAM Lebanon. (n. d.). MACAM Lebanon. <https://www.macamlebanon.org/>

transformed into MACAM ten years ago. We specialise in modern and contemporary sculptures as well as installation art. We have about 2,000 square meters of permanent exhibition space and large outdoors spaces with a sculpture park.

With the Delegation of the European Union to Lebanon we created and gathered 12 murals into the Wall of Contemplation. Those twelve murals were a call of participation for international graffiti artists and artists of all backgrounds to take part in the celebration of the 70th anniversary of the Declaration of Human Rights. They each worked on one or more human rights articles.

This collection and the Wall of Contemplation are the basis of the educational programme we are implementing. We have a diverse audience when it comes to schools. They come from different regions to participate in artistic activities such as storytelling, learning about the Lebanese art heritage and topics on human rights. Our museum is on one level and therefore accessible through ramps to people with limited mobility. Part of our collection is accessible to people who are blind and have vision impairments. We have labels in Braille and part of our exhibition was specifically created with the help of the Red Oak Association and the Omero Tactile Museum in Italy. We also have different programmes and different activities around art, well-being and nature. We also have a large hiking area, allowing us to address biodiversity and waste management issues.

We are in a region that covers around 20% of the Lebanese territory. It is a low-density area and we are 7 km away from the coastal highway. In terms of access, we do not have a lot of public transportation options. Moreover, there are a few historical and archaeological sites, such as Yanu and Mashna, which have Roman ruins. We have several biospheres and natural sites around our area. So, the surprising thing is that, despite the lack of public transportation, we have had consistent demographics since 2013. Our visitors are both people from Beirut and international tourists.

The percentage of people from our region has always been very low. Since 2019, Lebanon has been going through a very harsh economic crisis. The question of transportation is worse than ever in addition to the issue of gas. So, despite the fact that we have entries paid by donation, it is still costly to get to us.

The hiring policy at MACAM has been targeted towards people from the region. We try to gear our advertising on social media towards our region, but it has not been working. To give you an anecdote, I was going to work by taxi and passing next to a building of an old factory next to MACAM, which used to have its whole production line there and hire 50 to 60 people when they were all working jointly. The taxi driver asked me what the building was and I told him it was a factory. He said, “Yes, but why is it open?” And I explained that it had not been in operation since the machines were sold, and now there is a museum. I told him about our educational programme, our wall on human rights, our access to a place that is potentially free for people with low income and that we showcase our Lebanese art heritage. He told me that all that was good, but the museum could be elsewhere. “There is an industry here, a factory.” So he was talking about potential and the end of this conversation really resonated with me. He was talking as our responsibility towards our region. Even in Byblos, people know about us as the factory but less about MACAM. So, that was the whole question about how to attract people that do not know us and mostly how to attract visitors that we do not know.

Our entire policy has been about creating very concrete outreach programmes to export us from MACAM to the rest of our region. However, being at a 600-metre altitude, it gets very cold in winter. So we have been thinking about using the low season to go to public schools. We have selected six schools in a 15-kilometre radius to go out and bring them a little presentation about the collection and provide them with art activities. These activities will also be provided at some community centres around the rural mountain area around us.

Before that, we started to make a 100% local shop and cafe. Those first conversations with local producers from our regions were surprisingly illuminating because we have similar concerns and are working on similar issues. Our local producers compost and have the same interest in reducing their waste.

There is a lot of talk about reducing our carbon footprints and discovering other people working on the same thing. We have started to integrate local producers, regional producers and local designers that are also on the same page as our brand and the contemporary art that we are presenting.

Another project we are working on is the creation of a market. Here the idea is to make stakeholders from the region participate in the

creation of this market. We have met a lot of people. At first, most of them did not know about our graffiti walls, about human rights, about our biodiversity walks and all the projects we work on. So this project is about bringing people to us, but in a very natural way, through their own community.

We are really hoping to have active participation from our local people for them to raise awareness about the museum. The Lebanese bee by Lebanese people is a vestige from the factory before it closed. There was a call to create local products to encourage people to buy local when we started to import cheaper products and sometimes more internationally-renowned products. There was a desire to promote local products as it significantly reduces our carbon footprints among other things. The idea is also to build bridges and to engage the community to participate more in museum activities.

We have met craftspeople who are willing to share their skills with the greater public. We also want to develop training programs about Internet AI or even technical know-how in art for people who are interested in the region. At the beginning of the year, we started to gather more data about our visitors and we will adapt our programmes according to the feedback we receive. I think that this conversation is also about listening to the public that we have not reached yet and adapting our programmes. We are going to really play it step by step. Through mutual support and engagement, we will be able to ensure that our museum is relevant to our region and not merely perceived as such, but truly relevant where we can really be there for our community. The same way this factory was before it closed 30 years ago.

Aude Porcedda: I will now give the floor to Marie-Claude Mongeon. Marie-Claude Mongeon has a Bachelor's degree in Art History from the University of Ottawa and a Graduate degree in Corporate Sustainability and Social Responsibility from the University of St. Michael's College at the University of Toronto. She is currently head of the *secrétariat général et des projets stratégiques* at the musée d'Art contemporain de Montréal, a member of the advisory committee of the Coalition of Museums for Climate Justice, and a member of the board of directors of the Canadian Museums Association and the Centre for Sustainable Practice in the Arts. She was co-curator of the *Société des musées*

du Québec's annual symposium in 2022 and also worked for 15 years at the National Gallery of Canada, where she held a variety of positions.

Marie-Claude Mongeon: Today I wanted to talk with you about the social aspects of sustainable development, both through a strategic approach and through the projects that ensue from it.

First of all, the musée d'Art contemporain de Montréal is located on untransferred first nations land and respectfully and gratefully acknowledges the *Kanien'keháka* Nation as the custodian of these lands and waters. Traditional Aboriginal territories are known as *Tiohtià:ke* to the *Haudenosaunee*, *Mooniyang* to the *Anishinaabeg*, and Montréal to many other peoples. Today, a diverse Aboriginal population, as well as other peoples, reside there.

We have mentioned the three pillars of sustainable development (ecological, social and economic). Presented in this way, we might think that there is a real distinction between these aspects, even though all of these issues should be considered as inseparable. The economic model puts pressure on social and environmental issues and can therefore lead to issues such as climate justice, invisibilization and oppression or colonisation and decolonisation. It is therefore entirely possible to align the spheres of socio-ecological issues and museums through mediation, education and museum responsibility.

In Canada, museums, galleries and libraries attract over 150 million visitors a year (pre-pandemic figure). There is a link between the quality of life and health of individuals and the number of visits to museums. In the eyes of the public, museums are one of the most reliable sources of information: "They are second only to friends and family, but much more reliable than researchers and scientists" (AAM, 2021). Museums develop extensive networks of local, national and international partners and are recognised as some of the best-positioned organisations to stimulate social and environmental change. According to UNESCO, there are nearly 95,000 museums in the world. So there are more museums in the world than McDonald's, which is a great comfort to me.

Over the last few months, while I was working with colleagues on another presentation, we got to thinking about acts of vandalism or activism in art museums, particularly in Europe and North America. One example is activists throwing food at paintings. In London, one

protester shouted: “What is more valuable? Art or life? (...) Are you more worried about protecting a painting or protecting our planet and people?”

So what can we deduce about the museum sector from what activists are doing? There are six myths that I would like to counter:

- Museums are ‘neutral’: In reality, museums must be transparent in the decision-making process, notably through participatory governance and recognition of our history and our stakeholders.
- Museums are inaccessible: Sometimes described as places of the elite and colonialists, museums nonetheless seek to be open to the interests, cultures and values of diverse communities, particularly indigenous and under-represented communities.
- Museums have no power: This is not true; these activist actions are a wake-up call for the sector, an opportunity to listen and initiate a conversation and provide a better understanding of the social impact of museums.
- Museums are static and a reflection of the past: In reality, museums are not disconnected from the current context and should engage and dialogue with the people who are seeking to take action on social and ecological issues.
- Museums play a secondary role: In reality, museums have a role to play and hold a key position in promoting culture and passing on knowledge.
- Museums are secondary in the climate crisis: In reality, they must analyse their ecological footprint and their ties with the fossil fuel industry and its investors.

I would like to quote Mike Murawski’s book *Museums as Agents of Change* to talk about the idea of museums as “agents of change”. To do this, several steps need to be taken. First of all, you need to identify the museum’s stakeholders and better understand their influences and expectations. Then we need to ask ourselves some fundamental questions to address the social issues and embody change in the museum. These questions could be: “What issues are important to our stakeholders?”, “What are the desired outcomes for each stakeholder?” and “What resources does the museum have to achieve, measure and improve these outcomes?” To answer these

questions, we need to adopt a cross-disciplinary and participatory approach. It is important to create working groups and committees to establish action plans and guideline policies.

The musée d'Art contemporain de Montréal was inaugurated in 1964 and has moved four times in its existence. Currently, the museum is housed in a shopping centre and we have a gallery and an educational workshop. We are waiting for our premises to be renovated and better adapted to the needs of the community. We are also setting up a number of activities aimed at different audiences. These include the School in the Museum project with GREM, the Festival Art Souterrain, and tours for the hearing impaired as part of our universal accessibility policy.

We are also in the process of finalising the adoption of our next strategic plan, which emphasises the importance of sustainable development within our institution. It has three main components. The first is the inauguration of the new MAC, which we hope will be a living celebration of contemporary art. The second sets out the MAC's vision of its outreach, particularly through strategies for bringing contemporary art closer to the public and emphasising the concepts of accessibility and inclusiveness. Finally, the third component focuses on the issue of sustainability at the MAC, our aim being to make the museum a player in the socio-ecological transition. These themes go hand in hand with a variety of projects that will be implemented over the medium in the long term, such as the deployment of a strategy engaging with aboriginal communities and working towards greater diversity among museum staff.

The message I wanted to deliver is that networks and working groups within the institution and between organisations are a fundamental component of sustainable development efforts. I am on a committee with four or five museums with whom we have monthly discussions about our sustainable development action plans and things we could do together. By the way, the theme of next year's Canadian Museums Association conference is "The Future is Collaboration".

Aude Porcedda: We will now give the floor to Xavier Roigé Ventura, Professor of Social Anthropology and Museology at the University of Barcelona. He founded the Master in Museology and Cultural Heritage Management at the University of Barcelona, of which he was director for twenty years. He has held a number of academic

positions at the University of Barcelona, including Vice-President of the PhD programme. His research focuses on museums of society, ethnology and memory, as well as intangible heritage. He is currently coordinating a research project on museums and sustainability. He has produced numerous publications on museology: the latest include a book on the impact of Covid on intangible heritage, an article in *Culture & Musées* on the transformation of society museums in Spain and others on the impact of Covid's effects on museums and heritage and what this teaches us in terms of sustainability.

Xavier Roigé Ventura: Museums are powerful institutions for social change and transformation. I would like to start with the idea of sustainability and its social aspects. Then, I would like to show the contradiction between the social goals of museums and the neoliberal tendencies of many institutions. Finally, I would like to show the strategic areas that I believe museums should consider from a social perspective.

First, sustainability is a concept that we often use in all areas of our lives: hotels, transportation, governments and advertisements claim to be sustainable. Moreover, the context is different from country to country, and museums have different priorities and ways of operating. That is why I wonder what sustainability really means. There are many publications on the subject, but we must ask ourselves what lies beyond these declarations of intent.

We often forget that sustainability is a broad concept. Although sustainable development also refers to human rights and gender issues, most people associate it with the environment and climate change. However, the social and cultural dimensions of sustainable development are also critical. We cannot understand sustainability without understanding cultural sustainability. Cultural sustainability refers to the balance between communities and cultural institutions as actors in conveying the challenges of these communities.

Also, we believe that museum sustainability is a new concept, when in fact museums, from the beginning and especially since the new museology movement, have had a social dynamic. Clearly, new museology is based on sustainability even if it does not call it that (ecomuseums, for example). Therefore, during Covid we talked a lot about the need for more social and sustainable museums. The impact of Covid on museums was particularly significant and gave us ideas

to address the issue of sustainability. All museums had to subsist without visitors and tourists for a long time. They had to undertake social actions outside the museum, reach out to the public... and, in general, this led museums to rethink their social dimension.

Moreover, museums today are in the midst of a great contradiction. On the one hand, we have the idea of a neoliberal museum driven by tourism, the creation of huge buildings as new elements of our society, the construction of museums in other countries as a form of cultural diplomacy and the proliferation of private museums that want to survive and make money with their own resources. On the other hand, the museum must be a social museum. This distinction creates schizophrenia among museologists: they are asked to be profitable and at the same time to work closely with the public and be strongly social. Unfortunately, museums are often seen as places of elitist power and tourism, while most museums are small, very social and engaged.

The idea of neoliberal museology creates rejection from the local population. In fact, the population often sees museums as institutions that promote elitism, increased tourism or even gentrification in their neighbourhood. This often leads to protests from neighbours and local residents. In Barcelona, for example, there have been campaigns against the construction of private museums, as well as public demonstrations against the public museum of contemporary art, which was and still is seen by part of the local population as a tourist attraction that changes neighbourhoods and makes them more touristy. It is also interesting to note how climate activists have acted in museums because they have seen it as a place of power.

Museums are social agents, but most people do not see them as such. The neoliberal model that has spread through many museums presents a number of problems. Specifically, there are five major challenges for today's museums to overcome this sometimes-negative perception.

The first challenge is to survive economic impacts. During the 2007 crisis and during Covid, we saw a significant reduction in museum budgets and an impact on employment in the sector. So, how do we achieve economic sustainability without abandoning social projects? How far do I allow private funding without jeopardising my social role as a museum director?

Another challenge is to adapt to digital impacts. We are currently witnessing a slow transition, with many questions and unknowns. Digital media offer us forms of participation that cannot be overlooked and are important.

There is also the idea of a more collaborative and participatory museum, not only in the actions that can be carried out with our collections, but also in terms of the very essence of the museum. Social participation and collaborative and participatory museums are possible, not only through actions that bring people to the museum, but also by changing the image of the institution.

The fourth challenge, and one of the most important today, is decolonisation. This challenge has important political impacts. Although certain symbolic actions of returning objects or changing the image of the museum are sometimes carried out, the challenge today is to go further. It is necessary to break the taboos on the conservation of collections and the return of objects. This requires a rethinking of museums as a whole, and not all political powers are ready to take up these challenges.

Finally, the fifth theme is social engagement with current issues in our society, such as gender, multiculturalism, memory of the past, conflicts, climate change, resources, migrants, refugees and social inclusion. The museum has the advantage of being a credible institution that is close to the people. It is generally perceived as a neutral institution, much more so than governmental or educational institutions, such as universities. But this commitment clashes with the proliferation of the neoliberal museum, the economic crisis and its effects, other social priorities and the interests of governments that see museums as agents of identity discourse.

To conclude, when we talk about museums in general, we are talking about society. We are going to try to create more socially engaged museums, and this requires a real change in institutional culture in a society where the threat of authoritarianism and racism hangs in the balance. The social dimension of the museum must be a priority, even above other strictly museum functions. This forces us to open another debate - of greater depth - on the decline of museums or the “depatrimonialisation” of museums. The three perspectives presented by the previous speakers were particularly interesting for understanding different contexts. I wanted to know, whether in India, Lebanon or Canada, what political obstacles they have had to face, since museums are not necessarily totally free.

Amawesar Galla: When authorities and politicians see a project that is really gaining momentum with people, they like to get involved. However, out of the 20 projects during COVID, 18 continued because they were locally owned, whereas the two projects where the government was involved were closed.

The challenge is that if these women you see sitting together were men, I doubt that they would, considering they are so-called *Dalits* or *Untouchables*. However, somehow the daughters-in-law transcended all these discriminatory boundaries and worked together.

Although I was not born in that place and not from the local community, they accepted me as one of their own because I spoke the local dialect. So ecomuseology needs community-based cultural leadership, not “parachute consultants” who leave once they get their money. India’s government is really committed to museum development, but, unfortunately, progress is very slow.

Diala Nammour: In the case of Lebanon, we are now experiencing quite serious difficulties. It is not a lack of interest, but we cannot count on the financial or moral support of the Lebanese government, but rather on other sources of funding such as embassies, international and regional funding organisations, as well as solidarity-based collaborations. The day when the government does not put obstacles in our way, the country will be better off and we will have gained in visibility, which is not the case today.

Rodney Chaisson: I thank all of our speakers for their presentations today. We covered a number of sustainable development goals. I liked what Marie Claude said about a monthly sustainable development working group meeting, which is a great idea for museums.

Émilie Girard: I will end with Marie-Claude’s message of hope: remember, there are more museums in the world than McDonald’s.

Session 4

Training and Research

Wednesday 27 September 2023

Speakers:

Blaise Kilian, Co-director of the Cambodian Museum of Economy and Currency (SOSORO)

Ernest Kpan, President of ICOM Ivory Coast

Manuelina Duarte, Expert in Social Museology

Michela Rota, Architect and museum and sustainable development consultant; coordinator of the Working Group Sustainability and Agenda 2030 ICOM Italy - Italy

Session moderated by H el ene Vassal and Rita Capurro, ICTOP members.



Emilie Girard: Research and training are very important issues for our museums.

Leena Tokila, *ICTOP chair*: First, I would like to briefly introduce the ICTOP (International Committee for the Training of Personnel) and its activities. ICTOP was one of the first ICOM International Committees (founded in 1968). Our committee is committed to promoting education at university level, training programmes and professional development, as well as sharing knowledge with professionals in the museum and heritage sector. We also have members who are experts in museums and members working in continuing training positions in diverse institutions and associations. We all have a shared interest in developing education to better meet the requirements of the museum and cultural heritage sector in terms of curriculum and educational models. We welcome museum heritage professionals and researchers to share their good practices in education and training. One of our committee's main strategic goals is to organise annual conferences outside Europe as often as possible in order to better understand the local needs of museums.

We are currently discussing how the curriculum or research topics should be relevant to the issues of sustainability and ecological responsibilities. This year, the ICTOP Conference will be in Paraguay, in collaboration with the ICOM International Committees (ICTOP, ICMAH, INTERCOM, MPR) and ICOM Paraguay. The topic of this conference will be “Museum Leadership in Climate Action”.

In addition, we take part in different projects as full or associate partners. For instance, we were a partner of the ICOM Solidarity Project 2021/2022 “Training the Trainers: Facilitated Workshops to Train Leaders in Conservation Risk Assessment”. We also took part in the Young Professional Forum “Emerging Skills for Heritage Conservation” by the Centro Conservazione e Restauro La Venaria Reale (Torino, Italy). Moreover, we are an associated partner in the EU CHARTER Alliance project (2021-2025).

ICTOP activities include the production of several resources. *ICOM-ICTOP Museum Professions – A European Frame of Reference* (2008) is, for example, a significant publication that refers to explicitly required education for certain museum professions. In addition, you can find our publications on the ICTOP website (www.ictop.org), such as *ICOM ICTOP Communication Oriented Museums* (2021) and *Access and Inclusion in South and South-East Asian Museums* (2020).

Rita Capurro: Aligning with the visions of research based on reliable data analysis as well as with experimentation, which is useful to present scenarios and foresight, is essential for the future of museum professionals. Social and environmental sustainability is a paradigm that often interferes with the economic pillar of sustainability. In an ideal world, sustainability is a perfect balance of different ingredients, but, in some cases, we cannot create a balance that satisfies everybody. This is the case in my field, that is tourism, where the success of a museum is still measured by the number and the internationality of visitors. Therefore, as the Italian geographer Manzi said: “sustainable tourism is an achievable oxymoron but a necessary metaphor”.

Speakers of this session will introduce us to several methods of research and training examples that can transform this metaphorical and unreachable target into a real goal.

Our first speaker is Michela Rota. She is an architect with a PhD in Cultural Heritage whose research focuses on the science of sustainability and museums. She is very active in the ICOM Working Group on Sustainability and has different experiences in research that are summarised in the book she published in 2022 *Musei per la Sostenibilità Integrata*. In addition, she collaborates in different training programmes, and she will introduce us to her methods of research about sustainability and museums.

Michela Rota: Today, museums look at sustainable development to encourage participation and action in a process of awareness and skills development to generate social and environmental impacts. In several cases, they also act as vectors of change for sustainability, engaged in different topics that can be faced in a complex framework of integrated aspects. These topics can be seen as a roadmap towards sustainability with a range of approaches and opportunities. Addressing the complexity of contemporary social, climate and environmental challenges requires resetting the strategy towards many issues. It is a path that follows criteria and actions both at the scale of the building, governance, programme and activities in relationship with communities.

The range of topics is huge: the whole building & energy systems, the design criteria for reducing the environmental impacts for the well-being of people and many others. By involving different professionals, skills and knowledge on specific topics, museums can contribute to strategic research and then to systematic projects for sustainable development that can be applied to different contexts. All these topics can require specific research as there is a huge need for new ideas and new visions.

There are many fields in which museums are starting to be active. For instance, citizen science projects encourage volunteers - often without any scientific training - to take part in research on many topics. They might be asked to translate documents or help with observations of natural phenomena. There are opportunities for everybody to support the work of scientists and create new knowledge. The greatest advantage of having citizens participate in scientific research is the production of a large amount of data and information. Without the contribution of volunteers, it would be impossible to extensively and constantly monitor things like animal movements or climate changes. People can contribute to data collection, for example through apps that

monitor pollution such as “Noise tube”. Nevertheless, citizen science is not free from criticism from the scientific community, especially regarding reliability. Some authors argue that people without scientific training could collect or process data in a way that introduces errors. For this reason, citizens must be properly informed about what is required and museums can then help organise these trainings.

In Italy for instance, MUSE, the Science Museum in Trento, which has put sustainability at the core of all its actions, is a research centre with internal researchers helping the promotion of citizen science projects. One of its tasks is to interpret nature at different levels. With regard to the research methodology, I think it is really important to have a reiterative approach related to sustainability, where all topics can be involved. The different elements are: the definition of needs, the identification of topics, the conceptualisation of a path through participation, the development of tools and programmes and finally testing and evaluating the process. In the end, there can be different outcomes, such as new tools, activities, implementation of best practices and new benchmarks and KPI standards.

As an example of research that involves museums in sustainability, I would like to present the Museintegrati research project promoted and financed by the MASE – Italian Minister for the Environment and Energy Security (former MITE - Italian Minister of Ecological transition). It is a project coordinated by MUSE - Science Museum in Trento with ICOM Italy and ANMS - National Association of Scientific Museums. The Museintegrati research project has several objectives:

- Support the development of an Italian network of museums as community places active in sustainability;
- Develop research with 30 Italian museums to discuss specific topics and the role of museums in sustainable development strategies linked to urban agendas;
- Disseminate and promote orientation towards the 17 SDGs and national and local strategies in educational, participation and communication activities;
- Promote best practices and policies to support local sustainable development strategies; and
- Create systemic alliances.

There are also different research activities such as the mapping of museum sustainable best practice which are broken down by SDGs and are aimed at checking the main trends in the Italian museum ecosystem. It has also carried out five workshops aimed at exploring research topics in greater depth and developing new ideas in the field of museology of sustainability. One of the outcomes is the publication of *Guidelines for Collaboration between Museums and Young Activists for the Environment and Climate*. These guidelines are also available in English.

One of the goals of Museintegrati is to inspire museums to embrace sustainability and the SDGs, promote best practices and take care of the cultural and natural environment with the collaboration of their communities and other stakeholders. To reach this goal, participants have agreed on the importance of dialogue and the creation of a network for sustainability. Museum professionals have agreed on the positive effect of the network for the 30 museums involved in the research to share and listen to different experiences, to overcome the critical points encountered and to open up to new ideas to face modern challenges.

For the future, as ICOM Italy and the Italian Working Group on Sustainability and 2030 Agenda (established in autumn 2023), we would like to enlarge the number of museums and professionals involved in the activities, towards a platform for Italian museums dedicated to sustainability, ecological transition and climate emergency and 2030 Agenda in general. We would also like to develop a sustainable museum ecosystem that can continue over time and be implemented, thanks to partnerships with other institutions, to deal with local innovation, policies, education, design and regenerative and social urban planning.

Last but not least, we are working on a new project called MUSEINTEGRATI OPEN in a continuous process of testing and implementation. We are open to developing new research projects and implementing them with other ICOM Committees or research centres.

Rita Capurro: This presentation has introduced us to the connections between museums, research, and academic training.

Our next speaker is Ernst Kpan, who worked as a museum curator for over 10 years at the Musée national d'Abidjan. Ernest Kpan obtained his PhD in Art, Culture, and Development in 2018. Since

October 2022, he has been working as a Higher Education Assistant (*enseignant chercheur*) at the Institut National Supérieur des Arts et de l'Action Culturelle (INSAAC). He is the current President of the Ivorian section of the International Council of Museums (ICOM Ivory Coast). He has published several academic papers in English and French.

Ernst Kpan: I am going to talk to you about museum training and research in Ivory Coast in the context of sustainability challenges: diagnosis and prospects.

Overview of Museums in Ivory Coast

Practices similar to West African museum institutions have already existed. However, it was at the beginning of the 20th century that the museum as a specialised institution entered the West African sub-region, following the creation of the Institut Français d'Afrique Noire (IFAN) in Senegal. The museum, which is a two-and-a-half-century-old institution with European connotations (Mairesse, 2014), new forms of which continued to emerge at the start of this millennium, settled in Ivory Coast from the 1940s onwards. The impact of time, space and people have often made it difficult to preserve collections. Nevertheless, the pre-museum heritage of Ivory Coast was seen through the prism of family heirlooms' conservation and the perpetuation of initiation rites. Today, the cultural assets displayed in the national museums of West Africa in general, and the Ivory Coast museum in Abidjan-Plateau in particular, are linked to the Dakar-Djibouti Mission (1931-1933) led by ethnologist Marcel Griaule.

In addition, Ivorian Act no. 87-806 of 28 July 1987 on the protection of cultural heritage structures the museum landscape into two categories: public museums managed by the Ivorian State (national and regional museums) and private museums. It should be noted that the dozens of museum institutions in Ivory Coast focus much more on movable heritage of historical and anthropological interest. This heritage is made up of masks, statuettes and everyday objects. The Musée national in Abidjan, officially known as the musée des Civilisations de Côte d'Ivoire, remains the best-known museum. Renovated 10 years ago, it now houses over 16,000 artefacts. In terms of mapping Ivorian museums, there are medium-capacity museums in Korhogo, situated in the north of the country. In the

eastern part of the country, there are four museums located in the towns of Bettié, Zaranou, and Abengourou (Musée Bieth and Musée Royal) ; in the south, in the first two capitals of the Ivorian nation in particular, we have the musée du Costume in Grand-Bassam and the musée Combes in Bingerville.

In addition, intangible cultural heritage, passed down from one generation to the next, is constantly recreated in interaction with nature and history and provides communities with a sense of identity and progress. This intangible heritage generally encompasses local arts, languages, dances, songs, stories and legends. To manage this diversified heritage in a spirit of sustainable development, training organisations and infrastructure have been created.

Training and Research Facilities

The need for museum training in West Africa was identified in 1962. With the help of UNESCO and the UNDP, the very first facility dedicated to the museum profession was set up. This was the Centre d'études en Muséologie in Jos, Nigeria, in 1964. Sixteen years later, another regional museology training centre was created in Niamey, Niger, offering courses exclusively in French. Budgetary constraints curb the growth of these institutions. Nevertheless, a significant number of West African museum professionals maintain ties with their colleagues in France and cooperate on training, research and exhibition projects. Symposiums and seminars are organised, usually coordinated by ICOM and ICCROM. These formative meetings provide an opportunity to exchange views on the relationship between museums and development, with a focus on training and research during the historic museum meetings of 1991, held simultaneously in Ghana, Togo and Benin. The establishment of the West African Museum Program (WAMP) in 1982, the opening of Senghor University in Egypt in 1990 and the École du Patrimoine Africain in Benin in 1998, all set a course and opened up career opportunities for certain professionals already initiated in the practice of museography.

In Ivory Coast, the Centre d'Animation et de Formation à l'Action Culturelle (CAFAC) opened in 1984, specialising in museology and cultural outreach. The Centre was based at the Institut national des arts (INA) in Abidjan-Cocody. In 1992, following administrative reforms, CAFAC became the École de Formation à l'Action

Culturelle, and additional training courses were added. The museum profession therefore became more structured, gradually producing museum technicians and curators. This post-baccalaureate, accessible through professional competitive examinations, produces the best practitioners working in Ivorian heritage institutions. Progressively, the field of research became more prominent with the existence of the Institut d'Histoire d'Art et d'Archéologie (IHAA) and the creation of a Unité de Formation et de Recherche en Information, Communication et Arts (UFRICA) in 1994 attached to the University of Abidjan. In 1992, the Centre de Recherche sur les Arts et la Culture (CRAC), which was to be a real centre for cultural research, came into being. Then, with the introduction of the Undergraduate, Master's and PhD system, ties were established with doctoral schools and other universities. At the same time, the syllabus was updated, giving a high proportion to courses related to other disciplines such as tourism and crafts. Subjects for Master's theses and Doctoral dissertations are discussed before being approved by a college of teachers. These commitments to training and research demonstrate the awareness of the problems associated with several social challenges. However, cumbersome administrative procedures hamper the achievement of objectives in these public research organisations. Taking into account the responsibility of museum institutions in the face of sustainability issues in Ivory Coast, a nation that has already hosted COP 15, our National Committee has initiated reflections on the creation of a study facility focused on sustainability.

ICOM Ivory Coast Initiative

Sustainable development initiatives, projects and programmes have been in vogue for the past thirty years. A large number of projects have been carried out as part of this sustainability movement. However, one main aspect of this work deserves to be taken into account given the issues at stake, the current situation and the future of our planet and our heritage. The following paragraph gives the rationale behind the creation of a tool that we call the “Museum Sustainability Study and Exhibition Facility”, or Museums DEED (*Dispositif d'Etudes et d'Exposition sur la Durabilité pour les musées*).

Let us not forget that, in Ivory Coast, traditional research and training institutions remain out of touch with the challenges of sustainability. The professionalism reflected in museum deontology (ICOM, 2017)

about scientific responsibility is slow to emerge in sub-Saharan Africa. Yet, the promotion of museum studies, training and research on sustainable development remains fundamental for all generations in their strategies supporting growth and resilience.

Museums DEED will therefore stand out in the world of training research as an innovative and interactive initiative for museum studies and presentations. The introduction of such a service is justified by its contribution to accessible content and knowledge, which is a practical version of the compendium of actions of possible futures (Harrison, 2021). In short, the reflection on the environmental and societal responsibilities of museums highlighted by ICOM France and its partners brings the notion of sustainability back to life in the museum and heritage ecosystem. By opening a door to research and training, the options remain highly beneficial. The proposal to create Museums DEED within a framework of international cooperation will contribute to professional, multi-disciplinary and scientific added value in meeting the challenges of sustainability.

Rita Capurro: This presentation introduces us to the theme of contemporaneity, where the development of a new training programme is interconnected with research and sustainability, which is central and relevant for all professional sectors, and not only for museums.

Hélène Vassal: There is no doubt that heritage conservation is currently experiencing a major shift, designed to reconcile professional practices with the challenges of sustainable development and eco-responsibility while meeting the requirements of museum objects. The ecological transition is generating new values, new uses, new professions and new forms of management and skills in cultural engineering. It calls into question traditional forms of work, generates the development of new measurement tools and encourages discussion on subjects such as international loan conditions and conservation standards. Against this backdrop, training for professionals, as well as for elected representatives and museum staff, has become essential. Training is the key to the success of an in-depth transformation of the cultural sector. I would like to quote a recent French study conducted under the aegis of HESAM University, based on extensive feedback from professionals. It shows that training in

this field is still underdeveloped and remains at the stage of raising awareness among professionals. We also need more training on the sites themselves, to give a voice to professionals in the field and to encourage co-design methods. We also need to identify new training needs and expectations. We should also encourage self-training and forms of mentoring while training entire teams in our institutions. Museum leaders also need to be involved, while encouraging forms of specialisation, particularly in the fields of exhibition management and museum technical management. Finally, new jobs are emerging as a result of this paradigm shift.

Our next speaker is Manuela Duarte. She is a researcher at the University of Liège (Belgium), a tenured professor in the Social Anthropology Postgraduate programme at the Federal University of Goiás (Brazil) and visiting professor for the PhD in Sociomuseology at Universidade Lusófona in Lisbon. She is a member of the Board of Directors of ICOFOM LAC, ICOM's Museology Committee for Latin America and the Caribbean, and a member of the organising committee for the Conference of the International Movement for a New Museology, MINOM, in Catania in 2024. We would like you to remind us of the extent to which these research and training issues involve cross-disciplinary approaches, which might even be described as eco-systemic.

Manuelina Duarte: While preparing this speech, I remembered a dialogue on social media:

- What is development?
- To be developed is to (be able to) assign to others the place of the underdeveloped.

After stages of hegemony and then criticism of the Western, capitalist, ethnocentric and modern concept of development, other notions have emerged, such as local development and sustainable development. The latter is generally associated with economic and environmental pillars, but I would like to focus on the social and cultural pillars established by Ibermuseos, an organisation that promotes Ibero-American museum heritage.

The social pillar of sustainable development involves the fighting against major social inequalities, and therefore promoting museums as vectors of social inclusion. As far as the cultural pillar is concerned,

museums are committed to promoting cultural diversity and the local population as a link between past, present and future.

Sustainability implies cross-disciplinary, ecosystemic approaches and less rigid classifications. Research and education are inextricably linked: we learn through research, and at the same time, research is all the more justified when its results are incorporated into education. At the same time, linking training and research to the practical work of museums (Duarte Cândido, 2003) is essential if we are to understand museology as an applied social science, which is commonplace in Latin America, particularly where it is most influenced by Waldisa Russio school of thought.

Sustainability has been the concern of recent resolutions in the field of museums:

- 1- The approval of the recommendation on the protection and promotion of museums and collections, their diversity, and their role in society in 2015. It recognises the role of museums in learning, social cohesion and sustainable development, and their contribution to the quality of life of the communities and regions in which they are located.
- 2- The adoption of 2 resolutions on that matter at the ICOM General Conference in Kyoto 2019:
 - Resolution N°. 1 “Sustainability and the Implementation of the 2030 Agenda”; and
 - Resolution N°. 5 “Museums, Communities and Sustainability”.

The latter, as states the book *Eco-museums and Climate Change*, by Borrelli, Davis and Dal Santo (2023), calls for “greater recognition and support for community museums and eco-museums” and their contribution “to safeguarding, understanding and promoting access to natural, cultural and intangible heritage”. All this culminates in ICOM’s approval this year of the creation of an International Committee for Social Museology (SOMUS).

Current events call for museums to adopt a different approach, one that is more in line with the challenges of climate change and society as a whole; institutions that are brave enough to challenge their desire for endless expansion, accumulation, voracity and predatory practices. These questions are not new to the museum

field. Let us recall a text by Hugues de Varine and Graça Filipe (2012) proposing a moratorium on the creation of museums and Morgan and Macdonald's article (2021) on the degrowth of collections. However, they are not deeply incorporated into the training of new professionals, even though they are more aware of global challenges than we are. We are still trying to train people to prevent the reproduction of the mistakes of past generations.

Social museology recognises the power of museums and the need for people and social movements to incorporate them in participatory and counter-hegemonic processes. It pays particular attention to "local" museums, even though in Latin America it is capable of gradually influencing and transforming so-called traditional museums and national museums. Given that we are thinking of training and research beyond the academic framework, I have chosen to talk about the Ecomuseu Natural do Mangue (Natural Ecomuseum of the Mangrove) - Fortaleza, Brazil.

It was created in 2001 by a small group of volunteers, including environmental activists and educationalists, and is now particularly active in the fields of SDG 4 (education for all and for all ages) and SDG 13 (action against global climate change). It has already welcomed more than 1,600 school groups, with whom it carries out environmental awareness-raising activities along itineraries that make use of around ten "stations" identified in the mangrove swamp. At the end of the visit, students plant seedlings of native plants, helping to replant the mangrove, which is being impacted by various factors, such as pressure from property development.

Over time, the museum obtained a lorry for touring activities and rebuilt a small area that is now called the collection room. Yet, they intuitively work with the concept of "operational collection", developed by Mathilde Bellaigue, former documentalist at the Creusot Ecomuseum. This concept encompasses the whole heritage of this region as an educational resource for the museum and as the focus of its preservation work.

It should be noted that, although continuing education or partnerships with schools is at the heart of their educational work, the ecomuseum reports it has already received 52 students from various university fields for compulsory work placements, which attests to its involvement in higher education.

I would like to highlight the following challenges common to both research and training:

- Constant updating;
- Overcoming barriers between disciplines and experimenting with ecosystem approaches, which is not unfamiliar to museum sectors, particularly those influenced by eco-museology and by the concept of the integrated museum that emerged from the Santiago Round Table; and
- Daring to open up to new epistemologies, in other words, the recognition of other relationships with reality, other ways of experiencing the world.

From the point of view of indigenous cosmologies and epistemologies, the concept of sustainable development is not only contradictory, or at least surrounded by opposing rationales, but is also anthropocentric as it focuses solely on human beings.

The Latin-American indigenous view rejects the ontological distinction between nature and culture, between humans and non-humans and understands the existence of a community of life in which the various organisms demand sustainability, without this being subject to human needs through development. In that sense, it is essential to learn from the cultures of *Abya Yala*, the native name of what is known in the Western world as the Americas, about the notion of “*buen vivir*” (meaning “living well” or “life in harmony”), an alternative to development defined by Alberto Espinosa (2014) in his book *Le Buen Vivir: To Imagine Other Worlds* as “the foundations of a harmonious relationship between man and nature, breaking with the degradation caused by the economic model based on consumption and growth.”

Since 1993, the Universidade Lusófona in Portugal has been developing a unique university training programme at Master’s and PhD levels. Stemming from close collaboration between professionals from Portugal and Brazil based on New Museology and field experiments on both sides of the Atlantic, it now claims to be a school of thought: Sociomuseology.

Its diverse theoretical influences combine Georges-Henri-Rivière, John Kinard, Paulo Freire, Hugues de Varine, Pierre Mayrand and contemporary decolonial thought. Dissertations and theses on the

subject, notably in Portuguese but also in English and French, contribute qualitatively and quantitatively to adding a new critical mass in the museum field, with more than 60 theses, the vast majority by field actors who later left in search of reflection on their practice. Since 2018, the Department of Museology has also included the UNESCO Chair in Education, Citizenship and Cultural Diversity. This very active Chair contributes in particular to the democratisation of access to knowledge through content available online in webinar formats and publications such as *Cadernos de Sociomuseologia*. Those working in the museum sector outside the academic world will find it a rich resource for self-training.

To conclude, I invite you to continue the dialogue and get to know the real players in the field at the Conference of the International Movement for a New Museology, in Catania, Italy, in February 2024.

Hélène Vassal: Thank you for your presentation, which raises the question of the museum from the different perspectives and objectives of sustainable development, such as diversity and the citizen museum. What are citizen museums? Can there be one or more forms of eco-citizen mediation?

There is also the issue of sustainable action in territories, on territories and with communities. This is the theme I would like to address with Blaise Kilian, Co-director of the National Bank of Cambodia's Museum of Economy and Currency (SOSORO Museum), who will tell us about the initiatives taken in Cambodia. Blaise Kilian has previously worked for various public and private institutions in the fields of education (Royal University of Law and Economics), heritage management (UNESCO Office in Phnom Penh), and public-private dialogue, notably in his capacity as former Executive Director of the European Chamber of Commerce. He has served on the boards of several organisations, including ICOM Cambodia, ICOMON, and Krousar Thmey (an organisation that provides education for deaf and blind Cambodian children). He graduated from the Institut d'études politiques de Paris and also holds a Postgraduate degree in Applied Economics, a university diploma in Khmer Applied Economics, and a university diploma in Khmer Language and Civilisation. He is fluent in French, English, and Khmer and holds both Cambodian and French citizenship.

Blaise Kilian: My presentation will discuss how the concept of museums’ role and related skills has changed and continues to change in Cambodia. As an introduction, I would like to recall the definition of museum established by ICOM in 2022, which helps to illustrate the limits of the Cambodian museum sector and the efforts being made to meet this definition better and to enable Cambodian museums to play their role in society. “A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing.”

Current Situation

In Cambodia, we have two tropisms that have influenced the design of museums and related training. One is the Angkorian tropism related to the discovery of the temples of Angkor, the creation of the *École française d’extrême Orient* and the creation of the first museums. The other is the post-conflict tropism of the Khmer Rouge, characterised by a reflection on how to document and try to explain the unexplainable.

For a very long time in Cambodia, the vast majority of museums focused on pre-Angkorian, Angkorian, and post-Angkorian archaeology, essentially on Angkorian statues and buildings; then, there were a few museums documenting the Khmer Rouge tragedy.

The Cambodian museum model remained that of an archaeological museum. The skills found among museum professionals are essentially related to archaeology, building conservation and collections management. There is also a complete lack of training in museology in Cambodia. We have a Royal University of Fine Arts that does a very good job, but its training focuses mainly on archaeology, conservation and anthropology. However, there is only one module on museology within a broader training programme and not a degree entirely dedicated to the discipline.

The National Museum of Cambodia is our first museum, which is already over a hundred years old. In this museum, you can see classic

exhibits consisting mainly of statues. We have many museums in the provinces, but they are considered to be archaeological repositories. Cambodia is certainly an immense archaeological empire, but the museums are perhaps a little too limited to that. As a result, there is a great limit to interpretation, with limited knowledge apart from that related to places and dates.

There is also the Genocide Museum in Phnom Pen, which documents the Khmer Rouge genocide and the notorious S21 prison. Once again, you can see there a presentation of numerous archival elements but limited interpretation and narration.

Needs

It should be borne in mind that for many years, the need was to re-build the skills that had been annihilated during the conflict. During their regime, besides all the horrors they committed, the Khmer Rouge essentially destroyed all skills. The goal after the conflict was to rebuild skills, with the few survivors who had not been massacred, and especially skills in archaeology and conservation.

It is only recently that we have begun to try and teach new skills (communication, storytelling, contextualisation, etc.) and to master new tools, particularly digital tools for communicating and managing collections. It should be pointed out that 50% of the Cambodian population is under the age of 25, so for a museum to be able to communicate and play its role in society, it needs to be able to reach out to this population and that requires communication skills that someone trained in archaeology or heritage conservation does not necessarily have intuitively. At the end of the day, it is about changing the perception of museums, including by those responsible for managing these museums, to adopt a concept that is more closely linked to the public and not just conservation.

Museum Experiences

The Textile Museum is the first non-archaeological initiative (2010). The collections were acquired from and documented hand in hand with the local communities.

I also coordinated the creation of the Ratanakiri Cultural Centre, an ethnographic and community experiment launched in 2012 with technical and financial support from UNESCO. Ratanakiri is the

province furthest from Phnom Penh and home to some 13 ethnic minority communities. The museum was designed as a cultural centre where the aim was to exhibit the handicrafts of the indigenous populations, showcase their way of life and create ties with the local communities so that the indigenous groups could come and organise cultural events there, provided that the local authorities and the local communities could communicate with each other. The idea was to come up with a new museum concept, both in terms of its management and, in particular, in involving the communities and in encouraging the local communities to come to the centre.

Another particularly interesting initiative, inaugurated in 2018, is the Preah Vihear Temple Museum, dedicated not only to the World Heritage Site but also to its territory: history, geography, flora and fauna, local people and customs. This is the first time that a museum has showcased collections in all these areas and in collaboration with the communities. The objects were collected from the communities and their use was documented.

Finally, the SOSORO Museum of Economy and Currency is a laboratory for a modern and interactive museum with projections into the provinces (2019). It tells the story of Cambodia, which is both innovative and risky, as telling a story involves a choice of perspective. The museum offers real interaction with the public, with interactive screens and explanatory elements. It is also a museum with the capacity to project itself into the provinces. Cambodia has two currencies: the dollar and the national riel. The national bank organises visits to the provinces on a regular basis to promote the national currency. The exhibition is taken on tour visually and brought into the communities in different provinces so that people can learn about the local currency and its history. Once again, this is a new concept that would not necessarily have been possible a few years ago. It should also be noted that this museum is entirely financed by the Cambodian government and brings together local and international expertise.

Actions Implemented

We are working on training courses with the support of UNESCO. In addition, thanks to ICOM Cambodia and the Ministry of Culture and Fine Arts, skills and ideas about the role of museums can be transferred from one museum to another. The museum is also a

reservoir of knowledge that needs to be shared with communities and has a role to play in educating the public.

Training courses have been set up, during which museum professionals come and listen to their colleagues share their experience. Topics covered include conservation, collections management, exhibitions and new skills.

To give you just one example, a young man who trained in England and has set up his art gallery came to talk to the Apsara Authority staff responsible for preserving the Angkor site.

In this way, by rebuilding and developing its museum skills, Cambodia is gradually enabling its museums to play their full role in the service of society and not simply in the service of preserving static heritage.

Hélène Vassal: Rethinking training in relation to sustainable development encourages us to rethink museums, their positioning and their local deployment. So, if you had one action to implement tomorrow to change museology training in your respective institutions, what would you start with?

Blaise Kilian: Undoubtedly research and the ability of universities to produce articles without having to rely too heavily on outside expertise. There is still a lot of progress to be made.

Ernst Kpan: We already have training courses in museology, but I think we need to develop them further with modules on sustainable development that directly relate to museums.

Manuelina Duarte: I would start with interdisciplinarity. I believe that, if we want to understand our cultural and natural environment, we need all disciplines to work together.

Hélène Vassal: That goes back to the circular approach advocated by Michela.

Michela Rota: I agree with Manuelina. I think that it depends on where you have to start with training sessions. I think that participation with museum professionals is really important. So, I think that these training sessions followed by focus groups could be beneficial for museums.

Session 5

**Digital Technology
and Sustainable Development**

Wednesday 18 October 2023

Speakers:

Emmanuel Château-Dutier, Professor of Digital Museology at the University of Montréal

Johanna Eiramo, Director of the Digital National Gallery programme, Finnish National Gallery

Mohamed Ismail, Professor of Archaeological and Heritage Information Systems, Faculty of Archaeology, Ain Shams University

Amarilis Lage, Exhibitions and Content Coordinator, Museum of Tomorrow, Rio de Janeiro

Sophie Biecheler, Director of Institutional and International Relations at Universcience, and **Olivier Bielecki**, Director of IT at Universcience

Session moderated by Ech Cherki Dahmali, ICOM Arab president.



Émilie Girard: This session focuses on digital technology and sustainable development. The session is coordinated by ICOM Arab and moderated by its president Ech Cherki Dahmali.

Ech Cherki Dhamali: This session is about “Digital Technology and Sustainable Development”, especially in the museum field. Today we have five speakers: Emmanuel Château-Dutier, Professor of Digital Museology at the University of Montréal; Johanna Eiramo, Director of the Digital National Gallery programme at the Finnish National Gallery; Mohamed Ismail, Lecturer of Archaeological and Heritage Information Systems, Faculty of Archaeology, Ain Shams University; Amarilis Lage, Exhibitions and Content Coordinator, Museum of Tomorrow, Rio de Janeiro, as well as Sophie Biecheler, Director of Institutional and International Relations at Universcience and Olivier Bielecki, Director of IT at Universcience.

The first speaker is Emmanuel Château-Dutier, an architectural historian and professor of digital museology at the University of Montréal. His work also focuses on museology and the history of digital art. He has been involved in several major collective art history research projects. For instance, he was Responsible Digital Editor of the critical edition of *Cours d'Antoine Desgodets*¹, and is one of the main contributors to the *Guides de Paris*² project of *Labex les Passés dans le présent*.

Today he will be presenting digital technology, the dissemination of ecology, as well as potential approaches to equity and sobriety.

Emmanuel Château-Dutier: As a professor of digital museology, I am delighted to talk about this topic today. For several years now, various authors have been warning about the increasingly significant environmental impact of digital technology. The digital sector accounts for between 2.1% and 3.9% of global greenhouse gas emissions, equivalent to air traffic. Emissions have been rising by 6% a year, though the Paris Agreement called for a 7% reduction. Even if, since 2018, the Shift Project in France has largely shown that these emissions are mainly linked to the manufacture and replacement of hardware, a large part of the environmental challenges of digital technology is not just linked to its use, but to a large extent to the volume of hardware produced.

Given the current climate crisis, we can no longer ignore the environmental consequences of our digital activities. Far from the immaterial image traditionally associated with them, these activities are directly linked to physical devices. Their technical realities also come with significant impacts when it comes to adopting an environmentally responsible approach.

Some new technologies, such as 5G and blockchain, raise very direct questions about energy consumption and their application in the cultural field. But beyond these energy-intensive approaches, the digital domain in museums is heavily marked by the regular emergence of new technologies and rapid technical obsolescence.

⁽¹⁾ <http://www.desgodets.net>

⁽²⁾ <https://www.guidesdeparis.fr>

From a more global perspective, fundamental questions can be raised about equity in terms of access to technologies across museum institutions, depending on their size or geographical location. In reality, we realise that it is a whole ecosystem of performance and technological innovation that needs to be dismantled today. As Bruno Latour put it during the Covid epidemic: “It is perhaps time to take stock of what we are attached to and what we are ready to free ourselves from.” It is a question, then, of considering landing strategies and closing trajectories.

So, as several colleagues in the Origen Lab group have suggested, should we abandon the already obsolete future? We would therefore have no choice but to urgently learn how to restore, close and reallocate this heritage, without doing away with the issues of justice and democracy? This is a relatively radical endeavour. In their view, the current digital situation is no longer viable, and we need to think of it as a “negative common”. The question is whether this strategy applies to the digital activities of museums.

The issue of digital technology in heritage institutions has for a long time been inextricably linked to the notions of sustainability and preservation. The large-scale expenditure on digitising collections over the past few years has been driven by a great sense of responsibility. Heritage is no longer simply digitised but has become digital, as UNESCO reminded us back in 2003. The long-term preservation of digital information is problematic. A recent Ithaca report reminded us that the term “preservation” has largely been devalued. Ensuring long-term preservation thus requires an active attitude and an iterative approach. This is achieved through data stewardship and care.

Heritage institutions are significantly underinvesting in digital preservation. The same applies to digitised collections, not to mention mediation tools, which often appear in the form of disposable products. This can sometimes cause us to wonder whether these products respond more to trends than to uses, or whether they could have been designed more strategically to be more sustainable. I am thinking here of a statement made by the director of the National Gallery of Denmark, who in 2018 mentioned the need to look at more flexible solutions and opportunities to reuse content to avoid wasting energy or continuous website development. His idea was to focus on a certain number of commitments and produce a good website rather than multiplying initiatives.

Two issues stand out here: digital maintenance and technological debt. The choice of some technologies is associated with technical and environmental costs. Reducing energy use and technological waste, combined with reducing the environmental debt, is a real challenge for museums. The *Manual of Digital Museum Planning*, published in 2017, dedicates a chapter to this subject.

So, do we have to dismantle digital technologies? Many museums have already identified the maintenance and replacement of IT equipment as a possible way of reducing their environmental footprint. But does this mean we should be moving towards dismantling our online presence? There is probably no clear-cut answer. The widespread closure of museums before Covid demonstrated the central role played by their websites in maintaining their operations. Several internationally-renowned museums, such as the Rijksmuseum, are now fully embracing virtual visits as a substitute available for a global audience that might not travel. The health crisis revealed the vital importance of digital technology for institutions when many were forced to close, as well as the transformation that has occurred throughout the cultural field in recent years.

However, because of their size and structure, not all heritage institutions have the same capacity to adopt advanced technologies and costly devices. But in a context dominated by digital technologies that appear crucial to the existence of institutions, how can we overcome this digital gap and think about the use of these technologies for small museums and cultural institutions?

This also leads us to think about greater digital sobriety. Two concepts are worth mentioning here: “minimal computing” and “low tech”, both of which can inspire new approaches to digital technology in the museum sector.

Introduced by Alex Gil of Columbia University in 2015, minimal computing suggests using only what is needed to produce a given project. Following the concept of “necessity architecture” proposed by Ernesto Rosa, it involves considering computing in a limited context in terms of hardware, software, educational, network and energy resources. This is an interesting approach, as it encourages a critical, partly environmentalist approach, involving a balance between the costs and benefits of using a given technology, as well as a reflection on social justice and the issues of reuse and maintenance.

Several ideas arise from the principle of “minimal computing”, such as “minimal design”, “minimal maintenance”, “minimal obsolescence” and the idea of maximum justice. The latter refers to reducing the barriers to entry, access, participation and self-representation in computing, to build systems that are the premises of social justice. The aim here is to replace the ease offered by Big Tech with a collaborative approach to developing software that can be easily appropriated and reproduced. It also contrasts a low-tech strategy with high-tech and the increasing complexity of technologies. This approach highlights the need to invest in technologies that can be easily harnessed, and which aim to empower the relevant stakeholders. Low-tech technologies are useful, sustainable and accessible. Others also highlight the benefits for sobriety.

I therefore believe that it is time for museums to consider a new model, rather than simply dismantling the choice of simple technical solutions. This change implies thinking about development differently, by potentially pooling resources between institutions to create a healthier and mutualistic ecosystem based on open and controllable technologies. The double advantage of this transformation is that it not only addresses the objectives of emancipation and reappropriation but also enables the use of free and open-source software in line with today’s environmental challenges.

Ech Cherki Dahmali: Thank you for your presentation. I loved the idea of combining digital tools and the ethical and social issues in museums.

Our next speaker is Amarilis Lage. She is a journalist, specialist in creative writing, with a Master’s degree in Linguistics, and also a PhD candidate in the same field. She is the Exhibitions and Content Coordinator at Museum of Tomorrow and was a finalist for the 60th Jabuti Award, the most traditional and prestigious literary prize in Brazil, with the book *Manual de Inovações – Criações à Brasileira*, which was based on one of the museum’s exhibitions.

Amarilis Lage: I am the exhibition and content creator for the Museum of Tomorrow in Brazil. It is a quite new museum, which opened in 2015. The museum is now one of the most visited museums in Brazil. We are expecting 6 million visitors in the coming months. In addition, 30% of our visitors are not regular museum visitors, and 22% of them have never visited a museum before. It is important to

keep these figures in mind. We live in a society where many people do not have access to museums.

Here, I will be focusing on the Anthropocene, which is the main subject of the exhibition. We are thrilled to have the opportunity to reach such a large audience. It allows us to raise awareness about the Anthropocene and climate change with an extremely broad audience.

Besides talking about climate change and all its impacts, we also have temporary exhibitions. I would like to talk to you about “Fruturos”, a neologism mixing “fruit” and “future”. It was a huge success and 90% of visitors stated that they learned something new about the Amazon region after visiting the exhibition. It should be pointed out that many people in Brazil have never been to the Amazon and most of the information they know about the region comes from the news.

Once the exhibition was finished, we asked ourselves: “What now?”, because it is so important for us to discuss society, and it is essential to show the consequences of deforestation of the Amazon forest, not only for the country but also globally. We felt like it was our responsibility to make sure that many people have access to this kind of information and debates.

So, once the exhibition was over, we created a special website for it, to keep this debate alive. I do not know if you are aware of this, but right now we are facing a historic drought in the Amazon where one of the biggest rivers is at its lowest level ever. Therefore, we feel that, as an institution, we have to make sure we are making all the efforts to share this information.

On the website, we have a virtual tour where visitors can learn about Amazon biodiversity, bio-economy and the future prospects for people living in the Amazon region. We also created extra content for the website. We added some videos of interviews, infographics, and materials for students. We did this because we think it is very important to bring these subjects to new generations and, for many students in public schools in Brazil, it is hard to gain access to the Internet and to this kind of information. However, trying to reduce the social gap related to access to information, leads to another social gap: the differences in access to the Internet. We therefore created this project so that teachers can print the materials. By doing so, information about the Amazon’s

biodiversity, and cultural aspects such as music, literature or things we do not necessarily think about when we talk about Amazon, are easily accessible. To give you an idea, so far, we have had 30,000 visitors to the website.

Ech Cherki Dahmali: Thank you for your presentation. I hope that the virtual version of your exhibition was a democratic way to reach many visitors. I think it would be interesting to have statistics about the number and type of people visiting this virtual exhibition and what was the actual impact of this version on your museum.

The third speaker is Mohamed Ismail. He has a PhD in Heritage and Museum Studies, with a thesis entitled “Virtual Egypt, Re-exhibiting Egyptian Heritage”. He also has a Master’s degree in Cultural Heritage Management from universit  Paris 1 Panth on Sorbonne with a thesis entitled “The Use of Augmented Reality in Egyptian Museums”. He has also 24 years of experience working in the field of digital technology in cultural heritage and museums, and is currently a lecturer at the Faculty of Archaeology - Ain Shams University in the Department of Museum Studies, a board member of the Egyptian National Committee of ICOM, and a board member of AVICOM. He has developed various applications and digital exhibitions for many cultural institutions in Egypt, such as Tutankhamen’s exhibition in the Egyptian Museum, “The Temple of Dendera”, which obtained the Fiamp (ICOM-AVICOM) Award in August 2010 (Educational film category), and “Heritage Fragments Holographic Display System” at The Museum of Islamic Art in Cairo, which obtained the gold prize from ICOM-AVICOM in 2019.

He will talk to us about digital uses in Egypt archaeology museums and the use of augmented reality through the example of the Children’s Museum.

Mohamed Ismail: I would like to share with you some digital solutions I have implemented in Egyptian museums. In 2000, Egypt established the Centre for Documentation of Cultural and Natural Heritage, confirming its role in digital heritage. Since then, many solutions have been created in Egyptian museums to disseminate heritage knowledge. These solutions include multimedia applications, websites, virtual reality and augmented reality.

One of these solutions is Culturama or Cultural Panorama. It is a patented interactive panoramic display system that has been installed in some cultural institutions and museums in Egypt, such as the National Military Museum.

Another example is a hologram of the Tutankhamun mask that was displayed at the Egyptian Museum in Cairo when the original mask was in the restoration lab. Likewise, a holographic display was produced at the Museum of Islamic Art to present two artefacts that no longer exist in the display. The system was awarded the gold prize from the AVICOM committee as the best creative exhibition in 2019.

Another solution was created for the tomb of Tutu and his wife. This tomb was discovered in Shag and was transported to museums in Cairo. I should point out the fact that visitors do not have access to the tomb for preservation purposes. That is the reason why we created an online application using virtual reality headsets to allow visitors to see inside.

A number of examples of the use of augmented reality in Egyptian museums are in the dinosaur exhibition. It was held at the Children's Museum, and several applications were developed to introduce museum visitors to the world of dinosaurs attractively and enjoyably. The exhibition featured a variety of techniques including 360-degree videos, two films and 3D printing of a holographic display for the dinosaur. Visitors could use the headset to watch dinosaurs moving around in the museum garden.

Another example is the Digital Heritage Hall in the Zaafarana Museum. The museum is located on the main campus of the University of Cairo, within the Zaafarana Palace, one of Egypt's modern historical buildings. The museum was inaugurated in May 2023. It is an educational museum that mainly targets university student researchers and scholars in the field of museums and heritage. It is also open to the public as a virtual museum.

A heritage exhibition has been created within the museum. The concept of this virtual museum is to showcase Egyptian heritage topics by utilising various technologies and systems. These systems function as permanent infrastructures which museum staff can update and edit in order to change the content or topic of the exhibition. In addition, the hall offers a variety of experiences including an

interactive printed map with NFC markers or pins on the locations of the world heritage sites in Egypt. Visitors can also visit the sites virtually by using NFC capability on their smartphones by swiping the smartphone close to the NFC pins or chips.

The second experience is a tablet with two augmented reality applications. Visitors can use the first application to read papyrus from ancient Egypt. The second app is dedicated to an audio explanation of certain entries.

We have now two applications. The first one is a virtual tour of Tutankhamen tomb and the other one, developed by our students, is a virtual tour of Nefertiti tomb. Visitors can also explore multimedia content through two interactive kiosk stations, which give access to additional information about the collections or related topics.

The floor has also been used to exhibit floor plans for some archaeological sites. It gives users the option to use their smartphone to visit the actual location by scanning the QR codes located on the floor plan. Visitors who are blind can interact with a 3D printed replica of a dedicated blind kiosk that also has a braille label as well as headphones for audio interpretation.

The last experience is an interactive hologram, displaying several Egyptian artefacts. Visitors or students can choose one of the cards, each of which represents an individual artefact, and set up a rotating table to display the artefact so they can view it.

Ech Cherki Dahmali: Thank you for your presentation. I hope you will continue with further research on the ecological impact of the use of these digital tools as well as the energy bill for museums using these technologies in Egypt.

Our next speakers are Sophie Biecheler and Olivier Bielecki.

Sophie Biecheler is a member of the Board of Directors of ICOM France and Director of Institutional and International Relations at Univescience, the state-owned institution comprising the Cité des sciences et de l'industrie and the Palais de la découverte in Paris. Sophie has over 20 years of experience in the world of culture, human and international relations working at various cultural and museum institutions. She has been a member of the ICTOP board and also participates in the work of the CIMUSET group.

Olivier Bielecki is Director of Information Systems at Universcience. He has also worked for many public cultural institutions, including the Centre Pompidou and now the Cité des sciences et de l'industrie

Sophie Biecheler: We are pleased to present to you what Universcience is doing in terms of sustainable development. Universcience consists of two physical locations in Paris: the Palais de la découverte and the Cité des sciences et de l'industrie. It also has a third digital space: leblob.fr.

To briefly introduce Universcience, we welcome 3 million visitors a year to our physical sites. We have exhibitions in the field of science (human sciences, social sciences, science and society, fundamental sciences) and mediation.

The institution is quite committed to sustainability issues. One of the pillars of the institution's work is sustainable development, which is reflected both in the programming of our exhibitions and in their eco-design. The idea is to create exhibitions that consume less CO₂, to set up and dismantle them responsibly and to recycle. We currently have an exhibition entitled "*Urgence climatique*" (Climate Emergency), which draws visitors' attention to the current situation that scientists are warning us about and above all encourages them to take part in the global project in favor of environmental transition. We also have several initiatives aimed at reducing the carbon footprint of our events when we run science festivals or fairs. We are also committed to a low-carbon responsibility label. Last but not least, we are vigilant about the mobility of our visitors.

Responsible digital technology is an important topic for us. Digital technology plays a major role at Universcience because, unlike some museums, we are not a museum with collections, but a science centre. We present many systems, many of which use digital technologies. The challenge is therefore to keep up this development, but to do so responsibly by managing carbon emissions. That is why Olivier, the institution's Director of Information Systems, is going to use some very concrete examples to illustrate some of the actions we have implemented.

Olivier Bielecki: I would like to talk to you about Universcience's Responsible Digital Label.

This label was developed by the Institut du numérique responsable, an association created in 2018 in partnership with the ADEME, the French Ministry for Ecological Transition and WWF. It is a reference framework based on four pillars that are broken down into 14 principles and 40 responsible initiatives.

The four pillars are as follows:

- Pillar 1 deals with governance strategy. The idea is to formalise management's commitment to responsible digital practices and define an action plan.
- Pillar 2 is about supporting the responsible digital strategy or getting stakeholders (suppliers/service providers, staff, visitors) on board. This involves communication, raising awareness and training our staff in responsible digital practices.
- Pillar 3 deals with the lifecycle of digital services. The idea is to adopt a responsible approach to equipment and software management. Finally,
- Pillar 4 aims to spread the responsible digital approach. We try to actively involve our stakeholders, so that they are players in the process and not just spectators.

The label is awarded based on a 3-year action plan setting out the commitments made by the institution. At Universcience, we have 41 commitments associated with indicators that enable us to monitor the implementation of our action plan. The ultimate goal is to reduce the CO₂ emissions produced by our digital activities. To check that our commitments are being met, we will have two audits: one after 18 months and another at the end of the three-year label.

It should be noted that Universcience is the first cultural institution to have received this responsible digital technology label. The label applies both to our internal activities (management of the institution) and to our cultural and scientific activities (exhibitions, mediation, conferences, etc.). Obtaining this label is the fruit of a collective effort. All departments and delegations were involved for almost a year.

I would also like to give you a very few concrete examples of responsible digital initiatives.

I will start with Pillar 3, which deals with the life cycle of digital services. One area of action aims to promote sobriety and extend the

lifespan of software equipment right from the purchasing phase. Our goal is to have 100% of our hardware purchasing procedures include social and environmental clauses by 2024. By the end of the 2nd quarter of 2023, 67% of our procedures already included such clauses.

The life cycle also includes the use and replacement of our equipment. Until now, we had a replacement policy that was almost systematically applied after 5 years of use (depreciation period). From now on, we will no longer systematically replace equipment, but will instead do so according to changes in staff activities. This enables us to extend the useful life of our equipment, which today can last up to 7 or 8 years. When we have finished using this equipment for our professional needs, i.e. when it no longer meets our technical requirements, we recycle it and offer donations to our staff so that they can continue to use the equipment for personal purposes (140 screens and 250 PCs/monitors donated in 2022). At the same time, we work with nonprofits such as Emmaüs Connect.

Our exhibitions also take into account digital needs and the availability of equipment. We try to maximise the re-use of equipment.

In addition, the applications we have developed integrate eco-design requirements right from the specifications stage. In concrete terms, the redesign of our websites, for example, must comply with a standard that applies to all public institutions: the general eco-design standard for digital services. In this way, our future websites will be designed for use with older equipment. To use Emmanuel Château's term, we are trying to take a low-tech approach and ensure that as many people as possible can use our sites, without having to buy new equipment.

Similarly, content is designed to be "digitally responsible", i.e. we analyse its relevance and size to limit traffic and the use of space.

For Pillar 2, which involves supporting a responsible digital strategy, we implement several actions.

Here, we suggest organising events to raise awareness among our stakeholders. On our intranet, we have set up a space dedicated to responsible digital practices for our staff, where we show the progress of our approach and best practice guides that can be applied in both professional and personal contexts.

Four times a year, we offer our staff the chance to clean up their storage spaces. To help them, management organises workshops

during which we present tools and how to use them. We also talk about how to better manage data (avoid duplicating data, making multiple unnecessary backups, etc.).

Finally, we have several other initiatives that would take too long to describe here. These actions are implemented to better manage the life cycle and knowledge of our equipment. We also organise repair cafés for our visitors, enabling them to repair equipment and therefore extend its useful life.

As you can see, this label is ambitious and imposes a certain number of constraints. Nevertheless, it is the price we have to pay to reduce our CO₂ emissions.

Ech Cherki Dahmali: Thank you for your presentation. It was very interesting, especially for the response to the need of reducing CO₂ emissions. Also, congratulations on your Responsible Digital Label. It was really interesting to hear that we can apply this kind of label to museums and not only to companies.

Our last speaker is Johanna Eiramo. She is the Director of the Finnish National Gallery programme. The programme looks for ways to use the 98% of our art that is not on display in national gallery museums in order to create content for art lovers. In her past career, Ms. Eiramo has worked to support and further enhance the internationalisation of Finnish companies and economic regions as a communications professional. Before her current position, Ms. Eiramo worked as the Head of Communications at the Ateneum Art Museum, which is a part of the Finnish National Gallery.

Johanna Eiramo: The Finnish National Gallery has three physical museums and a storage space for our art. We have an art collection of around 60,000 pieces of artwork and related archive materials. About 75% of our collections have been digitised. Some were digitised in the 1980s and we are continuing and trying to reach 100%. The digital programme I represent was started in June 2022 and will last until the end of 2024.

In 2019, in reaction to the stark figures of the worldwide environmental crisis, the Finnish National Gallery staff initiated a discussion about the ecological footprint of the work that we do.

The first step was to understand the scope of our CO₂ emissions. It is really difficult to calculate this, especially regarding the choice of

what to include and what to exclude from the numbers. Our calculations include the three museums and our administrative offices but it does not include our collections' storage spaces.

Museums and offices represent our biggest source of CO₂ emissions. We measured this in 2019 to the best that we could and in that year we emitted 1,471,048 kg of CO₂ equivalent. That is the reference year for the work we want to do.

Energy, specifically electricity, is our biggest source of CO₂. Therefore, by changing the source of electricity from fossil to wind energy we were able to lower our CO₂ levels by a million kg of CO₂ equivalents per year.

You can also see that employee travel accounts for around 5.5% of our emissions, artwork travel around 2% and waste disposal around 2% of our emissions.

In this perspective, the staff and management of the Finnish National Gallery have committed to making certain operational changes. We are planning to be carbon neutral by 2035. We are taking part in the Eco-Compass environmental management system to help us evaluate how we are doing.

As we move forward towards CO₂ neutrality, one of the biggest things that we have done is Green Handprint programme. We wanted to give our programme a positive impact. We wanted to have a green handprint showing that we are actively doing things. This programme is one of our three strategic goals for the entire National Gallery as part of the strategic timeline that we are following until 2027.

We are committed to reducing travel-related expenses by 10% year on year. To give you a concrete example, the staff of the Finnish National Gallery is no longer allowed to fly within Finland.

In addition, each year, we also recognise and celebrate the green achievements of FNG employees. We want to celebrate even the smallest victories when it comes to environmentally-friendly practices.

Other smaller things that are included in the Green Handprint programme include:

- Favouring vegetarian and local food.
- Reducing the use of plastic and reusing materials such as bubble wrap.

- We have a green handprint sticker that we put on reused materials so people know that we are not sending B level materials but we are actually reusing everything that we can.
- Artworks are transported in cooperation with Helsinki metropolitan area museums whenever possible.
- Our curators, when possible, choose artworks for loan from nearby regions instead of far away.
- Environmental sustainability is also a criterion for products in the museum shop.

In 2020, the Green Handprint task force joined forces with our IT team to try to calculate the CO₂ emissions of our digital services. It is very difficult to try to determine the CO₂ emissions of digital products and services. Many device producers do not indicate if their devices are energy-efficient or not. To give you an idea, we established that the scope of CO₂ emissions in 2020 for all three museums plus our offices was down to 417,000 kilograms of CO₂ equivalents per year. So, as you can see, the biggest issue of digital pollution is linked to devices (computers, phones, printers, routers, headphones, etc.).

The digital part of the software as a service or cloud computing is approximately 11% of this digital footprint. With this information in mind, we launched the Digital Finnish National Gallery programme in June 2022 to discover and pilot new ways to discover and experience art that is 100% digital. One key premise is that we are looking for ways to create digital products and services that are not free of charge. They do not need to be profitable but we do need to start covering some of the costs of our digital products as well. Budgets are staying the same but costs are increasing.

The programme that I am leading right now is specifically trying to find new ways to experience art that is not on display in the museums. Our products are therefore not alternatives or additions to physical exhibitions but totally separate products and services that are designed specifically for digital users. We have launched exhibitions in virtual worlds, VR exhibitions, 360-degree exhibitions and video on demand.

Actually, our first VR presentation or exhibition about the virtual world of Hugo Simber is going to be launched next week.

Ech Cherki Dahmali: Thank you for your presentation and for presenting the measures you are taking at your institution to reduce the environmental impact of the use of digital tools.

Digital tools are very important for our museums, especially because we are going to have to know how to cater to “digital natives”, who are the future visitors of museums. Therefore, we will have to use more and more digital tools to reach this new audience.

I have a question for Mohamed Ismaïl: What kind of digital solutions do you use for the inventory of your collections in your museums?

Mohamed Ismaïl: When it comes to the database system, we use mostly Filmmakers as it is an easy tool for museum staff and it does not require any technical background.

Michel Guéraud: I was the director of the collections of the Natural History Museum in Paris. So, I am speaking about these kinds of museums and these kinds of collections. I have a question, mainly for Emmanuel. I liked what Olivier Bielecki said about what they are doing at Universcience and I think it is very important to work on maintenance.

But I have one question, for whom and for which purpose do you digitise? Of course we digitise many of our collections for research purposes; we have millions of specimens that are digitised. As they are digitised, they can be accessible to a larger community of scientists and a larger audience. Therefore, the question we asked was: Should we eliminate the place that provides access to visitors because we were digitising? We found that we kept the same space because, thanks to digitalisation, visitors could better prepare for their visit and therefore better use our digitised collections.

Moreover, data is based on the FAIR principle (Findable, Accessible, Interoperable, and Reusable), and all museums put their data and images together which creates a huge set of data. However, by putting everything together, you can use that full range of data and, of course, artificial intelligence to process some data and answer certain questions.

Regarding the public, something that can be applied to any museum is citizen science. You can ask people to help you create or even use your collections and give you information.

Overall, I do think that a cost-benefit analysis is really important and I would like to have Emmanuel's point of view on this.

Emmanuel Château-Dutier: I would not suggest we stop digitising, but rather ask ourselves: What for? Why? For whom? There are questions we can ask about certain types of use: Is it relevant to apply large-scale image mining to large collections? How can we limit the impact of training artificial intelligence models on these collections? A colleague from Pittsburgh suggested solutions, for example, to document vectors to avoid the need to keep coming back to the same images over and over again. Nevertheless, we do need to think in terms of optimisation. In this case, the example you mentioned of the availability and optimisation of the physical uses of the collection is highly relevant. Also, the idea of citizen science is important, since - as specified in the ethical texts that govern all museum activities - it is a core part of the museum's mission to make collections available and provide intellectual and physical access to them.

EchCherki Dhamali: Now I have a question for all the speakers. As I mentioned, it is really important to use digital tools in our museums, but when we push this solution to an "industrial scale", do you think that museums will stop being the traditional museums we have always known? Therefore, do you think that we are going to have more virtual visits than physical visits to our museums in the future? Do you think that these digital tools can have a negative impact on the image of a traditional museum as well as an impact on the number of "physical" visitors to our institutions?

Johanna Eiramo: I do not see this fear as becoming a reality. Our three museums are doing very well, and I think that it is quite the opposite. We [in the digital programme] do not have to adhere to anything in the physical realm. There is neither gravity nor oxygen. We do not have to think about the light that comes on the artworks and destroys it over time. So, we can actually make art live longer. I think that, thanks to the digital realm, we will be able to do new things that are not possible in the physical realm, but I do think that physical museums are still authentic. I do not think we will ever lose the need to be close to the piece of art that moves our hearts. Therefore, I do not think it is going to compete, but it is going to help accessibility for instance. For me it is going to be something more positive than negative.

Amarilis Large: I am not afraid of that either. Actually, I would like to talk about how many people in Brazil do not go to museums. Of course, this is mainly linked to the fact that museums are located in big cities, and, even though we offer some free visits, it is still very expensive for many people to go to museums. However, it is not just an economic aspect. It is also a psychological aspect. Many people in Brazil do not feel like museums are for them. So, I do believe that virtual exhibitions can show to a broader audience what we do and how exciting museums are. We have a real opportunity to tell people that usually do not cross our doorstep, what we do. But at the same time, I do believe that when we do this, we must rethink what we offer to our audience once they come here. It cannot be the same thing that they would find on a website. It needs to be a different experience in which people can interact with each other and be part of the project.

Ech Cherki Dhamali: I asked you this question because I agree with you that digital tools can help us to reach more visitors. However, there is a problem related to equal access to digital tools. Can all museums have access to these kinds of new technologies? I think that in the future, we will have a big gap between “big” and “small” museums in the use of digital tools. Also, Nadia in the chat mentions the fact that virtual visits can have a negative impact on the incomes of museums.

Mutaz Osman: I am from the United Arab Emirates (Dubai). I wanted to thank you for this great seminar.

I would have a request. We learned a lot from each other today, but I think it would be interesting to have a seminar about the challenges of these new technologies. We talked a lot about how positive this new paradigm is, but I do think we should also learn more about challenges.

Ech Cherki Damahli: To conclude, I would like to make a suggestion: ICOM France or all the committees represented in this series of online debates can make a recommendation to ICOM to create a working group that can work on:

- Guidelines for responsible use of digital tools for museums; and
- The creation of a “Digitally Responsible Museum Label” that can be given to a museum each year according to some specific criteria.

Session 6

Emergency Planning and Reconstruction

Wednesday 22 November 2023

Speakers:

Anne-Marie Afeiche, Director General of the General Council of Museums, Lebanon

Rachel Tabet, Collections Maintenance Specialist, Beirut, Lebanon

Aparna Tandon, Senior Program Manager, ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property), Italy

Kate Seymour, Head of Education, Stichting Restauratie Atelier Limburg (SRAL), Maastricht & University of Amsterdam, Netherlands

Session moderated by Kate Seymour, ICOM-CC Chair and **Sandrine Beaujard-Vallet**, ICOM France Board member.



Émilie Girard: This session is about emergency planning and reconstruction. It has been coordinated and prepared by our colleagues from ICOM-CC, and is moderated by Kate Seymour and Sandrine Beaujard-Vallet.

Sandrine Beaujard-Vallet: This session is about the challenges of post-crisis reconstruction. In addition to my position as Artworks Department's Head at the Centre Pompidou, I am also an operational reservist in the Paris Fire Brigade, with the rank of Captain, and assigned to the Heritage Preservation Section. So I am in close contact with these men and women whose daily life is governed by the motto "save or perish". This means saving human lives, of course, but also our heritage, as shown by the action of this elite unit during the fire at Notre Dame de Paris.

There are many threats to cultural heritage linked to armed conflict and natural disasters. As we are sadly reminded by current events,

natural disasters (storms, floods, fires, etc.) and numerous armed conflicts have led and continue to lead heritage conservation and emergency professionals to question the ways in which risks can be assessed and anticipated and operational chains set up.

France is one of the most active nations in safeguarding world heritage, and it has been doing so for over a hundred years. During the First World War, military units were deployed to the north and east of France to protect heritage endangered by the conflict. This cooperation between the Ministry of Fine Arts and the Ministry of War continued to protect cultural property before the outbreak of the Second World War. Today, the French army has its own military curators trained to act in the operational field in the event of an armed conflict. There are also soldiers from the Paris Fire Brigade and civilian firefighters from the Departmental Fire and Rescue Service who respond to disasters (both natural and man-made) within France and abroad.

There are also associations such as the *Bouclier Bleu français*. This organisation works to develop a culture of risk in the public and private heritage sectors and to promote the integration and knowledge of heritage in the field of risk.

I would also mention the Foundation of the International Alliance for Heritage Protection in Conflict Zones (ALIPH), which has established in March 2017, at the initiative of France and the United Arab Emirates. The purpose of this organisation, which is governed by Swiss law, is to protect cultural heritage in conflict zones, through grants. It is a multilateral organisation that funds operators capable of intervening rapidly on the ground to protect collections, built heritage, archives and intangible heritage. Operations are carried out in many countries, including Iraq, Syria, Lebanon and Armenia. ALIPH has signed memorandums of understanding with UNESCO, ICROM, ICOM, ICOMOS, the French National Heritage Institute and Expertise France.

Kate Seymour is an art historian (MA Hons, Aberdeen University 1993) who received a Master's of Arts in the Conservation of Easel Paintings from the University of Northumbria at Newcastle in 1999. She moved to The Netherlands in 1999 to work at the Stichting Restauratie Atelier Limburg (SRAL), Maastricht as a painting conservator and is currently the Head of Education at this institution. Her role entails supervising the practical and research work carried

out at SRAL by (Erasmus) interns from many different conservation training programmes, as well as teaching and lecturing internationally on a variety of subjects, both academic and practical. She teaches at the University of Amsterdam in the Master's programme for Conservation and introduces conservation science to Liberal Arts and Science Bachelor's students at Maastricht University. She travels frequently abroad to give workshops on conservation practice and theory to mid-career conservators, integrating her material knowledge and practical skills with an ability to disseminate complex decision-making processes. In the past five years, she has developed workshops with the support of the Getty Conserving Canvas Initiative to disseminate the Mist-Lining process and technique. Her interests include the structural treatment of both canvas and panel paintings, cleaning polychromed surfaces, filling and retouching systems and varnishing painted surfaces. In addition, Kate Seymour is currently serving a second term on the ICOM-CC Directory Board (2020-2023) where she holds office as Chair. She was the Directory Board - Working Group Coordinator Liaison during the 2017-2020 triennium. She held the post of ICOM-CC Coordinator for the Working Group Sculpture, Polychromy, and Architectural Decoration (2008-2014) and of Coordinator of the Education and Training in Conservation Working Group (2014-2017).

Kate Seymour: I thought that we could place this aspect of emergency planning and reconstruction, within the UN sustainable development goals. The 5 P's (People, Planet, Prosperity, Peace, Partnership) can be used to implement these 17 Sustainable Development Goals.

ICOM-CC is one of the largest ICOM international committees. We have a global membership of almost 5,000 members. The areas where we would like to increase our membership status are Africa and the Middle East. A large group of 9 very dedicated members and a group of 21 coordinators of our working groups lead ICOM-CC. Each working group covers a wide variety of topics (paintings, papers, graphics, materials, preventive conservation, etc.). ICOM-CC also likes to work both internally and with other internal ICOM partnerships to fulfil all of its missions. Some meetings, workshops and working groups are organised over a three-year programme implemented by ICOM-CC.

We also work outwards through ICOM solidarity projects. For instance, during Covid, we participated in the implementation of the

Training the Trainers programme. The programme consisted of a very short but intense 3-day facilitation skills training and then quite a long period of time where we invited 17 guest experts to come and talk about their issues. Many of our guest experts are also experts in emergency planning and implementation after disasters and war. These kinds of programmes are really essential in strengthening the partnership aspect.

We also like to focus on results and passing on conclusions. We do that through our triennial conference. Our most recent conference was held in Valencia in September 2023. We also like to showcase our work during ICOM community and ICOM general conferences. For instance, during the 2022 Prague Conference, we were able to highlight the successes of our solidarity training.

I think that ICOM-CC is one of the bodies within ICOM that is able to connect people during disasters but also train and encourage people to develop protocols and methodologies for dealing with disasters as they happen.

Our next speaker is Anne-Marie Afeiche, the Director General of the General Council of Museums, Lebanon. Throughout the past 30 years, Anne-Marie Afeiche has been involved in the field from cultural heritage management of art collections and more specifically archaeological artefacts, to directing museums. In 2018, she was appointed CEO and Director General of the General Council of Museums, a public body within the Ministry of Culture of Lebanon. She will be discussing the revitalisation, renovation and reconstruction of the national museum of Beirut, which took place between 1975 and 1990, as well as the recovery of this museum after the damage that occurred during the Civil War in Beirut.

Anne-Marie Afeiche: I would like to thank the ICOM France organisers of this series of debates, its president, Emilie Girard, the whole team and the moderator of this session Kate Seymour, Chair of ICOM CC, for their invitation. Unfortunately, we are all familiar with the topic of this session. Many museums have experienced armed conflict, looting and damage in recent decades. This provides vivid evidence of the destruction of cultural heritage, particularly archaeological heritage. However, I would like to present to you a case study from the 1990s involving the National Museum of Beirut and the emergency plan that was implemented during the civil war

that ravaged Lebanon between 1975 and the early 1990s. What measures were taken to save the collection? The actions and initiatives taken were unique as they had never been recorded before as an emergency plan. They were only identified as such at the time of reconstruction.

Secondly, I will outline the various stages that enabled the National Museum of Beirut to recover its collection from the 1990s onwards, to exhibit again and finally to reclaim this national archaeological heritage telling the ancient history of Lebanon.

Since its construction in the 1930s, the museum has been designed to house the antiquities that bear witness to the country's past. Over the years, it has been enriched by archaeological collections covering all periods from prehistory to the modern era, with collections discovered exclusively in Lebanon.

When the Lebanese civil war broke out in 1975, the museum closed. It was located right on the edge of the demarcation line dividing East and West Beirut at the time and was heavily damaged. The objects in the collection that were displayed there or placed in the reserves were saved thanks to the Director General of Antiquities, Maurice Chéhab and his wife Olga. The first operation was to move the small and easily transportable objects that were exhibited in the museum gallery displays. These were quickly removed and stored in the basement rooms, whose exits were sealed. The storage location was kept secret and all sorts of rumours led to doubts about the town or country where the archaeological objects were kept. In fact, the precious objects had been placed in wooden boxes specifically designed for this purpose and hidden in the basement of the museum.

Because of its strategic location, combatants inhabited the national museum. There was an urgent need to protect large objects that could not be moved, such as sarcophagi weighing several tonnes, large statues, etc. We also need to bear in mind that, during armed conflicts, teams are not always present, resources are not always available and, as a result, emergency plans are not always applicable. The basic materials for packaging, handling and transport may be in short supply. So, in the rush to preserve and protect at all costs, Maurice Chéhab's idea was to build cement cases around each of the major pieces in the lapidary collection. Similarly, the floor mosaics were covered with sand, nylon and concrete, based on the

available resources, existing staff and current circumstances.

The two operations, which consisted of partitioning off the store-rooms and burying large objects behind concrete walls, saved the national collection. Combatants had found a place of refuge and taken up residence in the building, although no acts of vandalism were recorded. However, some objects were destroyed, such as a 5th century mosaic. The lower left-hand section was deliberately pierced to allow a sniper to shoot targets crossing the adjacent avenue. The sniper had set up his shooting range inside the museum in complete peace of mind.

As well as preparing the emergency plan, in the end, Maurice Chéhab adopted the right measures and showed common sense by building concrete blocks despite the dangers and the military occupation of the museum. The result: the collection is intact.

How do we know this?

In the early 1990s, just after the war, a small team was formed. I must say that I was honoured and lucky enough to be part of this team (along with museum curator Suzy Hakimian), which had a huge task on its hands. Where to start? How could we determine the extent of the damage? What did we know about the collection which was still invisible to us? The collection was hidden under cinder blocks or buried in the museum's basements. Access to these areas remained sealed and, above all, there were no inventories.

By informing: an exhibition titled "*Patrimoine déraciné, sauvons-le*" (which means "Save Our Uprooted Heritage") was organised in 1993 to raise public awareness on the need to restore their museum.

By securing the building, which was the first phase of the long rehabilitation process. Doors and windows were closed to ensure safety for the following operations that began in 1995.

By documenting the intense work of the team, who had no prior inventory and was working on a new cataloguing system, and who was proceeding step by step by filming the key moments. This led to the production of a documentary entitled "*Renaissance*" (Revival) (directed by Bahije Hojeij) that has been shown to all National Museum visitors.

The restoration work was driven above all by a desire for rebuilding and reconstruction. The museum has become a symbol of peace,

national reunification and the reclaiming Lebanon's historical and archaeological heritage.

The operation to remove the mould from the objects in the lapidary collection on the ground floor was one of the highlights of the rediscovery of the collections. It was essential to take stock of the situation and to start planning future restoration, cleaning and conservation work (with restorer Isabelle Skaf). The opening of the various basement repositories led to different problems that had to be dealt with on a case-by-case basis. One of the storerooms, number 6, was the most critical in this respect, as rising water had flooded the storerooms and their contents, mainly ceramic material. Other major damage, not caused by humans, but by the poor environmental conditions experienced after more than 15 years of closure, affected the Tomb of Tyre, a hypogeum dating from the Roman period. The restoration project was carried out between 2010 and 2011.

When the building and the collections were being refurbished, the question of what should be presented to the public about these conservation operations arose.

We felt it was necessary not to remain silent, but to show and explain. Despite the fact that we had to restore, it was important to preserve the memory of the damage. Some examples of burnt objects have been kept as they were (the *Colossus*), while others have simply been filled in (the *Good Shepherd Mosaic*). A display case, the last in our chronological tour, was devoted to the destroyed objects, and of course the documentary film is a reminder of the destruction and reconstruction.

The restoration was a long process, which took place under the aegis of the Ministry of Culture in phases, depending on the technical and financial resources available, and the support and patronage of the Fondation nationale du Patrimoine, the Lebanese British Friends of the National Museum and, more recently, the Italian government. The first inauguration took place in 1997, followed by the opening of two floors in 1999. This was followed by rooms such as the Tomb of Tyre in 2011, the Hygeia Gallery, renamed the Maurice Chéhab Room in 2013, and finally the permanent exhibition rooms in the basement in 2016, 41 years after it was closed.

Alongside all the scientific and technical work involved in reconstruction, there has been a constant drive to raise public awareness

about the importance of our heritage and the need to protect it. The war had encouraged the proliferation of illegal excavations, and many objects from our heritage were found on the antiquities black market.

One of the most recent examples of restitution is a marble bull's head. Discovered at the Echmoun site in 1967, this 4th century BC sculpture was stolen in 1981. It was found 35 years later and a restitution process culminated in the repatriation of the piece in 2017.

I would like to conclude by saying that Maurice Chéhab's immense work to safeguard the collections of the National Museum of Beirut, followed by years of efforts to rebuild them, were carried out with respect for the role of the museum and its continued existence within society.

Sandrine Beaujard-Vallet: Thank you, Anne-Marie, for this presentation, which touched me deeply as I have been teaching in Lebanon, in Beirut and Byblos, for the last two years with the Institut national du patrimoine in collaboration with the Direction générale des Antiquités. This gave me the opportunity to meet the staff working on the different sites. I have also been able to talk to them, and some of them who have lived through the civil war told me about what was said during this session. These people are incredibly resilient and are determined to continue inventorying and preserving the collections, despite the difficult context and situation.

Our next speaker is Rachel Tabet. Rachel Tabet is a preventive conservation specialist from Beirut, Lebanon. She joined the Arab Image Foundation in 2015 as Senior Archivist and completed her MA in Preventive Conservation at Northumbria University via distance learning. She graduated with honours in 2019. In 2021, Rachel was awarded the Andrew W. Mellon Fellowship in the Department of Photograph Conservation at the Metropolitan Museum of Art in New York. Her 12-month research project focused on creating alternative cases for photographs using materials made in Lebanon. Rachel will first introduce us to the Arab Image Foundation. She will then tell us about the explosion in the port of Beirut and the immediate response, the reconstruction work and the lessons learned from this difficult experience.

Rachel Tabet: I am going to speak about the disaster response at the Arab Image Foundation in the wake of the devastating Beirut Port explosion back in August 2020.

The Arab Image Foundation (AIF) was established in 1997 as a non-profit organisation in Beirut, as a direct response to the lack of efforts in preserving the region's photographic heritage. For the past 26 years, the AIF has been collecting and caring for photograph collections from the Middle East, North Africa and the Arab diaspora. The AIF now has more than 300 collections which contain an estimate of 500,000 photographic objects.

On 4 August 2020, a massive explosion of 2,750 tons of ammonium nitrate decimated half the city of Beirut. The AIF premises were located about 800 meters from the port and were therefore in the direct area of impact.

On the night of the explosion, the immediate response was to ensure the safety of the team. We only had one staff member, our digital assets coordinator at the time, Mahmud Mjan, who was at the office. He was injured but thankfully was able to receive medical attention and to make a full recovery. The second immediate response was to retrieve the hard drives, which contain all the digital reproductions of the AIF collections. Our Head of Collections at the time (Clémence Cottard), and our Communication Officer (Rawad Bou Malhab) were able to get to the office and move the hard drives to a safe location. Since our museum is very close to the epicentre of the explosion, Clémence and Rawad had to transport the hard drives on foot in the middle of a complete state of panic in the streets.

The next day, when we were able to visit the premises, we found that the most damage affected the collection area but mainly in the preservation department and the cool storage room. There was also blown out windows and door frames as well as dysfunctional computers in the entire office. For the cool storage room, the drywall on the right side of the room collapsed, which made the cupboards topple on top of each other. The drop ceiling also collapsed on top of the cupboards and the shelves.

In addition, after the explosion there was neither electricity nor water for about a week in the neighbourhood. Also, because of the damage across the city, we were unable to move the collection anywhere. It was very difficult to travel by car in the blast area. Therefore,

everything had to stay where it was. It should also be pointed out that in Beirut in August, the temperature was around 35°C, with relative humidity of more than 75%.

The Digitisation Department was actually the least damaged in the collections area. The digitisation lab was the farthest from the epicentre of the explosion. That is why the damage was less significant.

After looking at the damage, we had a meeting with the team and the board of directors. Together we decided that the digitisation lab was going to be the first room we were going to stabilise in order to use it as a temporary space for the collections. We therefore removed all the debris, cleaned everything and then we sealed off the broken windows with plastic sheets and tape. Then, we gathered all the tables and the shelves that we could use from the office and we turned on the AC overnight just to stabilise the temperature a bit. After that, we retrieved the collection from storage and we were then able to start working on assessing the damage and cleaning the boxes. All of this was done about 10 days after the explosion.

In the Preservation Department, where we have collections that still await proper preservation treatment, we were only able to repair the shelves of the closet that was destroyed. So, to secure all of these boxes we just used bungee cords to secure them in place. However, because this storage situation was far from ideal, we immediately started working on a proposal to relocate to new premises and to prioritise working on these collections as soon as possible. The Digitisation Department was able to resume digitisation in November 2020 and we worked on reproducing all of the albums within the AIF collections.

To conclude, I would like to point out several lessons learned from this difficult period of time:

- Placing heavy boxes on bottom shelves and lighter boxes on top shelves;
- The importance of securing fragile items such as glass plates with bungee cords;
- Filling the gaps in each box to secure the objects in place;
- Constant updating of the emergency plan;

- Simple measures are the most effective;
- Proper coordination and communication is key in managing donations in times of crisis: and
- A dedicated team is essential. Despite the trauma of the explosion, we were still able to show up and contribute, and I would really like to thank them for all their hard work.

Kate Seymour: Thank you, Rachel, for this presentation. I think you did an amazing job, especially right after such a massive disaster. I also thank you for providing us with some crucial lessons and guidelines.

Our final speaker is Aparna Tandon, the Senior Programme Leader at ICCROM. She oversees strategic design, partnership development, resource mobilization, as well as implementation of the First Aid and Resilience for Cultural Heritage in Times of Crisis (FAR) programme. It is a flagship capacity-building initiative of ICCROM, which has an expanding alumni network spanning over 100 countries.

Aparna Tandon: We have now transitioned to an “era of global boiling” where emergencies are escalating in size, frequency, intensity and unpredictability worldwide. This presentation addressed key knowledge gaps and the collective challenges we face. It highlighted key questions such as assessing climate hotspot locations, predicting compound events and evaluating collection exposure within museums or archives.

We are seeing a concerning trend that involves multiple risk factors combining to amplify the impact of extreme weather events, such as high winds and low-pressure areas exacerbating the effects of hurricane-driven fires in places like Hawaii. These places prone to overlapping risks are known as “climate hotspots.”

In addition to climate-related risks, conflict emerges as a compounding factor. The World Bank reports that over half of those affected by natural hazards reside in regions marked by fragility or ongoing conflict. Kosovo, Bosnia and Ukraine are direct examples of this.

ICCROM’s flagship Programme on First Aid and Resilience for Cultural Heritage in Times of Crisis (FAR) trains, builds knowledge,

creates networks, increases awareness and informs policy with an overall aim to reduce conflict and disaster risk for tangible and intangible heritage and their associated communities. The programme can build peaceful and disaster-resilient communities by integrating heritage into disaster risk reduction, humanitarian aid, peace building and just climate action.

The ongoing two-year capacity-building project, Net Zero: Heritage for Climate Action, merges training with in-the-field action, leveraging traditional knowledge and climate science for culture-based climate solutions. Additionally, FAR is in the process of developing a Climate Risk Management Tool for all types of heritage. This tool is designed to identify location-specific bioclimate hazards and help heritage practitioners in assessing prospective impacts on their collections. It is also geared towards outlining practical strategies to mitigate and adapt to climate change, emphasising the use of traditional knowledge in this context. Effective risk management involves envisioning compound risk scenarios over the next few decades, which requires collaboration between local weather departments, disaster management agencies and emergency responders.

ICCROM-FAR systematically organises joint training together with civil protection services, in order to understand their language and facilitate cross-sector cooperation. As extreme risks may hinder access to heritage sites, the training engages multidisciplinary teams and involves risk modelling and 3D simulations to understand impacts at both item and collection levels.

A big policy win has been the integration of cultural heritage with humanitarian assistance in a Guidance Note on Urban Search and Rescue at Heritage Sites, which was unanimously accepted by the UN Office for Coordination of Humanitarian Affairs. This work was done together with INSARAG, UNESCO, ICOMOS-ICORP Turkey, and GEA-SAR.

The lack of consistent and adequate data on heritage loss and post-event damage poses a significant challenge, which was exemplified by the Beirut blast. To tackle this, ICCROM-FAR has developed an open-source app for post-event damage and risk assessment. This data is crucial for institutions to develop systematic damage and risk assessment plans and helps estimate costs, which will assist governments and donors in allocating funding.

Predicting the exposure of heritage by using local weather data is challenging but important work. By combining open-source data, local experiences and expertise from weather specialists, you can create heritage-specific risk maps. This is what the FAR Programme is doing in Ukraine; not only providing training for developing a national team of cultural first aiders, but also helping the country in predicting future risks and creating a strategic overview of its at-risk heritage sites.

Furthermore, conducting systematic vulnerability and capacity assessments is vital to risk management. This means understanding how systemic vulnerabilities can compound and maximise damage to cultural heritage. ICCROM-FAR has developed a participatory vulnerability and capacity assessment tool for cultural heritage, which involves institutions, local governments and communities. The tool offers its users the opportunity to build a common understanding of how the cultural and natural heritage of a place contributes to capacities for disaster risk reduction and sustainable development.

Cultural risk drivers sometimes increase or escalate tensions, which is where FAR's Peacebuilding Assessment Tool for Heritage Recovery and Rehabilitation can come in. The tool enables its users to identify the cultural drivers of a conflict that could prolong it or make the conflict reoccur due to unresolved or newer grievances, enhancing an understanding of the interplay between heritage and conflict dynamics in a given context.

Some of the key factors that can enhance the emergency preparedness of your cultural institutions or heritage sites include functional early warning systems, operational flood alerts independent of mobile networks, access to emergency funds and priority planning for multiple institutions in crises. The presentation also suggested some initial steps that institutions can take for effective risk management, such as utilising floor plans, 3D models and accurate records to mitigate risks and plan emergency responses.

Lastly, the standardised First Aid to Cultural Heritage handbook and toolkit, available in over 16 languages on the ICCROM website, offer a well-established methodology for coordinated cultural rescue and risk reduction operations.

Kate Seymour: Thank you very much for this presentation. This checklist is crucial as it gives very clear and concrete directives and

actions that can be implemented to prepare for disasters.

Emilie Girard: Katherine Stevens asked whether ICOM-CC or ICOM France had had any contact with Palestinian colleagues about taking part in this event. I can already answer that we have not had any contact with them, as they are unfortunately busy with other matters, but it would obviously be interesting to hear what they have to say about what is happening at the moment.

Kate Seymour: With ICOM-CC, we reached out to some Palestinian colleagues, but they told us that it was too soon at the moment as the conflict is still ongoing. The individuals I know there are basically staying home and are not able to go to museums very much. So, they are waiting for the conflict to end. Unfortunately, it is a terrible situation at the moment and I hope it is resolved quickly with the least damage possible.

Chadila Annabi: As part of the strategy for preventing catastrophic situations such as wars, floods and the like, cannot we also plan ahead for inventories that will subsequently help in the recovery and repair of objects? Exhaustive inventories can be a great help when it comes to rebuilding collections that have been completely destroyed or damaged. Another point is that in all these emergency or disaster situations, there is always an increase in illegal trafficking. We have to take this into account.

Aparna Tandon: I think it is very possible to prevent the destruction and we can already share inventories. However, one big problem is that we think only about one institution and a single plan. When we think about huge disasters like the one experienced in Beirut, we need a master plan as well, and all institutions need to prioritise things. Also, we need to take into account the fact that depending on the countries and types of natural disasters, they can have more consequences if combined with infrastructure failures. Therefore, it is also important to understand which location within your institution is more likely to be exposed in order to secure your collections.

Anne-Marie Afeiche: Inventories are essential for the security of our museums. Unfortunately, the inventory of our museums is not always complete, but I absolutely agree that it should be a priority.

Suzy Hakimian: When the port of Beirut exploded, many partners were involved in the field. Many museums suffered damage to their architecture and their collections. We worked with the National Blue Shield in Lebanon to create a programme aimed at integrating organisations other than heritage organisations, such as the army, the Red Cross and civil defence. We set up workshops where these people met to raise their awareness about the need for heritage preservation. Today, within the Lebanese Army, there is a team that has been trained to pack objects in the event of demolition.

Emilie Girard: We have three questions in the chat:

- What are the obstacles to the implementation of a risk policy, aside from the lack of expertise and awareness of the need to be prepared?
- Emergency plans contain sensitive information. When you use the ICCROM application, is the data stored in the application stored in a secure cloud?
- Is there an interactive map of the world's cultural heritage at risk (sites exposed to war, floods, earthquakes, etc.)?

Aparna Tandon: For the ICCROM app, it is an open-source app so you can deploy it and connect it to your own server. Right now, we only hold sensitive data that some countries such as Ukraine have been willing to give us. The government will own these data. As ICCROM is an intergovernmental organisation, we came up with this idea in order to make sure that each member state is independent and doing their own work.

Regarding illegal trafficking, I think it is very important to plan for secondary hazards and risks, because in these kinds of situations, many volunteers come to help and lots of things can get lost. As I mentioned in my presentation, it is essential to establish and follow a clear risk assessment plan.

Kate Seymour: I would like to thank our speakers. I really like the interconnection between these three experiences. This session helps us to give concrete short-term and long-term responses and actions to overcome emergencies.

Emilie Girard: I would like to end this session by reminding you that our series of debates is entitled “Museums Facing their Social and Environmental Responsibilities: Towards an Ethical and Sustainable Model”. I think that the notion of responsibility has really resonated throughout these six sessions. We have many responsibilities as museum professionals and perhaps particularly so today. When it comes to sustainable development, which has been our guiding theme this year, we can see that there are many issues at stake that affect all our professions and areas of expertise. The examples and reflections presented during this series show that we, as museum professionals, are taking these issues in stride and we should be very pleased about that.

Acknowledgments



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ICOM France particularly thanks:

Members of committee partners who helped us set up the forum’s sessions: Anne-Marie Afeiche (ICOM Lebanon), Sandrine Beaujard-Vallet (ICOM France), Rita Capurro (ICTOP), Ridney Chaisson (ICOM Canada), Ech Cherki Dahmali (ICOM ARAB), Edgar González (ICOM LAC), Suzy Hakimian (ICOM Lebanon), Maya Haidar Boustani (ICOM Lebanon), Dora Llamas (ICOM Spain), Luis Péres Armiño (ICOM Spain), Aude Porcedda (University of Québec, Trois-Rivières), Kate Seymour (ICOM CC), Leena Tokila (ICTOP), Hélène Vassal (ICTOP & ICOM France), Elka Weinstein (ICOM Canada) et Dorit Wolenitz (NATHIST).

Invited speakers:

- **Anne-Marie Afeiche**, Director General, General Council of Museums, Ministry of Culture of Lebanon
- **Sandrine Beaujard-Vallet**, Fine Art Transportation Department Officer, Sustainable Development Policy Referee, Centre Pompidou, France
- **Ann Bourgès**, Secretary-General, ICOMOS France, Climate Change and Heritage Working Group Pilot, France
- **Sophie Biecheler**, Director of Institutional and International Relations, Universcience, France
- **Olivier Bielecki**, Director of IT, Universcience, France
- **Rita Capurro**, ICTOP member, Italy
- **Anne Charpentier**, Director, Jardin botanique de Montréal, Canada
- **Emmanuel Château-Dutier**, Digital Museology Professor, University of Montréal, Canada
- **Annelies Cosaert**, Scientific Associate Member, Sustainability Council, Royal Institute of Artistic Heritage, Belgium

- **Ech Cherki Dahmali**, President, ICOM Arab,, Morocco
- **Manuelina Duarte**, Social Museology Scientific Expert, Brazil
- **Danilo Forleo**, Head of Preventive Conservation, National Musée national des châteaux de Versailles et de Trianon, France
- **Johanna Eiramo**, Digital Platform Officer, Finnish National Gallery, Finland
- **Amareswar Galla**, President, UNESCO Chair on Inclusive Museums and Sustainable Heritage Development, India
- **Philippe Guillet**, Vice-President, ICOM NATHIST, France
- **Mohamed Ismail**, Professor of Archaeology and Heritage Information Systems, Ain Shams University, Egypt
- **Blaise Kilian**, Co-director, Cambodian Museum of Economy and Currency, Cambodia
- **Ernest Kpan**, President, ICOM Ivory Coast, Ivory Coast
- **Amarilis Lage**, Exhibitions and Content Coordinator, Museu do Amanhã, Brazil
- **Ning Liu**, architect et co-founder of Building for Climate, China
- **Tamar Mayer**, Associate Professor, Chief Curator, Genia Schreiber University Art Gallery, Tel Aviv University, Israël
- **Marie-Claude Mongeon**, Head of General Secretariat and Strategic Projects, musée d'Art contemporain de Montréal, Canada
- **Diala Nammour**, Director, MACAM (Modern and Contemporary Art Museum), Beirut, Lebanon
- **Marina Piquet**, Curator, Public Programmes Coordinator, Museu do Amanhã, Brazil
- **Aude Porcedda**, Associate Professor of Cultural Management and Organisation, University of Québec, Trois-Rivières, Canada
- **Laurent Ricard**, Head of the Building and Security Department, Conservation Centre of the Louvre Museum, France
- **Michela Rota**, Architect and museum and sustainable development consultant; coordinator of the Working Group Sustainability and Agenda 2030 ICOM Italy - Italy
- **Kate Seymour**, Head of Education Department, Stichting Restauratie Atelier Limburg (SRAL), Maastricht & University of Amsterdam, The Netherlands

- **Rachel Tabet**, Collections Maintenance Specialist, Beirut, Lebanon
- **Aparna Tandon**, Senior Programme Manager, ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property), Italy
- **Leena Tokila**, Chair, ICTOP, Finland
- **Hélène Vassal**, Head of Collections Support, Louvre Museum, France
- **Ludivine Vendé**, Head of Scientific, Technical and Industrial Culture Department, Museum of Nantes, France
- **Xavier Roigé Ventura**, Professor of Museology, University of Barcelona, Spain

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ICOM France Publications



Rencontre Collection

Et demain ? Intelligence artificielle et musées

Synthesis of the ethics debate held on 13 November 2023 in Paris at the Jacqueline Lichtenstein Auditorium and on digital platforms. Paris: ICOM France, February 2024.

Nouveaux publics, nouveaux usages, nouveaux modèles

Proceedings of ICOM France's Professional Day 2023 on 22 September 2023 in Tours at the City Hall. Paris: ICOM France, December 2023.

Peut-on encore «acquérir» ?

Synthesis of the ethics debate held on 20 June 2023 on digital platforms. Paris: ICOM France, September 2023.

L'important, c'est de participer ! Pratiques participatives et responsabilité des professionnels de musée

Synthesis of the ethics debate held on 28 March 2023 on digital platforms. Paris: ICOM France, June 2023.

Vers de nouvelles normes de conservation ? Réévaluer face à la crise énergétique et climatique

Synthesis of the ethics debate held on 13 December 2022 on digital platforms. Paris: ICOM France, April 2023.

A qui appartiennent les collections ?

Proceedings of ICOM France's Professional Day 2022 on 23 September 2022 in Paris at the musée du Quai Branly - Jacques Chirac. Paris: ICOM France, December 2022.

Au service des collections : des professionnels au cœur des musées

Synthesis of the ethics debate held on 19 May 2022 on digital platforms. Paris: ICOM France, July 2022.

Les musées, acteurs crédibles du développement durable ?

Synthesis of the ethics debate held on 17 February 2022 on digital platforms. Paris: ICOM France, June 2022.

Peut-on parler d'une Europe des musées ?

Synthesis of the ethics debate held on 9 December 2021 on digital platforms. Paris: ICOM France, April 2022.

Solidarités, musées : de quoi parle-t-on ?

Series of online debates, 2020-2021. Also available in English. Paris: ICOM France, April 2022.

Les musées font équipe

Proceedings of ICOM France's Professional Day 2021 on 24 September 2021 in Nice at the musée national du Sport. Paris: ICOM France, December 2021.

L'intelligence des musées a-t-elle un prix ? La nouvelle donne de l'ingénierie culturelle

Synthesis of the ethics debate held on 3 June 2021 on digital platforms. Paris: ICOM France, September 2021.

Recherche et musées

Synthesis of the ethics debate held on 9 March 2021 on digital platforms. Paris: ICOM France, July 2021.

De quoi musée est-il le nom ?

Synthesis of the ethics debate held on 26 November 2020 on digital platforms. Paris: ICOM France, March 2021.

Et maintenant... Reconstruire. Penser le musée « d'après »

Proceedings of ICOM France's Professional Day 2020 on 25 September 2020 in Paris at the Institut national du patrimoine and on digital platforms. Paris: ICOM France, December 2020.

De quelle définition les musées ont-ils besoin ?

Proceedings of the ICOM Committees Day on 10 March 2020 in Paris at the Grande Galerie de l'Évolution (MNHN). Also available in English. Annex volume. Paris: ICOM France, June 2020.

Le sens de l'objet

Synthesis of the ethics debate held on 29 January 2020 in Paris at the Auditorium Colbert – Galerie Colbert. Paris: ICOM France, April 2020.

Dons, legs, donations... Comment intégrer les « libéralités » dans les projets scientifiques et culturels ?

Proceedings of ICOM France's Professional Day 2019 on 4 October 2019 in Paris at the Institut du Monde Arabe. Paris: ICOM France, January 2020.

Musées et droits culturels

Synthesis of the meeting held on 8 February 2019 in Rennes at Les Champs Libres – musée de Bretagne. Paris: ICOM France, November 2019.

Les réserves sont-elles le cœur des musées ?

Synthesis of the ethics debate held on 18 April 2019 in Paris at the Auditorium Colbert – Galerie Colbert. Paris: ICOM France, July 2019.

Les paradoxes du musée du XXI e siècle

Proceedings of ICOM France's Professional Days 2018 on 28 and 29 September 2018 in Nantes at the musée d'Arts. Paris: ICOM France, June 2019.

Restituer ? Les musées parlent aux musées

Synthesis of the ethics debate held on 20 February 2019 in Paris at the musée des Arts et Métiers. Paris: ICOM France, April 2019.

Qu'est-ce qu'être, aujourd'hui, un « professionnel de musée » en Europe ?

Synthesis of the ethics debate held on 5 June 2018 in Paris at the Auditorium Colbert – Galerie Colbert. Paris: ICOM France, January 2019.

Comment valoriser l'engouement des publics pour le patrimoine ?

Synthesis of the meeting held on 23 May 2018 in Dijon at the Palais des ducs de Bourgogne. Paris: ICOM France, January 2019.

Face aux « risques », comment les musées peuvent-ils améliorer leur organisation ?

Synthesis of the ethics debate held on 8 November 2018 in Paris at the Auditorium Colbert – Galerie Colbert. Paris: ICOM France, January 2019.

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The French National Committee of ICOM – ICOM France – is the French network of museum professionals. In 2023, it brought together more than 5,845 institutional and individual members, fostering a broad and diverse community of stakeholders spread across the entire territory and representing all disciplines: fine arts, sciences and technology, natural history, eco-museums or *musées de société*.

Museums hold scientific, social and cultural responsibilities. They transmit history to communities and enable them to share it.

Museums bring cultures and generations closer together, nurture emotions and the pleasure of learning. Moreover, they must discern what aspects of our contemporary culture will leave a mark into the future.

ICOM France is firmly committed to serving its members to accomplish these missions and supports them in the exercise of their professions.

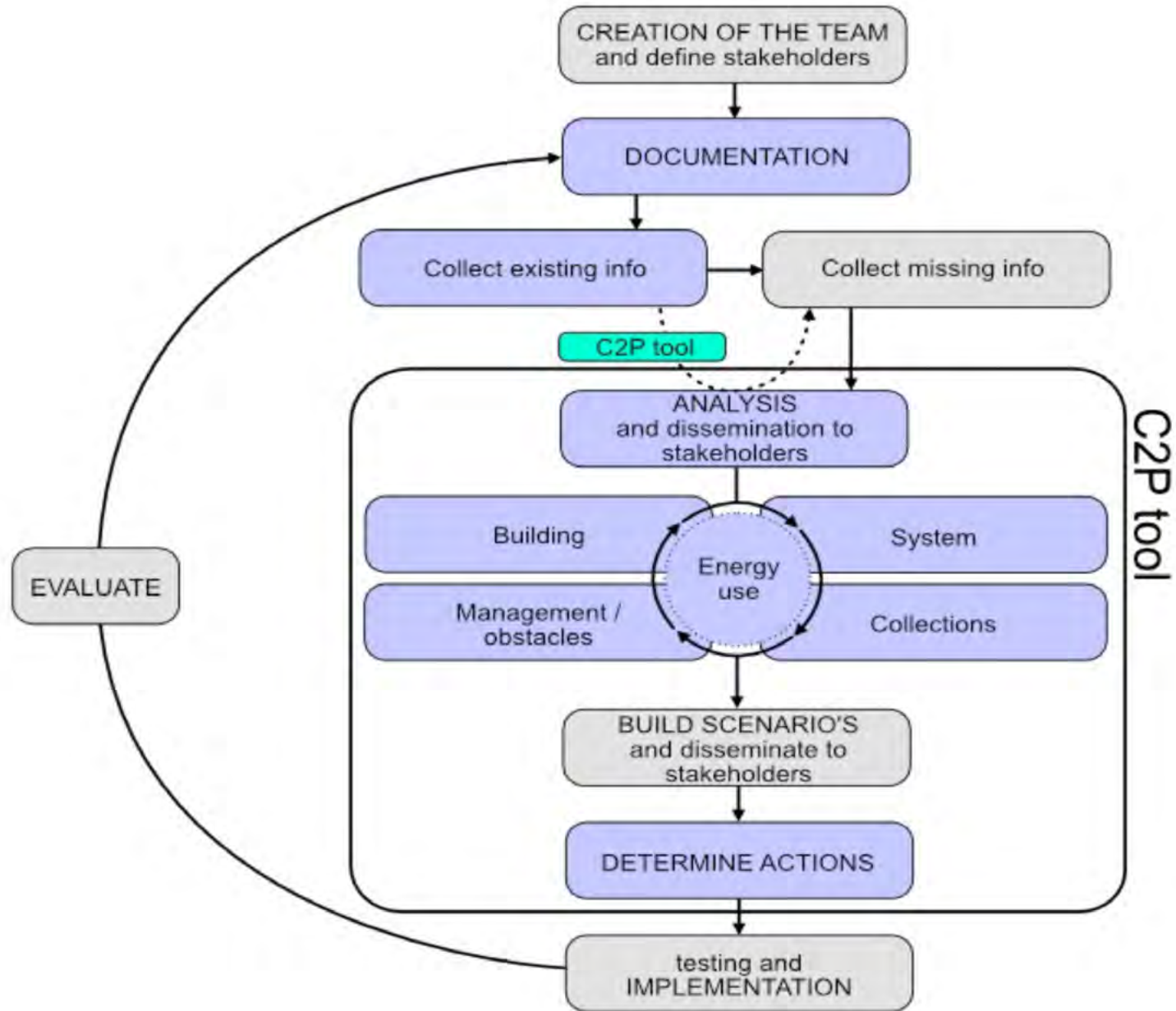
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Annexes



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Psychrometric Chart

SI (metric) units

Barometric Pressure 101.325 KPa (sea level)

Based on data from Carrier Corporation Cat. No. 794-001, Dated 1975

Historical building, Belgium

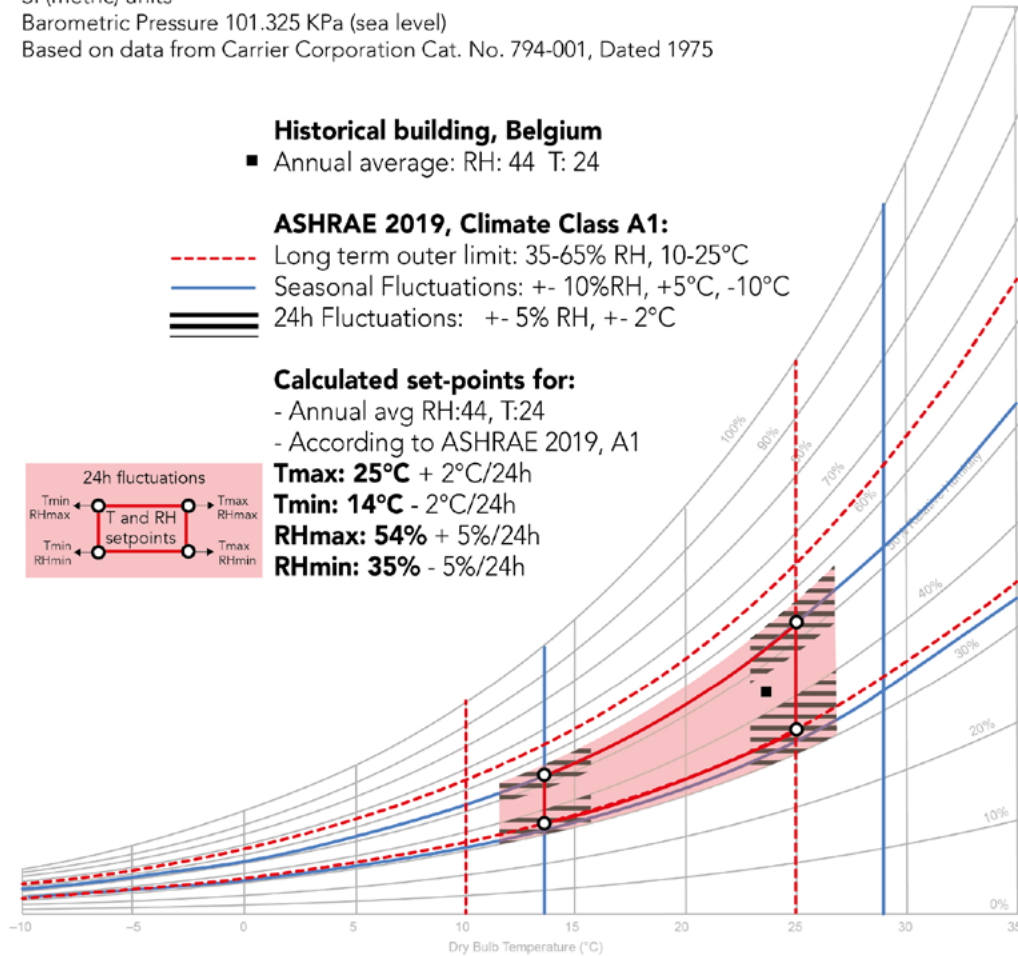
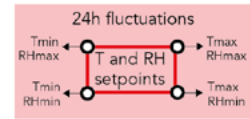
- Annual average: RH: 44 T: 24

ASHRAE 2019, Climate Class A1:

- Long term outer limit: 35-65% RH, 10-25°C
- Seasonal Fluctuations: $\pm 10\%$ RH, $\pm 5^\circ\text{C}$, $\pm 10^\circ\text{C}$
- 24h Fluctuations: $\pm 5\%$ RH, $\pm 2^\circ\text{C}$

Calculated set-points for:

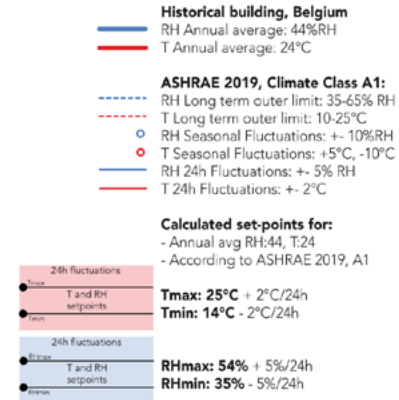
- Annual avg RH:44, T:24
- According to ASHRAE 2019, A1
- Tmax: $25^\circ\text{C} + 2^\circ\text{C}/24\text{h}$**
- Tmin: $14^\circ\text{C} - 2^\circ\text{C}/24\text{h}$**
- RHmax: $54\% + 5\%/24\text{h}$**
- RHmin: $35\% - 5\%/24\text{h}$**



Timeline - ASHRAE 2019 - Climate Class A1 - Narrow interpretation

SI (metric) units

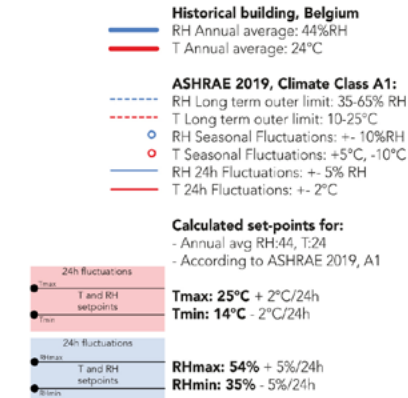
Typical interpretation for an (at least) T controlled building in a temperate climate with 4 seasons



Timeline - ASHRAE 2019 - Climate Class A1 - Wide interpretation

SI (metric) units

Typical interpretation for an (at least) T controlled building in a temperate climate with 4 seasons



CHANGING MENTALITIES: Overcoming the dichotomic approach...

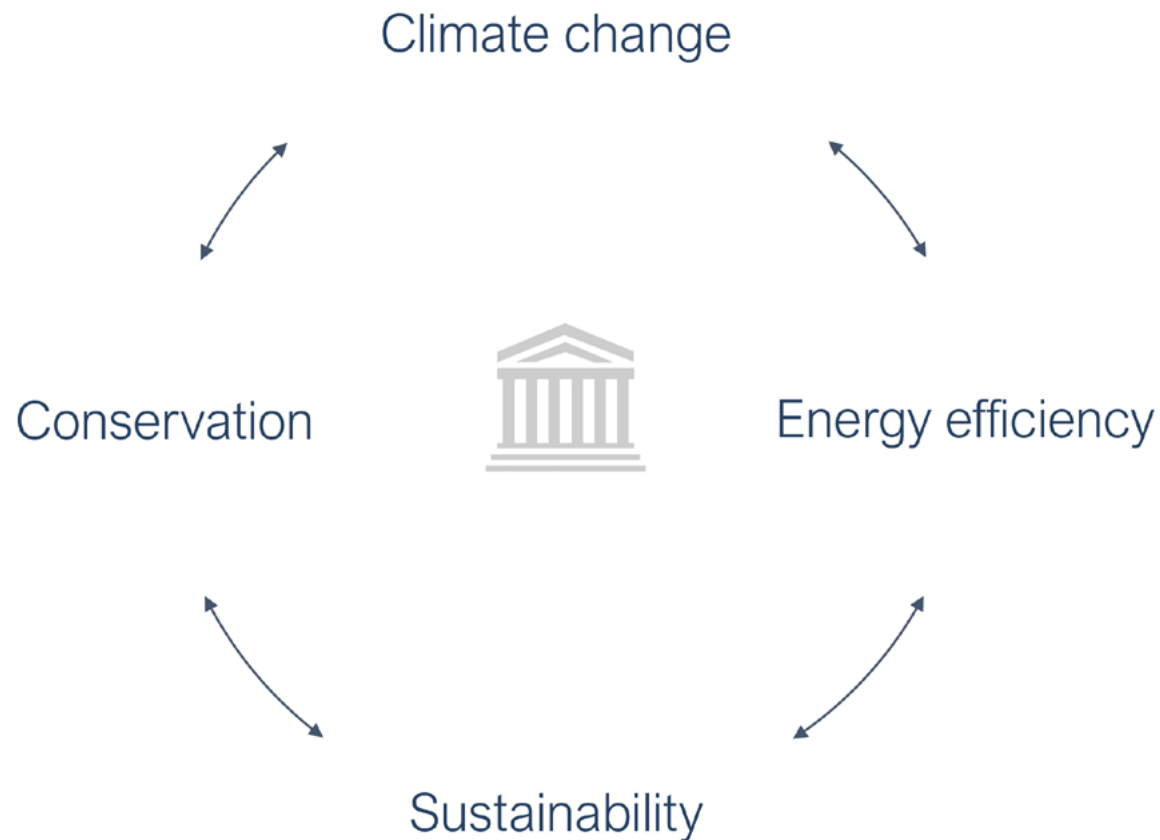


Blackening of the stone due to pollution, before and after restoration, Germany
© Danilo Forleo/ Château de Versailles



CHANGING MENTALITIES:

Overcomes the dichotomic approach towards a systemic approach



AN EMBLEMATIC CASE: THE AIR CONDITIONING PROJECT OF THE PALACE OF VERSAILLES

Queen's Chamber, records from 2014

CONDITION SURVEY
good state of conservation



© Christophe Fouin/ Château de Versailles

VS

RISK ASSESSMENT
not in accordance with museum standards

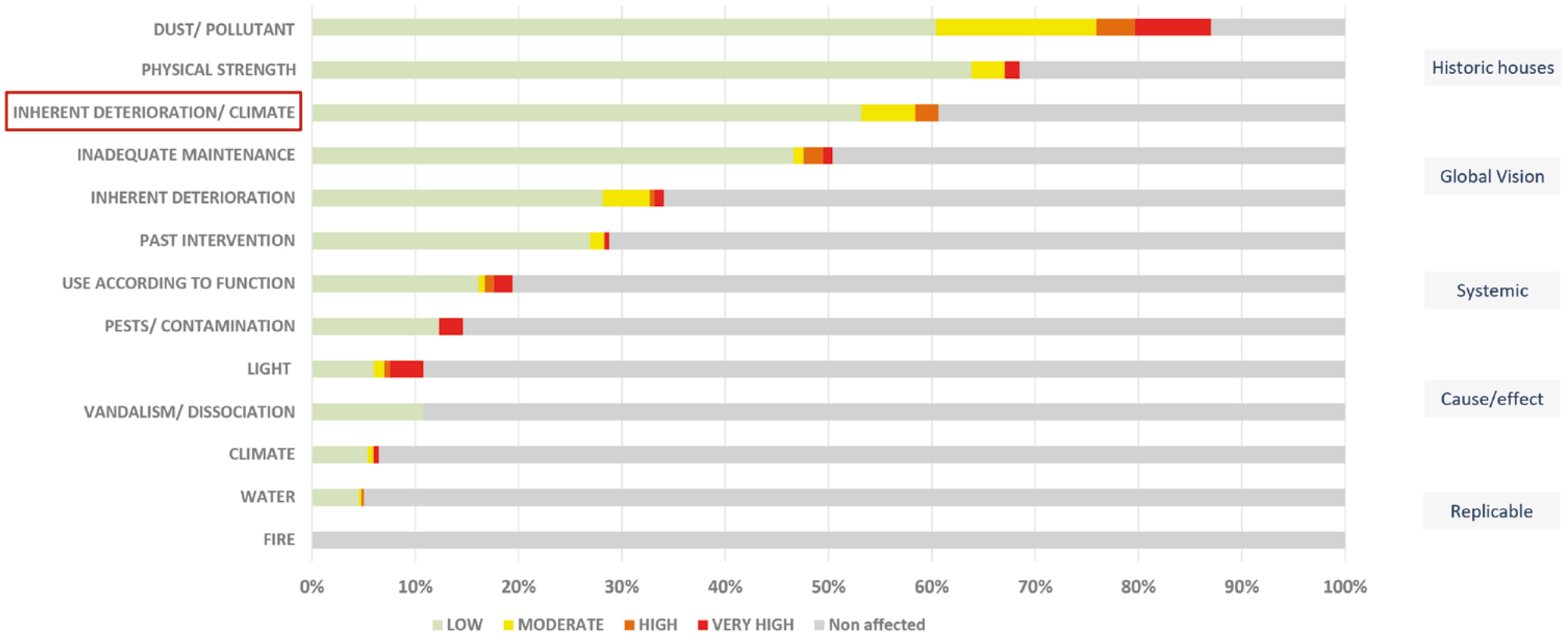


© CONSERVATION CONFORMITY RATE: 50%; Climate graphing software, records from 2014, before refurbishment of the heating system

NEW ASSESSMENT METHOD



Ranking of active causes



Example of a conservation assessment that can be carried out in a historic house using the EPICO method





- | | |
|-------------------------------|-----------------------------|
| 1. Amaravathi Heritage Museum | 12. Saravath Satram |
| 2. Bus Stand | 13. Krishnaveni Ghat |
| 3. ASI Museum | 14. Nandanavanam |
| 4. Maha stupa | 15. Budha statue |
| 5. Ginning Mill | 16. Post Office |
| 6. Village Vegetable Market | 17. S.R.R. High School |
| 7. Gantalamma chettu | 18. Police Station |
| 8. Zamindar's Banglow | 19. Ankamma Gudi |
| 9. Amara lingeswar Temple | 20. Nunelagunda Cheruvu |
| 10. Ghat (Sound & Light Show) | 21. Balusulamma thalli gudi |
| 11. Temple Street | 22. R.V.V.N. College |
| | 23. Satavahana Fort |