Extended Accessibility and Cultural Heritage: A New Approach to Fruition and Conservation

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Abstract. The theme of accessibility has assumed considerable importance for the fruition of cultural heritage, evolving into the more extensive and sensitive concept of "extended accessibility". In this way it is possible to overcome the concept of "architectural barrier" intended in the reductive sense of physical obstacle, giving the same importance to all those barriers that are still neglected or even ignored today, such as psycho - cognitive, sensory and communicative ones.

Therefore, designing the extended accessibility means putting the human being with all his/her needs and requirements at the centre of attention. From this point of view, five main declinations can be identified, physical, cognitive, alternative accessibility, sensoriality and visibility catalysts, each of which has a fundamental role for the usability and enhancement of cultural sites. For each declination, a case study was analysed in which the topic was addressed by proposing different solutions able to give a concrete answer to these various problems.

Finally, a case study has been examined, the Nuragic Sanctuary of Santa Vittoria di Serri, highlighting the main problems in terms of accessibility and studying a series of solutions that could improve the usability of the archaeological area.

What has been analysed clearly highlights how there is no contrast between accessibility and usability and protection of cultural heritage, but how these aspects can coexist and indeed contribute to the improvement of the cultural opportunities.

Keywords: Cultural heritage · Extended accessibility · Disability · Universal design · Architectural barriers

1 Introduction

In the last twenty years, the theme of accessibility has assumed a considerable importance for the fruition of cultural heritage, becoming the basis of any good project for the valorisation and preservation of places of memory [1].

Improving accessibility has its own complexity, but, above all, it implies a change of mentality and attitude towards the heterogeneity of the users, with the acquisition of

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a broader point of view that can meet to the diversity of users [2: p. 1]. The concept of accessibility thus evolves into the more extensive and sensitive concept of "extended accessibility", which highlights the intent to overcome the concept of "architectural barrier" intended in the reductive sense of physical obstacle, giving the same importance to all those barriers still neglected or even ignored today, such as psychological, cognitive, sensory and communicative ones.

Therefore, designing extended accessibility means to put human beings with all their needs and requirements at the centre of attention. Only in this way it will be possible to eliminate solutions dedicated exclusively to people with disabilities, in favour of inclusive solutions, designed for an expanded user, according to the principles of "Universal Design" [1, 3, 4].

In the paper authors analyse the five main declinations that make up the extended accessibility, i.e. physical, cognitive, alternative accessibility, sensoriality and visibility catalysts, highlighting their fundamental role that each of them has for usability and enhancement of cultural heritage and presenting an illustrative example of intervention for each declination. Finally, a case study is analysed, the Nuragic Sanctuary of Santa Vittoria di Serri, highlighting its main problems in terms of accessibility and proposing a series of useful solutions to improve the usability of the archaeological area.

2 Declinations of Accessibility

The fruition represents today the main objective of any activity of enhancement and protection of the cultural heritage. To ensure extended accessibility in places of culture is therefore a priority task. For this reason, accessibility is rightfully placed within any good preservation and enhancement project, representing a fundamental point of heritage conservation.

The concept of extended accessibility is here divided into five main areas of intervention, which all have the aim to ensure the full enjoyment of cultural heritage for the whole population.

First of all, physical accessibility; in fact, sites of cultural interest are often formed by architectural works that are expressed through the quality of the space and therefore the user's direct experience becomes a fundamental factor for understanding and enjoying these sites [1: p. 9].

To ensure full usability, the physical accessibility must always be accompanied by the cognitive accessibility, which deals with communication barriers, more imperceptible than physical ones but no less strong [5]. The lack of communication, especially for users who reveal a specific need, is what still further moves people away from cultural sites, contrasting what should be the priority goal of enhancement, that is to attract the largest number of users to cultural heritage [4, 6].

In turn, cognitive accessibility is closely linked to the theme of sensoriality. The involvement of all the senses in a balanced way is an essential aspect to guarantee a pleasant perception of space and everything around us. When it comes to extended usability, the theme of sensoriality should be of considerable importance, while actually it is unfortunately one of the most neglected aspects, inclusive solutions continue to be few, and sensory barriers are still the most numerous.

It is important to specify that in any case accessibility is not always fully obtainable, in particular the physical one that has to deal with numerous limits due to different factors, including in particular those related to conservation, but also to the morphology of the sites and architectural and spatial characteristics of each cultural building. Therefore, where the accessibility of the structures is not fully achievable, "compensatory" forms of usability must be provided, which guarantee at least the unsubstantial accessibility [7]. Therefore, the fourth line of action is the so-called "alternative accessibility", which allows to overcome architectural barriers thanks to new digital technologies which allow to enhance the visit of sites or even to enjoy a virtual visit to users who do not have the necessary skills for the direct visit. Alternative accessibility is also not limited to overcome problems related to physical barriers, but can also improve cognitive and sensory barriers, thanks to tools able to show virtual additions to the existing state [8].

The last line of action concerns the visibility catalysts which, with the help of digital environments, in particular websites, social networks and video games, allow to establish a relationship between people and cultural heritage and to reach an extended and heterogeneous audience.

Therefore, we can say that accessibility requires universal design, which knows how to manage the different intervention features, showing the same attention to all types of barriers, inviting an inclusive design that is truly suitable for everyone. Furthermore, overcoming all architectural barriers is a real civil conquest, as it makes possible safer and comfortable environments, not only for users with disabilities, but for anyone.

2.1 Physical Accessibility

Sites of cultural interest are often made up of architectural structures that express themselves through the quality of the space; therefore, the direct experience of the users becomes a fundamental factor to understand and enjoy these sites. Ensuring physical accessibility represents an important step forward for people with disabilities, and also for those who may find him/herself in temporary conditions of reduced mobility.

Unfortunately, the issue of physical accessibility has collided with conservation for a long time. The interventions aimed to ensure accessibility were often considered too invasive and even incompatible with the protection of cultural heritage. This hostility always led to the adoption of temporary solutions, which have caused undoubtedly greater aesthetic damage than permanent, more detailed and careful solutions [1: p. 9]. Furthermore, time has shown how an unused asset "dies" quickly, because the limited accessibility of the sites often causes poor maintenance.

In the last thirty years, the world's cultural heritage has seen an extraordinary increase in tourist pressure, leading to an inevitable evolution of the concepts of usability and accessibility. All the architectural assets that form the cultural heritage are often characterized by architectural barriers and each visitor can have different skills and different interests. For these reasons, such a consistent heritage combined with an equally high number of visitors gives a complexity often underestimated to the theme of accessibility. Overcoming architectural barriers can no longer be considered a simple "compliance to standards" based on pre-packaged solutions, often inconsistent and

inconspicuous, but must become a methodological path based on targeted research activities capable to offer extensible and adaptable solutions to the typological multiplicity of cultural heritage [1: p. 10]. In summary, any intervention aimed to improve the accessibility of these sites must be able to reconcile the needs of conservation and protection with the need to overcome architectural barriers, responding to technical-design problems, to problems related to the users' characteristics and finally to problems represented by the protection measures.

In 2007, the Italian Ministry for heritage, cultural activities and tourism, in collaboration with Universities and many other stakeholders, edited the "Guidelines for overcoming architectural barriers in places of cultural interest", a synergistic document addressed to all those will have to face the issue of accessibility [5: p. 159]. Here, the meaning of the term "architectural barrier" has been significantly expanded, as it must not only take into account the classic physical obstacles but must include elements of various nature. Too long paths, the lack of orientation measures, the absence of handrails, the lack of seats, and all those elements that could constitute an inconvenience or discomfort are therefore considered architectural barriers. This type of approach is called "Universal Design" as it allows to design spaces that can be used by everyone, thus introducing the concept of "Extended Use" which brings together the multiplicity of individual characteristics of people, aiming to achieve inclusive solutions valid for everyone [1].

An emblematic case is the archaeological site of Pompeii. Here, in recent years, the considerable tourist pressure, combined with the evolution of the concept of accessibility, has revealed the need for new interventions in order to adapt the site. In 2010, the research "Accessible Pompeii. Guidelines for the extended fruition of the archaeological site" was carried on by the Science and Technology Centre of the University of Naples "Federico II". The area was divided into four sectors and each of them has been studied by a different operating group, aiming at relating conservation with the overcoming of architectural barriers, in order to ensure the best conditions of safety and comfort. The result was a series of projects aimed to improve the accessibility of Pompeii, ensuring an extended usability [9].



Fig. 1. Pompeii. Project "Pompeiifor all". Accessible path through the site area.



Fig. 2. Pompeii. Project "Pompeii for all". Solution for overcoming the carriage stones along the site visit routes. (https://www.lifegate.it/persone/news/pompei-per-tutti-inaugurato-itinerario-disabili)

In 2014, the proposal to improve the physical accessibility of Pompeii also came from the Ministry for Cultural Heritage and Activities (Ministero per i Beni e le Attività Culturali MiBACT). Thus the "Pompeii for all" project was born, from the collaboration of multidisciplinary teams, with the aim to study and realize simple solutions capable of solving complex problems, responding to the needs of all visitors. The case was particularly complex, as it still presents itself as a real city, with all the morphological and material problems that derive from it. An alive and dead city at the same time, as it stops in time but walked every day by visitors [10]. Despite everything, thanks to in-depth archaeological studies at the base of a complex and extensive project, "Pompeii for all" has created 3.5 km of accessible paths that, starting from the access doors, accompanyall the users to homes and public spaces, giving organicity to the visit and respecting the urban organization of the ancient city (Fig. 1 and 2).

2.2 Cognitive Accessibility

As said, physical accessibility must be the basis of any enhancement project. Personal experience, that is the possibility to "enter" in sites of culture, is undoubtedly very important, but it is not always sufficient to fully understand and enjoy the cultural heritage, especially for less expert users. Addressing the issue of accessibility therefore means taking into account all the needs of an "extended user", considering not only the physical barriers, linked to motor skills, but also the communication barriers, paying particular attention to people with mental and cognitive disabilities [5: p. 153]. The world of cognitive disabilities is particularly large, as it includes learning difficulties, autism, comprehension problems, down syndrome, etc.

The communication barriers, however, do not concern only the disabled people, but also children, who from this point of view represent a "particular" audience, and people who simply feel inadequate and not capable to understand high cultural level matters. People with cognitive difficulties cannot be considered a homogeneous "category", and therefore there are no solutions that can satisfy everyone's needs in the same way. In some cases, it may be sufficient to create information systems set up with a high level of understanding. In more serious cases, "other" aspects must be considered, for example by offering a new experience, which does not necessarily have to lead to learning, but which can still stimulate curiosity, creativity and involvement [4]. The task must be to communicate and transmit information in a clear, simple and widely accessible way, interpreting user requests, listening to the needs of the public and learning to understand the needs and expectations of that group of population more "distant" from the cultural institution. Eliminating the immaterial obstacles will allow to respond qualitatively and quantitatively to the expectations of all citizens. To achieve this, however, a real paradigm change is required. When organizing any exhibition, one should ask why people should visit it. The answer can only be given through the sharing of the interests of all potential users, who must therefore be involved both in the design phases and during the management of the environments, continually re-modelling them on the basis of customer satisfaction, in order to guarantee always a full experiential fruition [6].

The Rocca Aldobrandesca case study presents a significative model of cognitive accessibility. It is located in the highest part of the historic centre of Arcidosso, on the slopes of Mount Amiata, (Grosseto). Its musealization is part of the decades-long collaboration between the University of Florence and the Municipality of Arcidosso. The Rocca is one of the few cases in which considerable importance has been given to interactive design, with the aim of minimizing communication barriers.

The first step was to analyse the socio-economic and managerial context, trying to understand the interests and the needs of the potential users thanks to various preliminary surveys. These activities allowed to develop communication strategies based on documented and non-hypothetical critical issues and needs.

Subsequently, an interactive museum project was started, always based on the collaboration between designers and users (residents, tourists, students, etc.), during which a series of tools, closely linked to cognitive accessibility, were studied to understand the results of archaeological research. The obtained solutions were tested in the temporary exhibition organized by the University of Florence and the Municipality of Arcidosso in December 2011, with the aim of testing their effectiveness and collecting further suggestions from as many users as possible.

Once this experimentation was concluded, the final visit routes were designed and implemented. The museum space is today a true interactive communication organism, where the visitors can "interrogate" the archaeological and architectural buildings based on their interests and their level of competence [11] (Fig. 3 and 4).



Fig. 3. Arcidosso. Rocca Aldobrandesca. Visit route of the Rocca. Bronze architectural-stratigraphic model located in piazza Cavallotti. (https://www.tripadvisor.com/LocationPhotoDirectLink-g1050424-d8608144-i380103351-Aldobrandesca_Fortress-Arcidosso_Province_of_Grosseto_Tuscany.html)



Fig. 4. Arcidosso. Rocca Aldobrandesca. Museum itinerary. (https://www.facebook.com/locoarcidosso/photos/a.975996452427318/2473041362722812/?type=3)

2.3 The Sensory Perception

The five senses represent the "windows" that people use to collect information from the outside world. Actually, the sense organs are not independent, but interact with each other and with the whole organism, as a sophisticated mechanism for collecting information [12]. Therefore, the sensation is nothing more than a response to external stimuli, which allows people to build their own "image" of the objects and places that surround them. One of the factors that most complicates this type of sensory exploration is represented by synaesthesia, that is the simultaneous action of multiple senses, which, although autonomous, do not always work in a detached way [13: p. 1]. The involvement of all the senses in a balanced way becomes an essential aspect to ensure a pleasant perception of space and everything around us.

For this reason, the theme of sensoriality should have a considerable importance for the usability of cultural heritage, while in reality it is unfortunately one of the most neglected aspects. In addition, for people with sensory disabilities, the right to accessibility is not yet recognized and protected, as in the case of physical disabilities. Therefore, the places equipped with suitable measures to allow these people the opportunity to enjoy and understand the cultural heritage are still few.

In the first place, there are certainly the visual barriers, since almost all sites of cultural interest require sight as an organ of sense indispensable for their understanding, thus compromising their fruition in case of blindness or low vision [2: p. 17]. This sensorial barrier is closely linked to the cultural assumption that "art is vision" and that the "do not touch" rule reigns in museums. In fact, human beings have five senses, two of which allow them to recognize and perceive objects: sight and touch. This makes immediately clear that touch is the only way to "replace" sight.

This argument is strong but thorny at the same time, as it collides with the theme of heritage protection. Therefore, it will be necessary to distinguish what would not suffer any damage from the objects for which the enforcement of the "do not touch" rule is instead rightful. These objects can still be reproduced with tactile copies [6: p. 78]. Furthermore, touch is also able to exclusively capture many interesting qualities of objects and places. When someone touches something, one can perceive its shape, temperature, consistency, softness, roughness and many other sensations that could not be understood with other senses. This is not only valid only for the blind, but also for people with no visual handicap, who have already forgotten the tactile approach in the relationship with things, and do not understand its wonderful resources [6]. Therefore, in order to remove these sensorial barriers, all museums and sites should make possible for visitors to handle real objects and finds, but also reproductions, tactile maps, braille tags and bas-reliefs.

The problems related to people with hearing impairments are equally important. Unfortunately, this issue is still poorly addressed despite the difficulties that can occur during a visit. Furthermore, deafness is not clearly visible like other disabilities, and this means that they often go unnoticed and that their needs are neglected. The deaf people do not have access to the audio guides, they cannot use the normal guided tours and, when a guide who knows the sign language is present, they must remain particularly focused on the explanation, losing the opportunity to enjoy the view of the artworks and the sites. In order to break down these barriers, solutions able to guarantee

an independent visit for deaf people should be found, such as panels, cards and captions that explain the finds with particularly accurate texts, but above all "video-guides", i.e. videos that illustrate, through sign language and subtitles, cultural sites and historical and artistic works [14].

Also, another important sense is the sense of smell, often ignored and forgotten, which represents the first filter between mankind and the outside world and is considered the most spontaneous of the five senses. The sense of smell creates in our minds the most immediate and profound impression of places and things, and contributes to creating an immersive and totalizing environment, capable to create an emotionally original experience [13: p. 2]. The potential of this sense is still underestimated and ignored today. Only in some, mostly temporary, exhibitions, the aesthetic aspect has been enriched with smells and perfumes, capable of creating engaging atmospheres, releasing memories and creating appeal.

Also, we have to remember that, in addition to the sensory barriers, there are many other problems indirectly related to the world of sensory (i.e. autism, daltonism, etc.) [15], and, in conclusion, we can say that if all the senses were treated with the same importance, the lack of one of them would not definitively preclude access to cultural heritage.

The MAV (Virtual Archaeological Museum) of Ercolano is one of the first cases in Italy that combine multisensory with the accessibility of cultural heritage.

The MAV represents a modern, technological and digital "smart museum" with over seventy multimedia installations which, through scenographic reconstructions, holograms and visual interfaces, produce a virtual and interactive path that is a journey back in time [16].

The "In all senses" project of 2018 and 2019 has the task to combine the advantages offered by new technologies with the potential of multisensory, offering an engaging and, above all, original cognitive experience, and removing the sensorial barriers that characterize these sites.

The aim is to guarantee sensory knowledge to "live" Pompeii and Ercolano in a dimension never done before, capable of actively involving the five senses. In addition to "seeing", it will be possible to "listen", through the virtual guides stories of Pompeii and Ercolano and thanks to the audio speakers placed along the way, simulating the voices of the people, the city's ancient noises and even the flow of water to the *calidarium*'s pool. It will be possible to "touch" through interactive devices, such as large touch screens, which give the visitor the opportunity to "clean" the walls from the ash, personally rediscovering the ancient frescoes (Fig. 5).



Fig. 5. MAV Ercolano. Thanks to large touch screens, visitors discover the frescoes by "cleaning" the walls from the ash. (https://www.pompei.it/scavi-ercolano/mav.htm)

The sense of smell will be involved thanks to special perfume machines, managed by software capable of reconstructing and emanating the characteristic essences of the sites, in particular the scents of the gardens, the ancient smells of the peristyle of the villas, typical of the Roman house, and the scent of rose petals that inebriates the rooms of the *calidarium*.

Finally, it will be possible to "taste" thanks to the workshops dedicated to the nutrition history of the ancient Rome [17].

The visit ends with the reconstruction of the eruption of Vesuvius that destroyed these cities, with a spectacular 5D projection, also created thanks to sophisticated immersive systems, which involves visitors with sound effects, vibrations, flashes and lights in an enveloping experience very different from the classic three-dimensional visualizations.

2.4 Alternative Accessibility

As said before, physical, cognitive and sensorial accessibility have a great importance for the enhancement of cultural heritage. But accessibility is not always fully achievable, especially in cases where it is necessary to combine the practical reasons of contemporary use with those of conservation and protection of cultural heritage [18].

The limits that prevent complete physical accessibility are due to various factors, including, in particular, morphology of the sites and architectural and spatial characteristics of the buildings [19: p. 1256].

To the numerous limits due to the physical-constructive characteristics of the sites must be added the problems related to conservation, since in some cases physical accessibility could represent a danger for the protection of certain cultural heritage.

Where the physical accessibility is not allowed or prosecutable, other forms of usability must be provided, to overcome architectural barriers in an alternative way, i.e. by offering the possibility to virtually visit these sites using new digital technologies [7]. These modern technologies also have many other potentials, such as the possibility of "seeing" beyond the state of fact, making possible to show the history of buildings and settlements as a real time machine, describing chronologically and culturally distant situations [8: p. 411].

Furthermore, digital environments offer a fruition in a contemporary interactive and captivating key, capable of evoking great interest in visitors, particularly in the new generations, proving a powerful means capable to approach and, therefore, to educate population to culture. In this way, alternative accessibility, in addition to the overcoming of the limits of physical accessibility, integrates and enhances the cognitive and sensorial accessibility, guaranteeing a free and expanded use of cultural heritage, and

configuring itself as a tool capable to "rejuvenate" the enhancement system, bringing it to move with the times [20: p. 65].

The main technologies able to meet these needs are: Augmented Reality, where the normal reality perceived by our senses is superimposed with artificial and virtual information; Virtual Reality, which generates virtual spaces within which the user can move freely, thanks to special VR viewers; and, at last, the Automatic Recognition Systems which, thanks to simple two-dimensional barcodes readable through the tablet and smartphone camera, allow to view in-depth and easily updated information.

Favouring alternative accessibility was the enhancement strategy of the Faragola site, where, in 2003, the University of Foggia unearthed an extensive and articulated rural settlement from the Roman and late Antiquity time.

The research process ended with the creation of the Time Machine, a complex prototype that involved a group of experts from different sectors, who dedicated themselves to carrying out specific tasks: drafting documents; digital documentation; creation of models in computer graphics; concept creation and project management [21]. The goal was to narrate the entire life of the site from the origins, creating imaginary dimensions capable to provide information that could not have been understood in the state of fact. The Time Machine, thanks to the powerful 3D modelling and virtual reality technologies, offers the opportunity to virtually visit the site, moving freely in the various environments and moving through time, experiencing the various life stages of the site and discovering the enormous changes that a multi-layered archaeological site has undergone throughout history [8] (Fig. 6).



Fig. 6. Time Machine for the site of Faragola. Virtual visit of the Villa in the 400 A.D. [21].

2.5 Visibility Catalysts

As said before, technology, through modern digital tools, is contributing to the enhancement of cultural heritage, integrating physical accessibility, strengthening cognitive accessibility and offering innovative, increasingly immersive and engaging experiences to visitors. Technology makes another important tool available to cultural sites, the Digital Environments, useful to spread knowledge of heritage through the Internet. These environments represent real visibility catalysts, capable to reach a wide and heterogeneous public.

Visibility, still underestimated by most cultural organizations, represents one of the most important aspects for the enhancement of heritage, as it is closely linked to cultural activities and tourism. Poor visibility means poor accessibility and usability, as users who seek information remotely will never express a cultural demand about

certain tourist destinations if those destinations are unable to "get to them". Digital environments can therefore play an incisive role in promoting and extending the cultural offer, ensuring an international visibility of the heritage. The ones that best meet this need are certainly the websites, followed by social media and video games, which represent the new frontier of digital communication at the service of culture.

The websites offer the opportunity to discover the cultural realities of the area and represent an important support for the organization of a possible visit. This aspect is remarkably important, as users increasingly tend to plan their visits in advance, for example according to their time available. Programming can even become indispensable for people with special needs, such as the people with a disability, the elderly and families with children, who hardly visit a site without having first acquired some information about its characteristics and the difficulties that could be encountered. The websites must provide detailed and exhaustive information of two different types: the cultural characteristics of the place and the general characteristics on the organization and management of the visit, as well as the conditions of accessibility and usability of the site [10: p. 450].

Planning the visit is therefore the main function of a website, but not the only one. Photos, videos and, in particular, virtual tours, increasingly popular in cultural web portals, offer a stimulating anticipation of the visit, aimed to increase the interest, and give the opportunity to virtually visit the site for people who, for various reasons, cannot do it physically, contributing in an alternative way to its enhancement [22].

Another important digital environment is represented by social media, considered "dynamic sites", as they allow continuous interaction between network and users, who can comment, write articles, upload images and more. Thanks to them, the "one to many" monologue of web 1.0 has been replaced by a "many to many" dialogue typical of web 2.0. These platforms are also widespread, thanks above all to the mobile web and smartphones, with which users are connected practically 24 h on social networks [23]. These characteristics have attracted the curiosity and interest of cultural institutions, which begin to feel the need to "be social". Thanks to social media, cultural sites have the opportunity to share their most interesting, creative and up-to-date content online. At the same time, users can participate, comment and even create content, interacting with the cultural institutions of which they are supporters [24].

In 2016, the MiBACT recognized cultural value to a new digital environment: video games. Furthermore, the EU Decision, about the European Year of Heritage 2018 in May 2017, contains a strong reference to the need for a greater connection between the artistic heritage and the younger generations [25: p. 11]. It is therefore essential to reflect on the relationship between video games and learning experiences related to art and culture. Video games can become an excellent tool for the enhancement and dissemination of our immense historical and cultural heritage, as they combine playful intent and didactic intent, and allow to get there easily to new generations.

From this point of view, a particularly interesting case is the famous video game Assassin's Creed, which gave the places where it was set, for example in Monteriggioni (Italy), a remarkable visibility, superior to what any promotional activity could guarantee. The number of tourists, mainly young people, who arrive every year in Monteriggioni from all over the world, attracted exclusively by the suggestions created by the video game, is surprising. A new form of tourism was born, defined as "Game

Tourism" or "Videogame Tourism", which prompts players from all over the world to go to the places where their favourite games have been set. The potential of this phenomenon must be immediately understood and made an integral part of tourism strategies at national and local level. One of the few cultural realities that has seized this occasion is the National Archaeological Museum of Naples, with the video game "Father and son", made with the specific aim to make the heritage of Naples known to the whole world [26].

#MuseoWeek is one of the first projects that sees art and social networks as protagonists, with the aim to sensitize the public to art. This initiative, launched in 2014, in the days from 24 to 30 March, has scheduled the "Week of European Museums", during which museum institutions and users will meet virtually on twitter.

The intent was to exploit the ability of social networks to act as a direct link between users and institutions, offering special access to thousands of museums and galleries and starting up interesting debates on culture. People who have visited at least one museum during this week is invited to share their experience on social media, expressing their opinions, so that they can compare themselves with other users and especially with the staff of the institutions. The museums social media managers therefore had the task to manage the initiative by interacting with users and with museums across Europe.

The week was divided into several themed days, with the aim to direct and guide the various conversations on specific topics, proposing a different hashtag every day: #DayInTheLife, #MuseumMastermind, #MuseumMemories, #BehindTheArt, #AskTheCurator, #MuseumSelfies and finally #GetCreative, which closed this week inviting culture fans to imagine and describe their ideal museum [27].

With 104 thousand tweets analysed, tweeted by almost 58 thousand users, #MuseumWeek has been able to connect the public with museum institutions, artworks, history and science, in an engaging and interactive way. An unexpected international success, which has encouraged to repeat the event also in the following years. The #MuseumWeek is progressively growing year after year. The event has therefore evolved considerably over time, always maintaining the same great goal, to make culture available to everyone and to offer art lovers additional reasons to visit their favourite collections [28].

3 Access to Use: Proposals to Improve the Physical and Cognitive Accessibility for the Nuragic Sanctuary of Santa Vittoria di Serri

The Nuragic Sanctuary of Santa Vittoria is located on the western end of the Giara di Serri, in Sardinia, in a point of wide visual domain. Serri has a great cultural heritage with evidence dating back to the Nuragic Civilization (18th–3rd century B.C.), of which the main expression is the Sanctuary of Santa Vittoria [29: p. 292]. The elements that attest its importance are manifold: the extraordinary location; the large extension, fully protected in accordance with the Italian Heritage Protection Law, equal to about 22 hectares, of which currently only 3.5 are excavated and can be visited; the quantity and

type of religious buildings, a sort of anthology of the sacred architecture of Nuragic Sardinia; the exceptional nature of the archaeological finds; the continuity of the cult during the historical periods, testified both by the finds and by the reuse of the structures [30]. From an architectural point of view, the Sanctuary presents all the main characteristics of the sanctuary areas: the presence of circular structures with seats better defined as "Meeting huts"; templar areas used for water worship; differentiation and variety of architectures present in the sanctuary complex; presence of collective structures such as rotundas, stepped basins and squares [29: p. 276]. This Sanctuary was discovered by the archaeologist Taramelli A. in 1907, and the first excavation was started two years later in 1909 [31: p. 14]. The numerous studies on the discovery of the site, published in the first thirty years of the 1900s, allowed the world to know this archaeological site, which soon became a particularly attractive place for scholars and enthusiasts, who came from all over the world to admire the archaeological remains brought to light after millennia. This moment of splendour was followed by a long period of "abandonment" from the point of view both of accessibility and of enhancement, marking a setback in the site growth. For several decades the Sanctuary counted a negligible number of visitors compared to its potential. This shows that the extraordinary nature of a site emerges only if accompanied by the right enhancement actions, capable to attract the greatest number of visitors, and good usability, aimed to respond to the needs of an expanded user.

Archive research, site inspections carried out at different times of the year and interviews addressed to site users, have allowed to understand the main accessibility problems of the area. One of the most evident is the entrance building, that cannot guarantee the necessary reception functions in this site. Also, the paths are made with a stone ballast recently covered with a compacted ground finish. These routes present evident problems in terms of physical accessibility: excessive lengths, difference in height, uneven surfaces, absence of rest areas and shelters.

Another problem is the directional signs, which are fundamental for the usability of the sites, particularly in large archaeological areas, but in Santa Vittoria are deficient and inadequate, so that they compromise the visitor orientation. Also, the information panels are excessive, causing a dispersion of information, making the site difficult to read and understand. This aspect is aggravated by the fact that panels are not arranged along the visit route, but near the structures, often resulting unreachable.

The poor physical-cognitive accessibility of the Sanctuary does not allow the visitor to live and fully understand the nature of the site. There is a poor perception of the place, which does not allow archaeological remains, naturally elusive, to communicate and transmit intelligible information. This shows how the enhancement of the site requires a much broader perspective, which integrates the tools of research and archaeological conservation with those of the architectural project, giving this term the broader meanings that it underlies. The question on which architecture is called to answer is that of the interpretation/presentation of the site to visitors, to which is added the fundamental aspect concerning the intervention quality [32, 33].

Starting from this assumption, an attempt was made to study a series of mediation systems, aimed to solve the main problems of the case study, but which can be extended to similar cases, resulting useful and valid for a broader number of sites.

Near the entrance to the archaeological area, a compacted ground square has been designed, which integrates with the territorial context ensuring a homogeneous surface that can be easily walked. In the square there is the new entrance building, consisting of a semi hypogeum architecture, in continuity with the territory, which integrates with the landscape by exploiting the particularity of the topography. The roof of the new building, consisting of a narrow and long plate, becomes a square conceived as a panoramic viewpoint, from which visitors can scan into the ruins in the distance, establishing a first contact with them. The large plate is holed by the ramp which allows access to the internal rooms, positioned at a lower level of the countryside. These environments are delimited by a pure transparent volume, which helps to limit the visual impact of the architecture and guarantees the visual continuity of the landscape. Inside it houses the reception services at the Sanctuary and a large room that has the function of transmitting to the visitor all the information necessary to understand the site, enhancing the visit experience thanks to three-dimensional reproductions of the most important finds found on the site and through interactive systems capable of transmitting all the information necessary to prepare people for the visit, creating a combination of indirect devices and direct knowledge of the archaeological remains (Fig. 7).

In reference to the principle, one could also mention the fact that architecture, as always, maintains its organizing aptitude, with which it confronts itself, revealing the opportunities of the site and the comprehension of places. Indeed, in this case, the building is partially underground not to express the reasons for its "camouflage", but rather to show the visitor that one of the greatest preciousness of the context lies in the ability to dig deep into the ground, as happened, for example, for the holy well of Santa Vittoria. In this sense, the water line is not only a clear reference to the context, but it is also an element able to physically and emotionally guide the visitor.

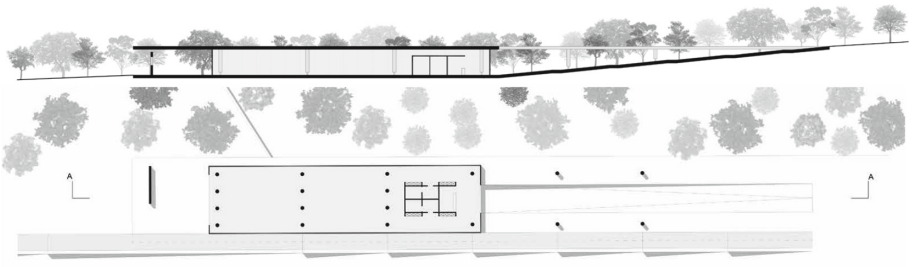

Fig. 7. Project for the new entrance building to the Sanctuary (Architectures for archaeology. Studies for physical and cognitive accessibility for the Sanctuary of Santa Vittoria di Serri. Master degree thesis by Mattia Cogoni)

The Sanctuary paths that guide visitors from the new building to the nuragic architectures, built in compacted ground, have been hierarchized taking into account the visitors flow and the impact of the intervention. There are: a "main path", which from the entrance square leads to the western area of the site; "visit routes", which lead

to the main areas of the Sanctuary; “footpaths”, which from the visit path lead to the various nuragic architectures. There are connecting ramps with adjustable feet, in order to solve critical points. All paths are equipped with guide curbs that allow blind people to visit autonomously and where necessary they take on the double function of system holder curb, which allows to equip the entire area reducing the impact of the intervention.

All the intersection between paths have a tactile paving made with the use of cobblestones, which characterizes the area and also helps blind people to perceive the intersection. These points are also equipped with directional signs, which indicate to the visitor the area accessible from any direction and the length of the respective path, always ensuring orientation. At the ends of the paths, near the architectures, there is an area for tourists involved in a guided tour, in which there is an information panel that contains information designed to ensure maximum understanding of the archaeological remains for all users (Fig. 8).

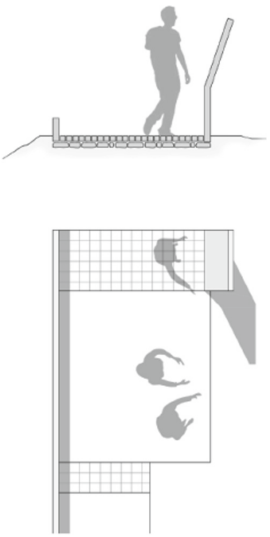

Fig. 8. Project for information and rest areas to welcome tourists during the guided tour.

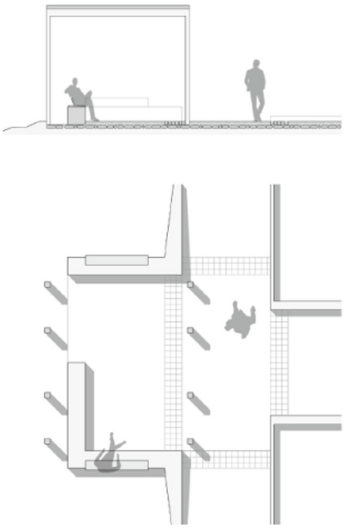

Fig. 9. Project of shelter for rest areas. (Architectures for archaeology. Studies for physical and cognitive accessibility for the Sanctuary of Santa Vittoria di Serri. Master degree thesis by Mattia Cogoni)

Along the paths there are several rest areas, which allow visitors to rest, enjoying the shade offered by the area vegetation. Also, in this case there is the tactile paving that characterizes the area and helps blind people to perceive its presence. Finally, at the intersection between the main path and the visit path, which represents the midpoint of the site, there is a pergola that incorporates the shapes and horizontality of the entrance building. This volume represents the “entrance door” of the western area of the Sanctuary and offers a shelter for visitors (Fig. 9).

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