

Multimedia experiences for inclusive communication of archaeological heritage

*Original*

Multimedia experiences for inclusive communication of archaeological heritage / Benente, Michela; Boido, Cristina. - 8:(2021), pp. 528-535. ( WORLD HERITAGE and DESIGN FOR HEALTH Le Vie dei Mercanti XIX International Forum Napoli e Capri (ITA) 15-17 June 2021).

*Availability:*

This version is available at: 11583/2988722 since: 2024-05-15T09:40:16Z

*Publisher:*

Gangemi Editore

*Published*

DOI:

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ARCHITECTURE HERITAGE and DESIGN

Carmine Gambardella

XIX INTERNATIONAL FORUM

Le Vie dei  
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# World Heritage and Design for Health

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XIX International Forum

Editing: Alessandro Ciabrone

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**Via Giulia 142, Roma**  
[www.gangemieditore.it](http://www.gangemieditore.it)

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ISBN 978-88-492-4089-4

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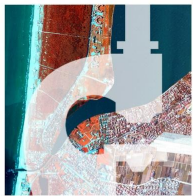
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# WORLD HERITAGE and DESIGN for HEALTH

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## XIX INTERNATIONAL FORUM

Naples 17 - Capri 18 | 19 June 2021

### Multimedia experiences for inclusive communication of archaeological heritage

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#### Abstract

The museums, sites and collections closed due to Covid-19 have highlighted the importance of heritage not only for cultural learning but also for the well-being of people. The impact of the Pandemic on cultural heritage and on archaeological heritage in particular, offers an opportunity to reflect on the effectiveness of communication systems. The accessibility of archaeological heritage is particularly complex, and the visit is a key element of its use.

However, it has to be said that archaeological sites and museums have long been a privileged field of experimentation with multimedia products and digital reconstructions. These, however, were only proposed and integrated into the visit itinerary or used in cases of particular interest and exceptionality for mass dissemination purposes.

The pandemic has made it essential to rethink the way in which the cultural content of heritage is constructed, shared and enjoyed. Digital technologies have proved indispensable to create new virtual spaces in which cultural sharing, even if not enjoyed, continues to be alive and engaging.

The paper aims to analyze what has been done by archaeological sites and museum institutions by comparing the different experiences and analyzing the changes between before and post lockdown. The analysis will examine the communication tools used but, above all, the contents transmitted, focusing on multimedia digitalization as an indispensable tool for inclusive communication.

**Keywords:** Archaeological heritage, inclusive communication, virtual accessibility, Pandemia

#### 1. Introduction

During periods of deep crisis, processes that may already be latent are usually accelerated, spreading and strengthening in a sudden and sometimes impetuous way, changing scenarios and creating new opportunities. This is the case of the historical moment in which we are living, due to the lockdown, in the field of cultural heritage management and enhancement there has been a rapid and significant increase in digitalization. In order to keep alive and dynamic the link between visitors and cultural heritage, made inaccessible by the coronavirus emergency, more than 60% of the world's museums have strengthened their remote visibility. According to a survey by the Network of European Museum Organisations, this action is taking place especially on social platforms (80% on Facebook and 20% on Instagram), with an increase in online visits of 40% [1].

Italian museums have also been following this trend. According to a study on the visitor experience on a sample of 430 Italian museums, archaeological sites and monuments [by the Osservatorio Innovazione Digitale nei Beni e Attività Culturali of the School of Management of the Politecnico di Milano] 76% of them have at least one profile on social networks, with Facebook being the most popular (76%), followed by Instagram (45%, compared to 26% the previous year) and finally by the most recent TikTok. While 85% of the museums have a website related to the individual institution or are present on other websites, such as that of the municipality, only 24% have a strategic plan for digital innovation.

Although very often museums have both a website and a social account, few of them have a digital catalogue of their heritage and even less of them offer a virtual tour or interactive tools such as video games to stimulate curiosity and prepare for the visit.

"If with open museums, digital technology was a complement to the visitor experience, with the closure of cultural institutions, digital technology has become a necessary tool for offering cultural content. This has inevitably led to a different use of the online channel, first and foremost social media, but also websites, which have gone from being tools for communication and preparation for the visit, as they were until now, to tools for the actual delivery of content," said the Observatory's scientific director [2]. For many museums and archaeological sites, the Google arts&culture experience has represented a first step in the field of digitisation. The aim of the project, which started in 2011 as a high-definition collection of works of art exhibited in the world's major museums, is to provide a virtual tour. The project in most cases only provides the possibility to move around the collections with an exploration exploiting the technology used by Street View. The material uploaded from all over the world can be found through different search keys: categories, date, means of expression, artists and collection to which are added thematic insights, artistic movements, events and historical figures. The primary aim is to offer visibility to museums, foundations, organisations and theatres, also through the function of geographic localization of places. The contents, although set out in a common structure, are very heterogeneous. However, the discovery of places for travellers and Internet users is very limited, both in terms of the possibility of finding one's way around physical places and the organisation of content, especially for users with different needs. The richness of the database has however made it a valuable tool during the lockdown, both for the use of content and as an experience from which to build new communication projects and public involvement. Although not generalised, the project is considered to have represented a starting point to digitisation. Among the few Italian sites that have joined the project we find some of the museums considered of interest for the present work. For others, however, digitisation was the result of a different experience; it should be stressed, however, that the contents presented online are still unstructured products, organised in an extemporaneous way reusing material prepared for different purposes, without any programmatic action either in the choice of contents or in the identification of the most appropriate technological instrumentation for its administration. It is also important to note that very often museums do not have the possibility of employing specialised staff with digital skills. This situation of digital insecurity was accentuated during the lockdown. Although on the days of the lockdown many museums increased the offer on their websites and social channels in order not to interrupt the relationship with their audience, very often the online initiatives were carried out without a precise communication plan.

The resulting response from visitors reflects the different levels of museum offerings. On the one hand, large museums such as the Uffizi [3] have seen an exponential increase in the number of online users with a rich and articulated offer, created ad hoc for remote use, while in other cases the response from the public has been modest and disengaged. This is the particular case of museums and archaeological sites, which, according to the data of a survey commissioned by Impresa Cultura Italia-Confcommercio to analyse "cultural spending" during Covid closures, were poorly visited (flop of virtual visits to museums and archaeological sites: only 4% have made a full virtual visit, 28% did not know of their existence and 51% knew but did not use them) [4].

In order to provide an organic response to this increasingly pressing need, the Mibact has presented a specific plan for the digitisation of heritage worth around 2.5 billion, using Next Generation EU funds. At the same time, as declared by Dario Franceschini, Minister for Cultural Heritage, other funds have been allocated for a public digital platform, "the Netflix of culture", through which the entire cultural offer of our country can be presented in Italy and worldwide.

## **2. Case study**

In this situation, those museums or archaeological sites that were already technologically equipped before the pandemic and already had the possibility to offer visitors virtual tours were certainly at an advantage compared to others.

An example of this is the MAV, the Virtual Archaeological Museum of Herculaneum [5], a young museum, which was created 12 years ago not far from the archaeological excavations of ancient Herculaneum. Thanks to its laboratory of technology applied to Cultural Heritage and communication, considered among the most avant-garde in Italy, since the end of 2019 it has already proposed a virtual journey into the life of the main archaeological areas of Pompeii, Herculaneum, Baia, Stabia and Capri. Today, its MAV 5.0 - Virtual multiReality can also be viewed remotely, allowing a complete fruition of the museum offer in a double weekly appointment. In fact, an interactive Virtual Tour of the museum is offered, accessible on the ZOOM platform, for school groups, adult groups or individuals, supported by a guide who, interacting with digital visitors, can accompany them in their discovery of the past by answering questions and curiosities live.

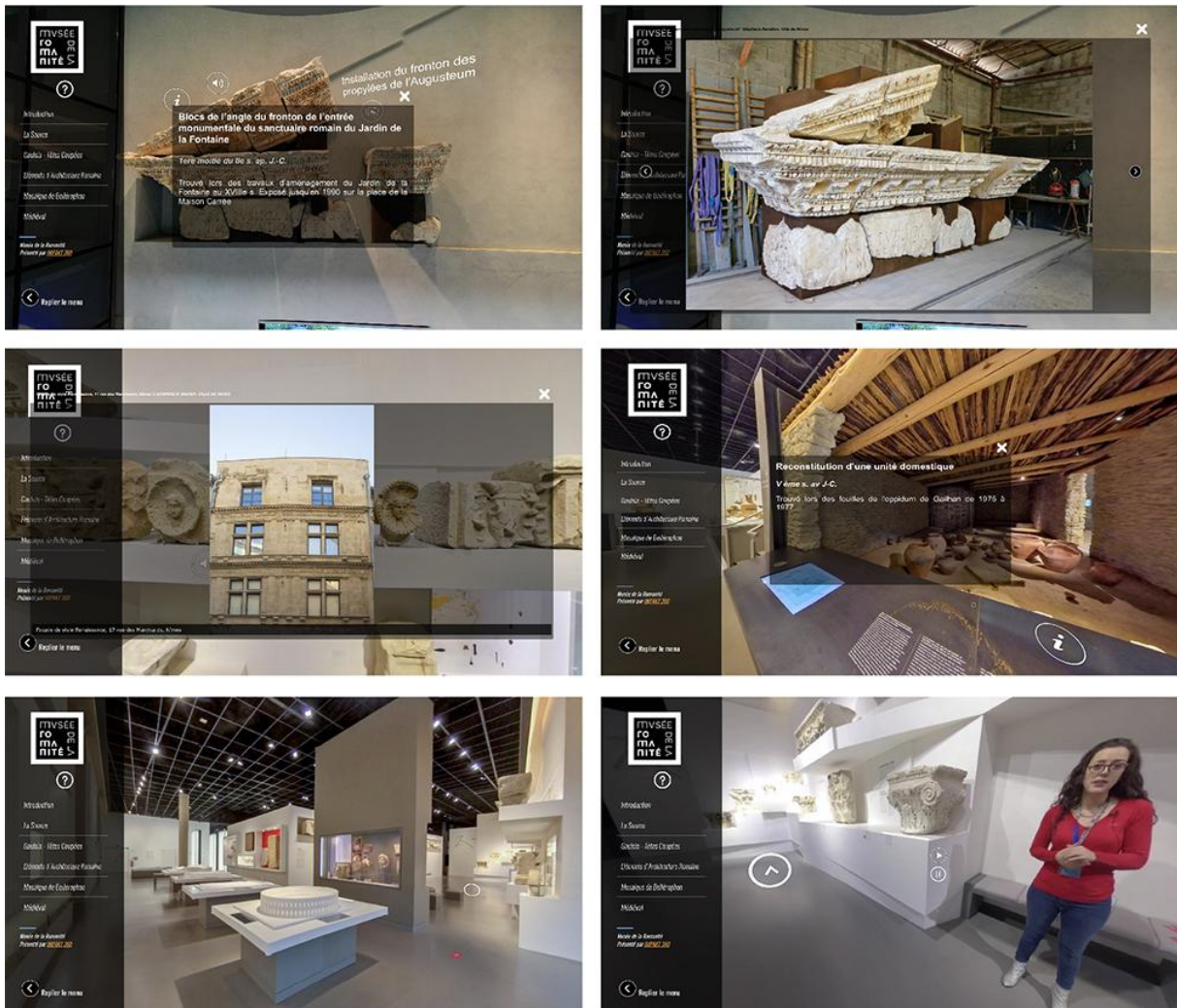


**Fig. 1:** Three-dimensional reconstructions of the Roman villas in the Gulf of Naples for the virtual tour proposed by the MAV.

The guided tour, also available in English and French, lasts between 60 and 90 minutes and includes films, images and virtual reconstructions created not only to get to know the ancient Roman cities before the devastating and tragic eruption of 79 AD, but also to understand the daily life of their inhabitants. Although it is not a complete immersive experience as could be enjoyed by visiting the archaeological remains and the MAV live in parallel, it is still an effective means of reaching thousands of users around the world.

One of the museums whose exhibition design uses "les dernières technologies, pour appréhender de manière ludique et guider au mieux les visiteurs" is the Musée de la Romanité in Nîmes. Opened in 2018, it is the result of a successful mediation operation between archaeology and virtual reality. This has allowed the museum to find itself at an advantage at this time of pandemic and, in anticipation of reopening its doors to the public, it has made available a 360° virtual tour, accessible from computers, tablets and smartphones, to walk through its museum rooms in a vivid, immersive and diverse way. The tour, divided into six sections, allows visitors to admire some of the 5,000 archaeological artefacts and objects on display, which, alternating with models, videos, real and virtual reconstructions, make for a spectacular journey through Roman history.

By alternating complete panoramas, in-depth studies of some of the works, spectacular views and specific comments by museum staff that materialise along the way, the tour becomes a formidable means of accessing the museum's contents for the most distant visitors, responding to the demand to make culture more accessible to all. In addition, the digital tour aims to encourage the creation of specific didactic contents, adaptable to the educational path of the school public. As the museum director says "A long terme, ces objectifs pédagogiques seront repris à des fins touristiques: encourager, grâce à un outil consultable dans le monde entier, un public éloigné à se rendre au musée. La virtualisation permet à des publics de découvrir le musée et déclencher l'envie de venir le visiter. Elle valorise l'emplacement face aux Arènes et au cœur du patrimoine, fait découvrir la beauté du lieu, le geste architectural, permet de se rendre compte de la richesse des collections et des savoirs qu'offre le musée et met en valeur l'articulation du patrimoine avec le territoire" [6].



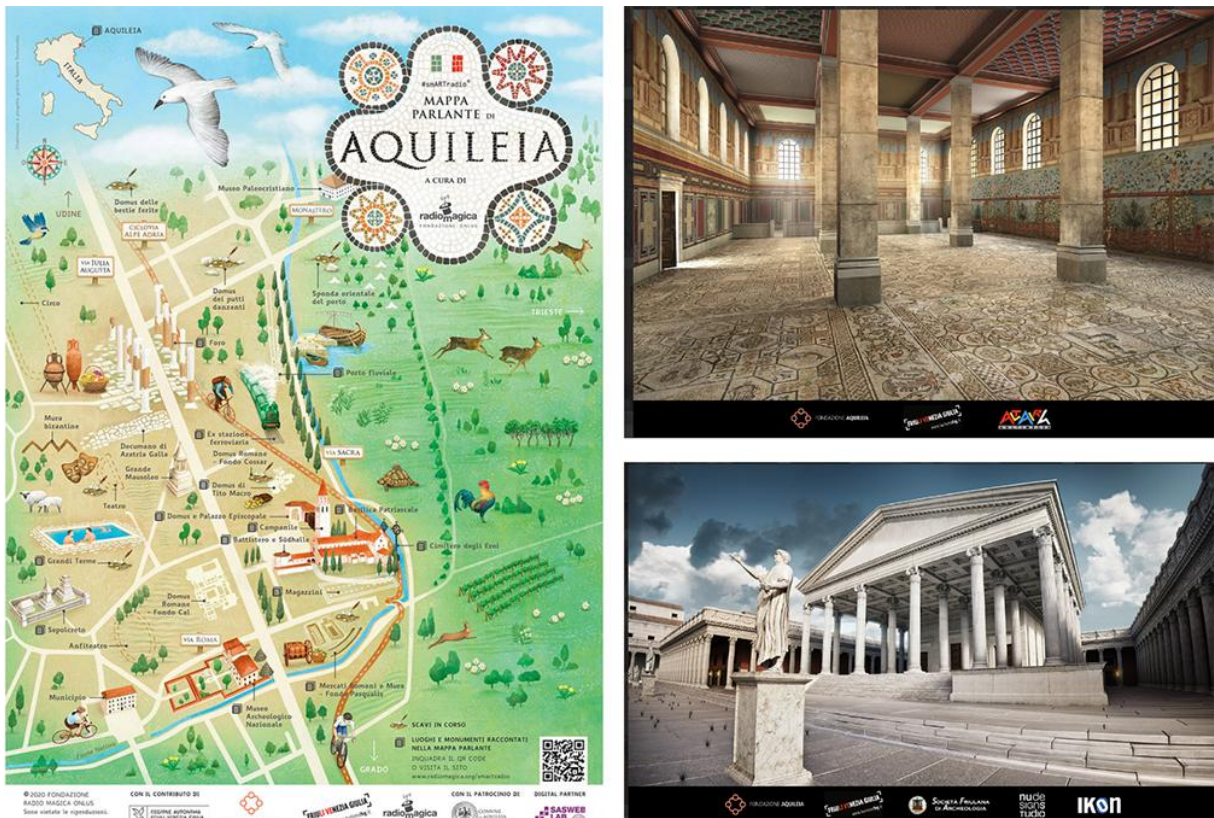
**Fig. 2:** Virtual reality and archaeology offered by digital tour in the Musée de la Romanité in Nîmes.

With the aim of maintaining contact in particular with children and young people who, because of the pandemic, have seen since last spring the blocking of all trips and cultural initiatives planned by and for schools, many museums are proposing new projects of remote educational visits using the new digital technologies.

This is the case of the Fondazione Aquileia [7] which, together with the Friuli Venezia Giulia Region, is offering primary and secondary schools in the region the opportunity to take advantage of about a hundred online guided tours and a dozen remote workshops, led by an archaeologist, to discover the epigraphist's trade starting from the inscriptions in the Lapidary Galleries of the National Archaeological Museum. Through technology it will be possible to take part in the event "Let's go on a trip to Aquileia with the Talking Map", remote visits conducted by an expert that will allow participating classes to experience, albeit virtually, the experience of a real visit to the UNESCO site of Aquileia, one of the largest cities of the Roman Empire. With the support of the Talking Map, which will be sent to the booked classes, a useful cognitive tool already used in the past for in-person visits, the remote tours will take place with the participation of experts and actors and with the help of multimedia material.

These new ways of disseminating culture do not replace traditional educational trips and guided tours in absolute terms, but propose a reflection on how to do educational tourism in an innovative way, through the use of technology and digitalization. It is hoped that augmented reality and virtual reality courses, used in a complementary manner to the real visit, will continue to be valuable allies in educational tours of cultural heritage, both in the preparation phase and during the actual visit.

Since a few days (March 2021) it has been possible to visit eight of Rome's museums [8] virtually using augmented reality and new multimedia content, with more than 300 rooms and thousands of works, available in both Italian and English. These are online virtual tours of Rome's cultural heritage, also accessible via mobile devices, which have become an indispensable resource in this period of lockdown to allow museums to be visited from a distance.



**Fig. 3:** Multimedia supports for the virtual didactic tourism proposed by the Aquileia Foundation.

By means of new digital capabilities, new multimedia content and new technologies that improve the enjoyment of the visit itself, the tours have been revised, expanded and updated from the previous version, offering the opportunity for highly immersive virtual tours.

Through the use of a more innovative and performing technology, the visit proposal, already present before the pandemic but offered only by some museum sites, (in addition to the Capitoline Museums, Ara Pacis Museum, Napoleonic Museum, Mercati di Traiano - Museum of the Imperial Forums and Casino Nobile of Villa Torlonia, three other museum sites have been added: Centrale Montemartini, Museum of Rome and Museum of the Walls) has been renovated, making it possible to use it from any type of device, including smartphones and tablets, supported by new tools such as special cardboards or VR viewers. The virtual tours, which allow visitors to navigate through almost all of the museum's rooms, are enriched with videos, photo galleries, images that can be navigated using a special control panel to move around the spaces virtually, zooming and rotating through 360°, in-depth information with texts about the rooms and works of art, maps of the routes and finally audio descriptions.

There are numerous animated three-dimensional models that deepen the knowledge of the archaeological sites: from some of the museum rooms it is possible to view, full screen, the videos of the digital reconstructions already used through special monitors in the real visit routes, now also shared online.

There are two tools for quick and easy navigation through the works on display. The first is the Points of Interest section, which lists places and objects that can be viewed without having to travel virtually through the museum, and the second is the "not to be missed" section, where you can find a selection of works and rooms. This tool is very useful and practical for those who do not know the museum and are visiting it for the first time. Thus, by selecting a work on the list, the visitor is virtually transported to the room containing the chosen work. In addition, an 'intelligent map' guides the user throughout the visit, providing a physical yet virtual overview of the places visited, so that they do not get lost in the museum space, pointing out rooms or works not yet displayed.

Finally, the new Virtual Tours of the Centrale Montemartini, the Museum of Rome and the Museum of the Walls, using the latest generation of drones, allow users to view the rooms and artworks from above, offering an additional and unprecedented perspective on the museum and also on the city.

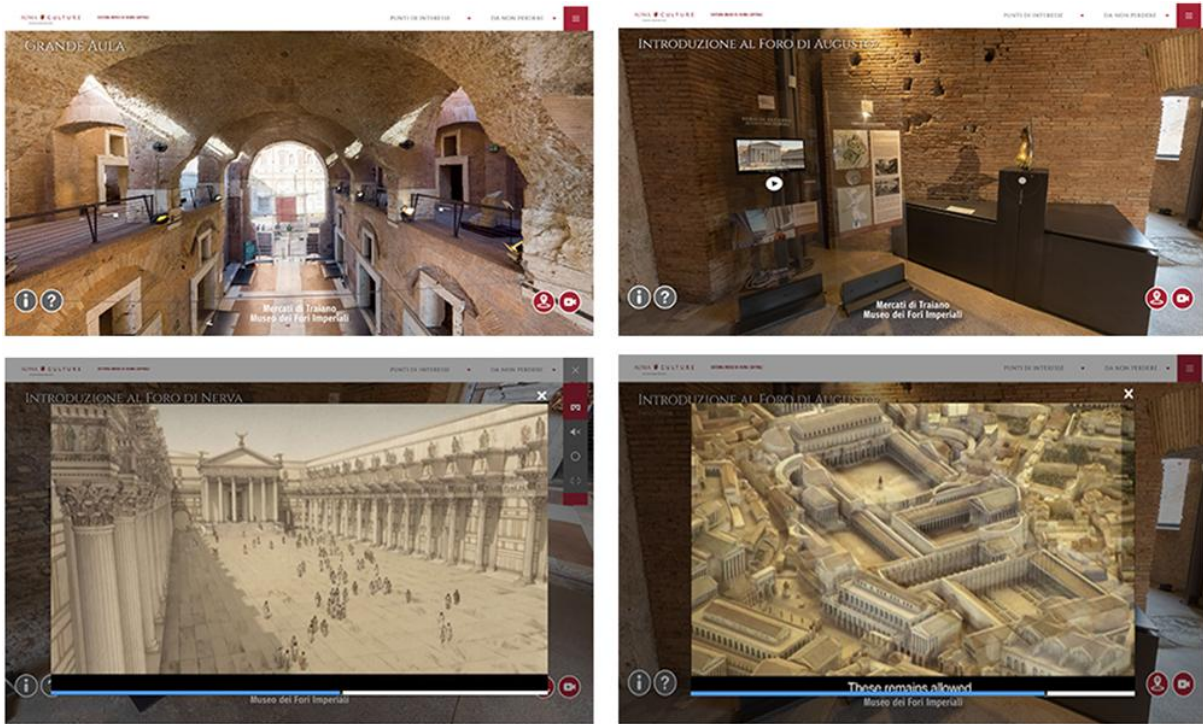


Fig. 4: Augmented reality and new multimedia content at the Imperial Forum Museum in Rome.

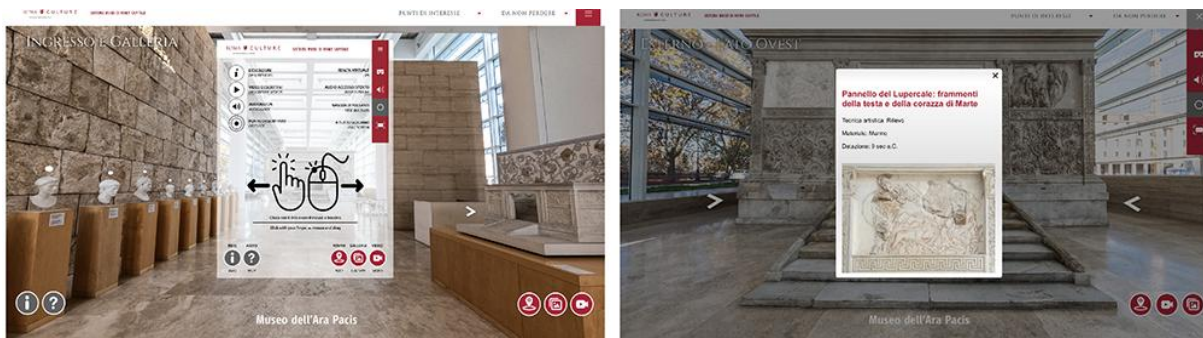


Fig. 5: Virtual tour of the Ara Pacis Museum in Rome accessible from all devices.

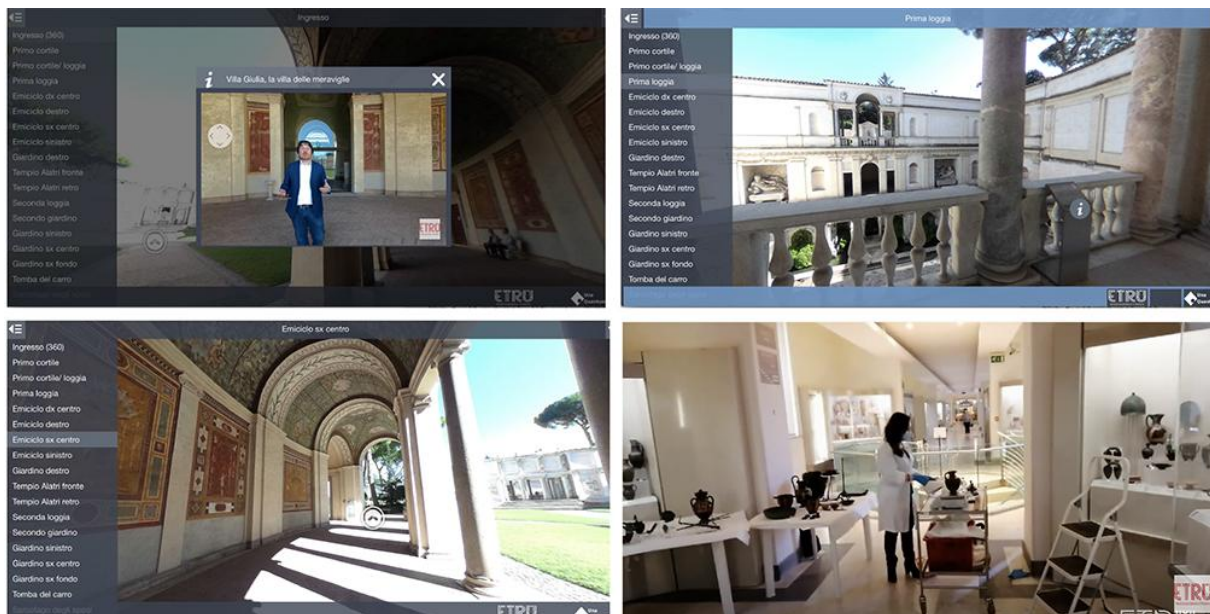
The National Etruscan Museum of Villa Giulia [9] has also joined the Mibact's campaign #iorestoacasa, to maintain a dialogue with its public using social channels (Facebook, Instagram, Twitter), its website and the Etruschannel Youtube channel.

The ETRU was one of the few museums that before the pandemic already used technology and social channels as a communication system. During the lockdown, the Facebook and Instagram profiles were always punctually updated and the YouTube channel dedicated to the museum was implemented with engaging content.

The institutional website, which has been made even more accessible to virtual visitors, is full of initiatives, particularly for children, with educational activities and themed games.

As Valentino Nizzo, director of the museum, says, "during this period we have played a lot on irony and amusement as narrative keys, to generate well-being in people connected from home in a difficult situation like last year. Technology has made us horizontal, accessible to people with difficulties and those who live abroad, therefore to those with contingent but also permanent limitations" [10].

The goal is clear: 'museums must welcome, not elevate. It is we cultural operators who have to elevate ourselves to the level of the public in order to convince people to spend their time with us, persuading them that museums are interesting and stimulating places, because here we cure people in the absence of disease'.



**Fig. 6:** Virtual tour 360° of the National Etruscan Museum of Villa Giulia in Rome.

In this way, new and specific content has been shared concerning both the works conserved and the place where they are housed, as well as interesting in-depth videos by the Director. The cultural offer is completed by numerous appointments with the restoration, through connections with the museum laboratory, thematic conferences, interviews and book presentations. For some months now, every Tuesday at 12 noon, the museum director has been online for the weekly appointment with "Intervallo Etru", live on the Facebook page to answer questions about the ancient world from the museum's rooms. In addition, a 360° Virtual Tour of the museum has been made available in order to involve visitors in a more immersive way by narrating the cultural heritage preserved through digital means. Finally, the museum collaborated with a specialized company to create "Mi Rasna - lo sono etrusco", a cultural video game for smartphones set in the Etruscan era. This video game also brought the museum and its collection live on a social network dedicated to games (Twitch), dialoguing and answering questions from young people, with the aim of entertaining them by telling them about historical content and inviting them to visit the museums.

### 3. Conclusion

Although the pandemic situation presented itself as an opportunity to modify and broaden the approach to the digital transmission of content, the current landscape presents solutions in which there has been no rethinking of modes in an inclusive way. However, the crisis can be taken as an opportunity to define new approaches to make sites and museums more accessible.

An example of this is the activities that some museums are initiating to make their contents accessible in view of the approaching period that for schools corresponds to the planning of educational trips. In this sense, the proposals of, for example, the Museo delle Navi in Pisa or the South Tyrol Archaeological Museum - Ötzi are new ways of involving students in the knowledge of museum contents, even if at a distance.

Certainly, the live cultural experience cannot be equated with the distance experience, but it must be said that it may represent a new form of content dissemination which, also in the future, may meet economic and organisational needs which are still critical by expanding the user base of museums and sites to distant audiences.

If the offer of free digital content is certainly not sustainable in the long run, the offer of innovative proposals, even paid ones, opens up new scenarios that provide space for a new way of designing. The lockdown period has shown how the demand for access to cultural content is an important component that requires, however, attention to mediation aimed at inclusion and the definition of diversified proposals according to possible users and their difficulties.

This process requires a careful analysis of needs, and digital accessibility overturns some of the stereotypes linked to accessibility that are still too often associated with the possibility of physically accessing places.

The current lack of physical accessibility to places must therefore make us reflect on the importance of access to content and its mediation, which are substantial and essential aspects for satisfactory use. If the possibility of experiencing spaces physically, actually or virtually, can contribute to the well-being of

individuals, the narration, participation and sharing of content gratifies and strengthens the link with history and our roots. Cultural heritage and the values it embodies are therefore a resource which, by learning from the current situation, may open up in the future to multiple accessible and more inclusive solutions.

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