

Rediscovering Pantelleria beyond the sea

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Fig. 1 Geographical location of Pantelleria.
Source: Google Earth

Introduction

Pantelleria between tourism and cultural heritage

The development of this project was driven by reflection on the cultural and iconographic heritage of Pantelleria. The island is located in the middle of the Strait of Sicily in the Mediterranean, just 37 nautical miles away from the African coast and 47 miles from Sicily. Its surface is 83 square kilometres. (Fig. 1)

Pantelleria is the emerged part of a volcanic structure, rising 2,000 metres above the ocean's crust, oriented NW-SE, following the rift valley in the channel of Sicily.¹ Citing Vincenzo Tusa, 'It would seem trivial but the understanding of the history of Pantelleria is not possible without the clear configuration and understanding of its intermediate geographical location between East and West and North and South'.²

¹ *Pantelleria*, Comune di Pantelleria assessorato al turismo.

² S. Tusa, *Pantelleria. I ritratti imperiali tra storia e archeologia*, Palermo 2004, 17.

All these factors contribute to the creation of an aura of mystery which surrounds the island, a world in itself, a microcosm of souls and homes.³ Thanks to its evocative and diverse volcanic landscapes, *insula una facies mille*,⁴ and beautiful sea, Pantelleria represents one of the most popular destinations for summer vacation in Italy. This comes at a price: irresponsible tourism has led to exploitation of the island and pollution. In order to preserve the archaeological and natural treasures of the island, it was declared a National Park in 2016.⁵ Unfortunately, this measure did not serve the purpose of encouraging a more responsible approach to tourism.

Aims and desiderata of the project

One of the ICOM code of ethics principles says: 'Museums have an important duty to develop their educational role and attract wider audiences from the community, locality, or group they serve. Interaction with the constituent community and promotion of their heritage is an integral part of the educational role of the museum'.⁶

The fundamental idea is the realization of a virtual exhibition in order to enhance the fruition of the intangible and iconographic heritage of the island. The desired goal was to create, using storytelling and animations of some of the most iconic symbols of the island, an appealing application that is able to entertain and at the same time educate the public. On this matter, Nouredine Elmquaddem notes in his study:

Among the works done so far on how advanced technologies can be harnessed to enrich teaching, many see AR as an effective tool. Numerous studies have revealed the positive effect of VR on the learning process. This technology makes it possible to interact with objects that belong to the virtual or real world, to learn through experimentation, participation and interactivity, to increase motivation and attention of the learner. Learning becomes more enjoyable and effective, even when it comes to exploring and knowing abstract concepts or complex phenomena, and this thanks to the possibilities of visualization and realization of the concepts that this technology makes accessible to the learner.⁷

And:

The areas of application of AR affect entertainment (including video games) as well tourism, architecture, medicine, education, industry. [...] In the cultural field, augmented reality applications allow tourists or museum

³ G. D'Aietti - G. Cucci, *Pantelleria il continente tascabile*, Trapani 2015., 6: 'quest'isola rimane un mondo a sé, un microcosmo di anime e di case'.

⁴ A. D'Aietti, *Il libro dell'Isola di Pantelleria*, Roma 1978, 26.

⁵ https://it.wikipedia.org/wiki/Pantelleria#Monumenti_e_luoghi_d'interesse

⁶ International Council of Museums, *ICOM code of ethics for museums*, Paris 2017, 25.

⁷ N. Elmquaddem, 'Augmented Reality and Virtual Reality in Education. Myth or Reality?' in *International Journal of Emerging Technologies in Learning (IJET)*, 03: 2019, pp. 234-242.

<https://doi.org/10.3991/ijet.v14i03.9289>, 238.

visitors to discover the history of places or works by simply pointing the camera of their smartphone in their direction.⁸

Target users

The experience is designed to be addressed to a diverse audience of different ages. The use of technologies integrated in a catching storytelling and animations serve the purpose of educating and entertaining a public of all different ages. It is not devised and developed to be enjoyed by a single age group. Under the light of the application seen as promotional of the island, the effort was put on highlighting the importance of an underrated and underrepresented archaeological site with the desire to obtain a reflection in the user experience and finally go towards a more conscious tourism in the island. Following Dean's categorization of museum visitors,⁹ it is possible to affirm that the exhibition is primarily addressed to 'people who stroll'. However, the exhibition is thought to result enjoyable also for other categories of visitors, such as 'people who study'. Thus, even if the experience was designed for an audience of tourists, it could still be enjoyed by a public of locals.

Location and institutions involved

To achieve a wider public and to maintain the close relation between the museum and the island, the decision was made to create an exhibition using panels and augmented reality. The chosen location where to place the exposition is the Barbacane Castle inside the city centre, the reason for this choice is the great visibility of the building, which is the heart of the city centre of Pantelleria. Other than that, the castle represents a place of historic and cultural importance as well as a place that is easy to reach. Finally, the castle is the location where some of the most iconic archaeological findings are stored: the imperial portraits.

In addition, considering the target user and the tourist ensemble of the island, the exhibition would be organised as a seasonal exhibition. Acknowledging the fact that the tourism season lasts from May to September, it was decided to initially launch the exhibition as a seasonal one. Moreover, accordingly to the placement of the archaeological findings inside the castle (the Imperial portraits) and according to the chosen season, it was decided to place our exhibition in the inner yard of the castle. At the end of the season, the collected feedback will be examined and eventually the exhibition will be adjusted to the users' suggestions.

The purpose and location of our project requires the involvement of some institutions. In detail: the tourism department of Pantelleria municipality; the Park Authority, the Superintendence of Cultural Heritage of Trapani and the Cultural Heritage department of Sicily.

⁸ N. Elmqaddem, 'Augmented Reality and Virtual Reality in Education. Myth or Reality?' in *International Journal of Emerging Technologies in Learning (IJET)*, 03: 2019, pp. 234-242. <https://doi.org/10.3991/ijet.v14i03.9289>, 239.

⁹ S. Caraceni, *Designing a taxonomy for virtual museums for the use of avicom professionals*, Plymouth University 2015. <https://pearl.plymouth.ac.uk>, 165-166.

Archaeological background

A brief history of the archaeological presence in the island

Pantelleria from the very first sight appears to be a melting pot of different cultures. The landscapes are the result of the various dominations which came in succession century after century. It is possible to spot the Arabic heritage in the shape of the houses, the typical *dammuso*. (Figs 2–3) The construction techniques of a *dammuso* are passed down as a tradition from generation to generation, and in the names of the city quarters (*contrade*) all containing Arabic sounds and words of Arabic meanings (e.g. Kamma, Rakale, Sibà). The cultural proximity to Sicily is found in the traces of the Norman period, in particular the actual shape of Barbacane castle, and in the so-called wine culture (the set of activity related to the production of wine starting from the care of vines) which is visible in the vast areas dedicated to the cultivation of vines (*foto viti*). A trained eye is required to see the remains of a distant past, the rich archaeological heritage of the island which is totally blended into the landscape. But to unfold the mystery of Pantelleria, it is necessary to delve into the village of the first inhabitants of the island: the *sesiotti* population and to take a closer look at one of the main archaeological areas of the island: the Acropolis of San Marco and Santa Teresa.



Fig. 2 Dammuso in the countryside.
Source: Alessia Farina, *Appunti di architettura: Pantelleria*, Culture Libreria Informatica Editore, 76



Ogni dammuso, si integra perfettamente nel paesaggio naturale

Fig. 3 Watercolour painting of a dammuso. Source: Alessia Farina, *Appunti di architettura: Pantelleria*, Culture Libreria Informatica Editore, 59

Eneolithic village of Mursia: the sesiotti population

The village of Mursia, the only prehistoric village preserved on the island, stands on a promontory on the western coast,¹⁰ between Cala dell'Alca and Cala di Modica. (Figs 4–5) The presence in one of the few landfalls of the island and mostly of one of

¹⁰ Eneolithic remains were also found in the Lake Mirror of Venus area.

the extremely rare sources of brackish water made Mursia the perfect location for human settlement.¹¹

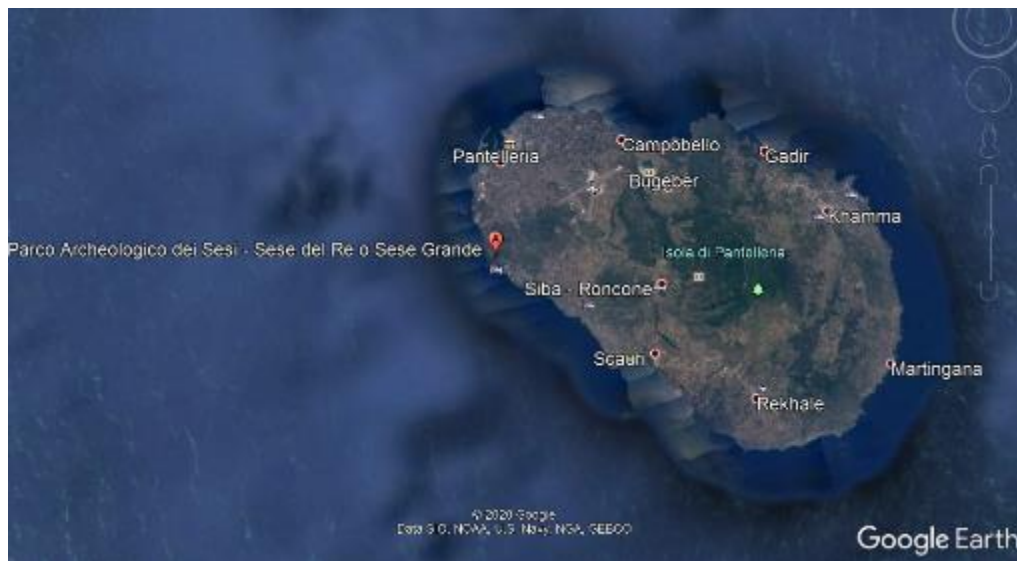


Fig. 4 Geographical location of the Eneolithic village of Mursia. Source: Google Earth



Fig. 5 Cala dall'Alca view from the Eneolithic village of Mursia. Source: photograph by Amanda Culoma

The whole area of the village is 40–50 metres wide and 150 metres in length, surrounded by a colossal defensive wall called the *'Muro Alto'*. Near the village, just outside the defensive wall, stands the other point of interest of the area, the Necropolis characterized by majestic funeral monuments called *'sesi'*. The *sesi* are circular truncated cone structures, built using megalithic techniques and decorated

¹¹ B. Wilkens, 'La fauna dell'età del bronzo di Mursia. Nota preliminare', *Atti della Società Toscana di Scienze Naturali, Serie A*, 94 1987, 215–224

with huge blocks. They are sack-shaped inside and made of various stones: one or more galleries lead to the circular funeral cells. The most important of these monuments is called 'Sese Grande' or 'Sese del Re'. It is about 10 by 20 metres wide and there are 13 small galleries inside, the longest of which is 7 metres long.¹² There is little known about the inhabitants of the village; their name derives from archaic Pantellerian dialect: *sese* means pile of stones.¹³ The origin of the *sesiotti* people is uncertain, as well as the date in which they arrived on the island, probably around the XVIII century BC. The information about the *sesiotti* people, except for the funeral rituals, comes from the archaeological findings in the area inside the 'Muro Alto', in particular in the huts forming the housing complex. The huts were oval shaped, built with dry stone techniques, usually divided by a small wall. (Figs 7–8) The most used material for tools was obsidian.

The economy of the village was based on sheep and goat breeding, mainly sheep, suitable for the Mediterranean scrub and the dry weather of Pantelleria. The other main activity, related to the sea, was fishing.

This area has a central role in the project for two reasons. On the one hand, for the historical importance of the village, on the other hand, it is one of the areas which is suffering the most neglect by authorities and the population.

Il "cumulo"
I Sesi: tombe neolitiche

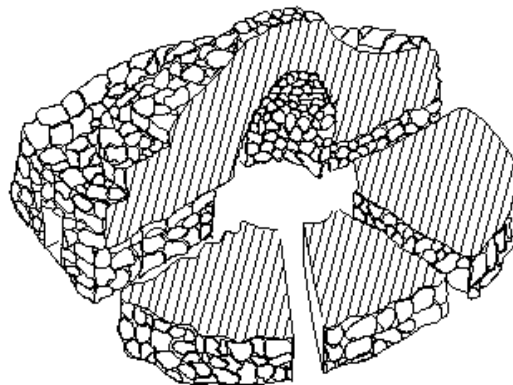


Fig. 6 Cutaway perspective of a sese. Source: A. Farina, Appunti di architettura: Pantelleria, Pantelleria 2003., 47

¹² *Pantelleria*, Comune di Pantelleria assessorato al turismo.

¹³ A. D'Aiotti, *Il libro dell'Isola di Pantelleria*, Roma 1978.



Fig. 13. Documentazione grafica della capanna B4. Per acquisire i dati sul campo ed elaborare il modello si sono impiegati circa 1995 nis.

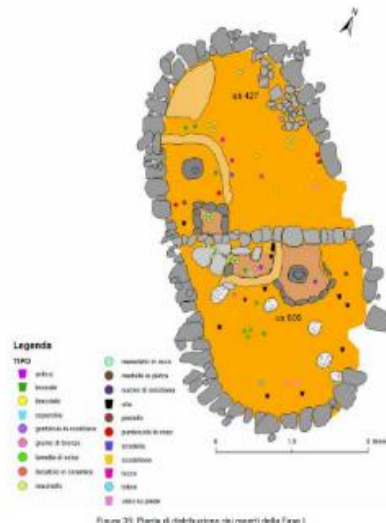


Figura 35. Pianta di distribuzione dei reperti della Fase I.

Fig.7 Hut B4. Source: S. Marcucci, 'La capanna B6 dell' abitato dell'antica età del bronzo di Mursia(Pantelleria-TP) e le strutture produttive domestiche' in *Ipotesi di preistoria*, 2010 ISSN 1974-7985, 134

Fig. 8 Hut B6. Source:S. Marcucci, 'La capanna B6 dell' abitato dell'antica età del bronzo di Mursia(Pantelleria-TP) e le strutture produttive domestiche' in *Ipotesi di preistoria*, 2010 ISSN 1974-7985, 146

Acropolis of San Marco and Santa Chiara: the imperial portraits

Located in the Northwest, in the hinterland of the island stands the most famous and prolific Archaeological site of Pantelleria: the Acropolis of San Marco and Santa Teresa. The whole site extends over the two hills called San Marco and Santa Teresa. After the mysterious disappearance of the *sesiote people*, whose civilisation collapsed by the end of the second millennium BC, the island was uninhabited for almost five centuries. After almost five centuries of which there is no evidence all around the island, a new civilisation came. The Phoenician arrived in the ninth century BC. In the first period they used the island as a post of call, then with the growing importance of the new administrative centre, Carthage; Pantelleria became a self-governing city-state. The capital was on the rises of San Marco and Santa Teresa. The traces of the extraordinary wall defending the Acropolis and ruins of religious buildings are still visible today. The Phoenician domination lasted until the end of the third century BC. The expansionist trade policy led by the Phoenician-Punic, based on a dominion of the sea, soon clashed with Rome. Carthage was destroyed in 146 BC by the Romans. Pantelleria was definitively conquered by Rome at the beginning of the second Punic war (217 BC).¹⁴ The Romans occupied it, keeping its pre-existent social and religious organisation unchanged. As a matter of fact, they maintained the capital in the rises of San Marco and Santa Teresa, and the religious continuity is evidenced by the presence of the figure of Tanit on the Roman coins

¹⁴ S. Mantellini, 'The implications of water storage for human settlement in Mediterranean waterless islands: The example of Pantelleria', in *Environmental Archaeology*, 20:4 2015, DOI: 10.1179/1749631415Y.0000000005.

found on the island. A coin shows a woman portrait which was proposed as Tanit. Yet there is no proof of an actual connection to the goddess. (The Roman issue uses the same coin [of the Phoenicians] and bears the symbol of the Goddess Tanit, but it replaces the inscription).¹⁵ The Roman mint retrieved some symbols (as the horse) from the Punic models; also, the woman's face could be found on Phoenician coins but it is not sure that she is Tanit. She may be Astarte as it is possible to find it also in context where there is no information about Tanit.

The Acropolis of San Marco and Santa Teresa stands as a symbol of cultural stratification of the island, embodiment of the melting pot of cultures whose footprints blended to the landscapes and made Pantelleria as it is today. The Acropolis is the heart of the Archaeological side of Pantelleria, and the place of discovery of some of the most iconic archaeological findings on the island: the imperial portraits.

Beyond the tangible: intangible and iconographic heritage of the island

In order to accomplish the difficult task of representing customs and traditions of Pantelleria, to understand and to know the history of the past inhabitants of the island is indispensable.

This is the only path to follow to explain the emotional attachment of Pantelleria people, the *panteschi*, to the black stone of the island, the obsidian. It is the symbol of the volcanic past of their land, a representation of the volcanic flows which shaped the landscapes of the island as well as the souls of its inhabitants.

In the deep connection of the inhabitants of the island with the natural environment it is possible to find the key to understand their visceral commitment to the figure of the mother Goddess which in the Punic period was connected (with the *interpretatio*) to that of the goddess Tanit. Firstly, it arrived on the island with the Phoenicians and penetrated so deep into the religion of the place that it was maintained during the Roman domination, the symbol of Tanit was found in the coins of Roman coinage and it is still perceived as a symbol of the island. Together with the Goddess Tanit, the Phoenicians introduced another essential part of the heritage of the island: wine culture.

The concept behind the virtual museum: a taxonomy

How can the concept of *virtual museum* be delineated? It is not an easy definition, and scholars have been debating about it for decades. The creators of this project have decided to rely on the definition provided by ICOM in 2010:

We must remember that 'virtual' is not the opposite of 'real', as we tend to believe too readily, but rather the opposite of 'actual' in its original sense of 'now existing'. [...] In this sense the virtual museum can be seen as all the museums conceivable, or all the conceivable solutions applied to the problems answered by traditional museums. Thus the virtual museum can be defined as a 'concept which globally identified the problem areas of the museal field, that is to say the effects of the process of decontextualization/

¹⁵ *Pantelleria*, Comune di Pantelleria assessorato al turismo, 69.

recontextualization; a collection of substitutes can be a virtual museum just as much as a computerised data base; [...] The virtual museum is the package of solutions that may be applied to museum problems.¹⁶

Our virtual exposition falls in the category C defined by Simona Caraceni in her *Designing a Taxonomy for Virtual Museums for the Use of Avicom Professionals*:

Virtual museum enhancing museum EXHIBITIONS with OPEN INTERACTION in a CLOSED SPACE showing SELECTED OBJECTS from the museum collection, NOT allowing visitor CONTRIBUTIONS.

The implications of this taxonomy applied to the case of the project are summarised in the following table:

Pantelleria Beyond the Sea	
Need	Exhibition that enhances rediscovery of heritage
Example	Interactive experience (gesture and touch based, VR, AR) inside the museum
Technology	AR application for mobile
Content	Text, audio, images, animations, 3D objects and reconstructions
Virtual/Real	Real with virtual

¹⁶ A. Desvallées, F. Mairesse, eds, *Key Concepts of Museology*, Paris 2010, 59–60.

Visitor Experience	'Wondrous', both for the casual and for the greedy visitor
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In detail:

- The **need** for our Virtual Exposition is to revitalize some cultural aspects of the island. The chosen medium is that of an exhibition created ad hoc for the occasion, enriched by technology.
- The **technology** is represented by an augmented reality app. Basically, visitors that approach the panel decide to use or not their smartphones or tablets, thus interacting with the exposition.
- The **contents** include physical panels that contain information and images of cultural objects that are inside the Castle or on the Island; in addition, there is text, audio, animations and 3D objects that enrich the experience thanks to AR.
- **Real with Virtual** is a mixing of physical exhibitions (of real objects) with interactive systems such as augmented reality in this case.
- **Visitor Experience** is thought to leave visitors in a state of wonder.

Development of the virtual application

Concept

The concept of the installation is a physical and virtual tour through the intangible and tangible cultural heritage of Pantelleria: through informative panels collocated inside the Barbacane Castle of Pantelleria, the visitor can explore the archaeological heritage of the island and deepen their knowledge about the culture of the area. Each panel contains some information about a specific topic and some graphic sections.

Through the use of a specific app downloadable to the visitor's mobile phone, the graphic sections become a 3D animated video telling the main concept of the panel selected. The narration of the cultural heritage winds through the various panels making the visitors live a unique experience through the cultural heritage of Pantelleria and provides the tools for a new awareness of the history of the island and further insights.

For the ideation of this concept, the team was inspired by two successful initiatives; the first is the video game *Father and Son*, a video game created by TuoMuseo and published by the National Archaeological Museum of Naples. An emblematic case of Italian videogame tourism, the video game is set in Naples and at the Archaeological Museum of Naples, locations that can be virtually visited by the player. Besides, through a 'check-in' mode, the game allows players to obtain

additional in-game content if they physically go to the Museum of Naples. The second example that guided the development of the narrative is certainly *'Apa alla scoperta di Bologna'*, a production that Cineca has created for Genus Bononiae, written and directed by Giosuè Boetto Cohen. It is a stereoscopic cartoon made in computer graphics on the history of Bologna, from the Etruscan age to today. The aim of the project is to allow the museum visitors to immerse themselves in the history of the city, accompanied by the guide *'Apa'*, an ancient Etruscan who has the voice of Lucio Dalla in the cartoon.

Characters



Fig. 7 The head of Caesar, Antonia Minore and Tito. Source: photographs by Grazia Cucci

The characters who guide the virtual narration through the different panels are three: the Heads of Pantelleria, the so-called Eneolithic boy and the sculpture of the goddess Tanit.

The Heads of Pantelleria are three heads of marble statues, two male and one female, dating back to the first century AD. The heads represent the Imperial portraits of Cesare, Tito and Antonia Minore. The heads were found in August 2003 by archaeology students led by the archaeologist Sebastiano Tusa, together with Thomas Schaefer from the University of Tübingen and Massimo Osanna from the University of Basilicata, engaged in the excavation campaign on Pantelleria on the hill of San Marco. The excavations, scheduled to clarify the function and the chronology of the already evident structures and provide new elements regarding the destination and organization of the urban space on the hill, gave birth to many findings, most consisting of ceramics. Among these, the three marble heads stand out, which were found inside some cisterns on the San Marco hill. The fact that they have been carefully laid (the head of Caesar, in particular, was positioned on some stones that had the task of supporting it) and the fact that in the surrounding areas bones of cattle and of a dog were found, implies a sacrificial context which precisely statues of the three exponents of the Giulio Claudia dynasty were also involved.

Beyond the conjectures on style and position, this discovery certainly certifies the great political and economic role of Pantelleria in Roman times.

Furthermore, the Heads are very important for the cultural heritage of Pantelleria and known for international fame. For these reasons, the heads are the first guides that the visitor encounters within the application.

The Eneolithic boy is an invented character, based on the real population which lived in the Mursia Village in Pantelleria. The Eneolithic boy is an eleven-year-old figure who lived between 1600 and 1200 BC, son of a fisherman and belonged to the *Sesi* population. Like any young boy, he helped parents in the village with household activities, with fishing and in the construction of weapons with obsidian.

The third guide that the visitor can meet during the virtual tour is the figure of the Goddess Tanit, which it was decided to represent not in his anthropomorphic form but through one of the sculptures on the island, in its iconographic form. Tanit, the mother goddess with Carthaginian origins, a symbol of fertility, is later in chronology compared to the *Sesioti* people but is the symbol of the island of Pantelleria and expression of the cultural heritage of the island from the Phoenician expansion to the Roman age.



Fig. 8 Figure of Tanit at the Acropolis. Source: Photograph by Amanda Culoma

Storytelling

The storytelling of the entire augmented reality installation winds through the different panels positioned in the hall of the Barbacane Castle, with the aim to make fluid the conceptual path between the archaeological and cultural heritage of Pantelleria. The installation is composed of six panels with different guides and topics:

PANEL	GUIDE CHARACTER	MAIN TOPIC
N.0		Title and instruction
N.1	the Heads of Pantelleria	Presentation about the historical attraction in Pantelleria
N.2	the Eneolithic boy	Presentation of Mursia Village and daily activities
N.3	the Eneolithic boy	fishing activity
N.4	Tanit	the cult of Tanit on the island
N.5		conclusion and touristic information

Each panel will have a similar compositional structure, which can be catching for the visitor but at the same time provide important information regarding the subject matter. Here is a simple example of the first panel.

The visitors encounter a panel at the beginning of the augmented reality exhibition. The panel gives information about how follow the installation process and download the specific application for the 3D experience. Thus, the information is also repeated in the other panels, to give the possibility to access the installation from any point of the castle.

First panel – Pantelleria beyond the sea. Discovering the island through the Roman heads' guidance. The first panel of the exhibition contains a panoramic introduction to the island of Pantelleria, from its origins and geological conformation to the most important archaeological sites. The first narrators of the exhibition are the heads, which have the task of engaging the visitor and raising his interest in learning more about the history of the island. Here are the main points of the narration of the first animation summarized in a list:

- The presentation of the Roman heads;
- What is Pantelleria: it is a volcanic island;

- Who were the inhabitants of Pantelleria: the first mysterious population of the Sesi, mysterious because its origins are unknown but could have come from the sea or from the Maghreb coasts;
- Overview of the historical attractions in Pantelleria: the *Sesi* Village; the Roman archaeological sites (not detailed in the application but can be visited); the cults and the myths about the island.



Fig. 9 Example of a panel. Source: Photoshop image by Szilvia Baráth

Since the purpose of the application is to raise awareness of Pantelleria, local or tourist, the narration has a very simple style, aimed precisely at making the visitor experience a story almost in the first person. For this, the 'guides' are animated and speak, so the attention of the visitor can be captured.

Second and third panel: the Sesi Village through the Eneolithic boy's guidance. The archaeological heritage of Pantelleria is very rich and covers several centuries: from prehistory to the Punic conquest, up to the Roman age. In this installation, the aim was to emphasize above all the first, but the proposed format can then be implemented for other themes and places of interest belonging to other eras. Panels 2 and 3, therefore, share the same theme: the Eneolithic village of Mursia, inhabited by the *Sesioti* population. Through the guiding voice of the Eneolithic boy, the boy who lived in the village, the visitor can relive two scenes of everyday life in the Bronze Age.

In the second panel, one sees the storytelling of life inside the village: how the typical *sesiota* house was built, the activity to repair the hut, the animal breeding, and the construction of weapons with obsidian, the black volcanic stone present in large quantities on the island. Also called 'the gold that comes from the sea', due to its glassy attitude, obsidian was used in prehistoric times to build cutting and hunting tools: knives, scrapers, arrowheads, and spearheads. Besides, obsidian was

also used as a trading commodity to trade with other areas in the Mediterranean Sea.



Fig. 10 Example of animation in the second panel. Source: Szilvia Baráth

The third panel, on the other hand, deals with another very important topic for the economy of the island and the survival of the villages: fishing. Through the words of the prehistoric boy, the viewer can understand how fishing was an essential activity in the life of the people in the Bronze Age and live through augmented reality images a true reconstruction of all the phases of this process and the techniques used from the *sesiotti* people.



Fig. 11 Simulation of the third panel. Source: Szilvia Baráth

The fourth panel: Goddess Tanit. The fourth panel provides for a chronological leap and a change in the narrative guide. The theme dealt with in this section is, in fact, the cult of the goddess Tanit, later as a chronological dating to the Eneolithic age, then to the period of the *Sesi* civilization, but at the same time an important and fundamental way to understand the history of the island. Tanit, the Carthaginian mother goddess, a symbol of the Moon and fertility, has been present since ancient times on the island of Pantelleria and still today in many archaeological sites it is possible to find engravings that represent her figure and that are evidence of the diffusion of the cult of the goddess.

The narration of this panel includes the following points: completing with the invitation made to the visitor to find, by visiting the various archaeological sites of the island, the symbol of the goddess: Tanit's origins and characteristics; where Tanit can be found on the island; map with some underlined point of interest: the Acropoli and the 'Lago di Venere', the archaeological site where the important Temple of Venus and place of worship of the goddess was found.

The fifth panel: Conclusion and touristic information. The last panel is the final panel of the entire exhibition: it contains an additional map, where various tourist and archaeological sites mentioned in the previous panels are indicated and the information to reach and visit them. Through the 3D vision of the augmented reality of the application activated by the marker on the photo, the visitor will be allowed to see a small 3D reconstruction of the affected area.

At the end, the visitor, by scanning a QR code with their device, will be able to connect to a platform and leave a review on the experience they have just had, adding suggestions and/or changes.



Fig. 12 Lake of Venus. Source: photograph by Amanda Culoma

Extra content: each panel includes some extra content, which can be found by more expert visitors. By positioning the panel with the dedicated application, once positioned on some smaller images, the viewer can observe through augmented reality some objects mentioned in the main storytelling, in order to enrich the experience. This content was designed especially for objects such as obsidian, weapons or structural details of the *Sesi*.

Animation

Concept and background

When designing the character of the Eneolithic boy, the guidelines offered by Bryan Tillmann in his *Creative Character Design* have been used.¹⁷ These guidelines included answering basic questions about the character, conducting research to explore the historic and cultural background, sketching based on the research, the creation of the 3D model of the character and animation. This process is an iterative process where the first three steps were guidelines for the creation of the model, however, modifications were necessary during the process. In order to present the character design in detail, each step of the process is described below.

Preliminary steps: Based on the guidelines in Tilman's *Creative Character Design*,¹⁸ the team started out by answering the most important questions that people might ask when they want to learn about the character. These questions help to understand the identity of the boy and give insight into his character that is helpful when putting the character in various scenes and poses. The questions were the following:

QUESTION	ANSWER
Who? Who is the character in question? Who are we talking about in this character summary?	A fictional boy aged 11, part of the <i>Sesioti</i> people who lived on the island of Pantelleria in the Eneolithic period.
What? What does the character do in the story?	Along with the imperial busts, he is one of the narrators of the story; he tells stories about the life of his village that is visualized in various scenes. Scene 1: He talks about the structure of his hut; Scene 2: He explains shipbuilding and fishing habits in his community.
When? When does this story take place?	The story takes place in the Eneolithic age between 1600 and 1200 BC.
Where? Where does the story take place?	The story takes place in the prehistoric Mursia village of Pantelleria where the boy lives.

¹⁷ B. Tillman, *Creative Character Design*, Oxford 2011, 29.

¹⁸ B. Tillman, *Creative Character Design*, Oxford 2011, 28.

Why? Why is the character motivated to do what he does in the story? How? How does your character do what he does?

The little boy is part of the Sesi village and acts as a person who is welcoming the visitors of the museum to his village. He is friendly and enthusiastic to tell others about his village. Since he is a child, he is very curious and eager to 'perform' in front of other people. He has a vast knowledge about fishing since his father is a fisherman. The boy is not only a link between the past and the present, but he is also a friend-figure for children to identify with.

Background study

The story takes place in a prehistoric village on the island of Pantelleria and the character is one of the *Sesioti* people who inhabited the island. There are not many resources to consult about the appearance and clothing habits of these people especially that most of the remains that exist are from the northern Alpine region,¹⁹ and the origin of *Sesioti* people is uncertain which means that they probably came from the South and might not have relations with those who lived in the Northern part of the peninsula. According to Barbara Wilkens, the *Sesioti* had cultural relations with Sicilian cultures such as the *Capo Graziano* and the *Castellucio* and later with the *Thapsos* and *Milannezze* cultures,²⁰ that could have had an effect on different parts of their lives such as clothing habits. Therefore, only those elements were included that seemed more probable or likely to have existed in that period. The lack of resources and uncertainty is surely an obstacle that prevents the creation of a character that is completely accurate historically. However, as the character is a fictional, cartoon-style character, the stylized elements do not require the amount of precision that a realistic character would.

Clothing: materials, colours, accessories. As discussed above, the lack of archaeological findings makes it difficult to decide what clothing would be suitable for the character. For this reason, the clothing of the boy is a simple tunic, which is open for modification after consultation with historians if the project is realized.

Although the material of the tunic is not visible on the stylized model, it was important to choose a material because it is reflected by the colour of the clothing. Based on the work of Marta Bazzanella,²¹ and on Elizabeth Jane Wayland Barber,²² the material of the clothing was most likely uncoloured wool, flax or hemp, hence

¹⁹ M. Bazzanella, 'TEXTILES in Italy: Neolithic and Bronze Age' in *Textiles and Textiles Production in Europe*, 2012. 10.2307/j.ctvh1djwg.14. 203.

²⁰ M. Bazzanella, 'TEXTILES in Italy: Neolithic and Bronze Age' in *Textiles and Textiles Production in Europe*, 2012. 10.2307/j.ctvh1djwg., 217.

²¹ M. Bazzanella, 'TEXTILES in Italy: Neolithic and Bronze Age' in *Textiles and Textiles Production in Europe*, 2012. 10.2307/j.ctvh1djwg.14., 205-206.

²² E. J. W. Barber, *Prehistoric Textiles: The Development of Cloth in the Neolithic and Bronze Ages with Special Reference to the Aegean*, Princeton University Press, 1991, 9-39.

the beige colour. The boy is wearing a black medal made of obsidian that symbolizes the stone's importance in the lives of the inhabitants of the island. The medal is hanging from a leather necklace made from animal skin, possibly from goat skin since goats were abundant on the island.²³

Face, body, hair and skin. The stylized character has a large head, ears, and eyes while his legs and arms are small. These proportions are often seen in children's book illustrations as well as in animated movies and series for adults, therefore all ages are familiar with it and children most probably find him cute and can identify with him. Reference images were used to decide on the proportions, I took inspiration from a catalogue created for the 2019 London Book Fair:²⁴



Fig. 13 Characters with similar body proportions. Source: Left image - illustrator: Henny Yulianti; right image- illustrator: Hutami Dwijayanti

The colour of the skin is a tan, olive-colour (Hex: #B48A78) which shows that the boy comes from a warm climate with plenty of sunlight. His hair is dark brown (Hex: #241107) which matches his skin.

Creating sketches. The third step was the first visualization of the character. It is not very detailed – apart from the face, its purpose was to provide guidelines for the proportions of the body and the facial features.



Fig. 14 Initial sketches by Szilvia Baráth

Creation of the 3-dimensional model

The last step of the character design was the creation of the 3D model of the character. Using the sketches as reference, the body was sculpted from 3D shapes in Blender 2.8. Then, sculpting the face and the hair was done. Finally, poly-building and sculpting was used to fit the clothes and the necklace on the character. They

²³ B. Wilkens, 'La fauna dell'età del bronzo di Mursia. Nota preliminare', *Atti Soc. Tosc. Sci. Nat., Mem., Serie A*, 94 1987, 221.

²⁴ Children's Book Illustrator, The National Organising Committee for Indonesia as Market Focus Country at the London Book Fair, 2019. 43-44.

were coloured in during building and texture painting was not used because of the complications of UV mapping, however, hair texture was used for the hair. The first two images below show the process of the modelling while the rendered images below show the finished character from different angles with a solid light background, using Eevee rendering and sunlight.



Fig. 15 Screenshot -Process of character design in Blender 2.83. Source: Szilvia Baráth



Fig. 16 The final 3-dimensional model of the character. Source: Szilvia Baráth

Animation

The animation includes the animation of two, completely different groups of subjects: the little boy who explains the daily life of the village and the animation of the three imperial statues. In the latter case, the three marble heads do not have a body, therefore it is only possible to animate their facial expressions as they are speaking while the boy uses body language while he is speaking to be as natural as possible. These two different subjects entail the use of differing animation techniques in Blender 2.8. For this reason, this chapter is divided into four sub-parts: first, concept of the animation of the statutes, second, the concept of the animation of the boy and the animation techniques related to the various objects. The respective techniques and methods were put together based on the recommendations of the official Blender 2.83 manual. As a general guideline for the animation of both the statues and the characters, the results, the costs, and the time requirements should be considered and the techniques that prove to be the most sufficient for all these factors should be used.

The animation of the statues

The marble imperial heads are narrators in the story which means that their facial expressions have to be animated in a way that it follows the natural flow of spoken words and that they are meaningful and correspond to the meaning of what they are saying. Moreover, the statues should not exhibit overly exaggerated emotions as they could look intimidating or comic. Since the age of the target audience of the exhibition is wide, it is essential to avoid movements that evoke these reactions in the users, especially in children. The animation of the leaders in the Civilization games could serve as a good example for natural but expressive animation of facial features.



Fig. 17 Comparison of busts from different contexts. Source: Left—Portrait Bust of Caracalla; right — Mantegna, Self-Portrait Bust; bottom — Portrait Bust of Cato 'Uticensis', G. Faigin, *The Artist's Complete Guide to Facial Expression*, New York 1990. Bust on the right:

https://artattack.fandom.com/wiki/The_Head?file=The_Head.jpg

However, it must be emphasized that since the busts are not capable of expressing body language and they do not have eyeballs, the expressiveness of the animation will be limited. This is made even more difficult by the fact that the busts

of Roman emperors were often portrayed with a scowl since this strict expression invokes a sense of authority and emphasizes the power of the emperors²⁵ as in the examples below.²⁶ On the other hand, the famous British children's show, *Art Attack*,²⁷ provides a stylized solution, which certainly makes the busts less intimidating but might prove to be too humorous.

Techniques and methods

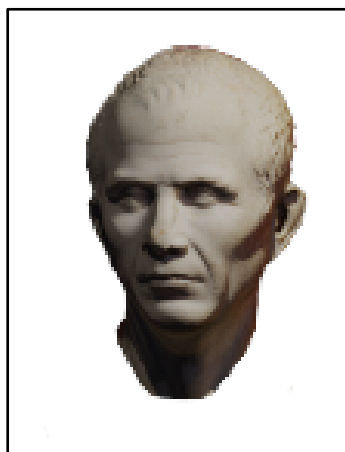


Fig. 18 Modified 3D bust of Julius Caesar. Source of the original: <https://sketchfab.com/3d-models/portrait-presume-de-jules-caesar-a34f5b3aa20a4b24a89ee2854a410ae2>

For planning the project, a free-to-use 3 dimensional mesh of another famous bust of Julius Caesar was selected. It is provided by the Musée départemental Arles under a Creative Commons licence.²⁸ The downloaded 3D object is shaded and textured, and it is ready to be animated after rigging and modifying the mesh. However, models acquired through photogrammetry would not only be better to use but it would also solve the digitization and thus, preservation of the important imperial busts in question.

As discussed in the previous section, in the case of the busts, the main subject of animation is the changing of facial expressions as the imperators speak. The developers of Blender recommend using (relative) shape keys for animating facial expressions as they deform existing shapes and thus, it is easier to control the morphing of the shapes than in the case of techniques that include scaling or rotating. Based on the guidelines provided by Gary Faigin in *The Artist's Complete Guide to Facial Expression*,²⁹ in the case of the busts, depending on the text they are saying, at least the following features should be animated in order to achieve an expressive outcome:

²⁵ FAIGIN 1990, pp. 477-478.

²⁶ Left—Portrait Bust of Caracalla; right — Mantegna, Self-Portrait Bust; bottom— Portrait Bust of Cato 'Uticensis', G. Faigin, *The Artist's Complete Guide to Facial Expression*, New York 1990. 448.

²⁷Source: https://artattack.fandom.com/wiki/The_Head?file=The_Head.jpg

²⁸ Original bust of Julius Caesar: <https://sketchfab.com/3d-models/portrait-presume-de-jules-caesar-a34f5b3aa20a4b24a89ee2854a410ae2>

²⁹ G. Faigin, *The Artist's Complete Guide to Facial Expression*, New York 1990. 125.

1. movement of the lips which is consistent to speaking,
2. smiling and laughing,
3. blinking and winking,
4. movement of eyeballs in all directions,
5. wrinkling of eyebrows.

The animation of the Eneolithic character

In the case of the little boy, facial expressions are important as well, however his face is not as detailed as that of the statues, but the process of the facial animation can be equal to the one of the statues. On the other hand, the movements of the body are a part of non-verbal communication and the arms, and the hands might be used for pointing at objects of interest, therefore it facilitates the understanding of the story and contributes to communicating the desired message successfully. The scenes in which the boy is placed also need to be animated. In this case, animation mainly revolves around the natural environment present in the scene. For instance, in the example below, which was created in Blender 2.83 using the 3D model of the character and free to use, open-source 3D objects, there are numerous possibilities for animation. These include movement of the sea and the vegetation caused by the wind and the movement of the animals.

Techniques and methods

To achieve natural-looking movements for the character, armature is commonly used in Blender for animating human movement because it acts like the human skeleton with additional rigs that move the shape similarly to a puppet. Thus, the armature allows the movement of bones and the joints with the help of the rigs. It has to be noted, however, that this is a time-consuming process, it consists of constructing a skeleton or chain of bones bone by bone and the bones have different influences and types, namely deforming and control bones that determine what kind of movement can be achieved through using them. After this, the rigs have to be linked to the object which is done through the so-called 'skinning' process which consists of two different methods, the parent/constrain object to bones or armature deform parenting modifiers. In the case of the present project, the result might be more natural by using the latter approach which entails the creation of an armature modifier. The armature will be the parent object of the child objects which will also have their own modifiers. This means that animating more subtle movements can become a possibility.

As for the environmental objects, simple movements are enough to be animated such as the turning of the heads of the animals or the movement of the waves related to the direction of the wind which, compared to the character, is a quicker and simpler process. Constraints, which work similarly to armatures, allow the animator to control different objects in an indirect way, in other words by controlling the settings of the constraints, the animator is able to influence various different targets simultaneously.



19 Visualization of one of the scenes in the app. Source: Szilvia Baráth

Physical implementation of the virtual exhibition

Why AR?

For the virtual exhibition the team wanted to create an extended reality experience (XR), 'a comprehensive term for the environments that either blend the physical with the virtual or provide fully immersive virtual experiences'.³⁰ The idea was driven by the fact that these technologies, although not new, are now receiving a lot of attention from giants like Google, Facebook and Apple. One of the reasons certainly lies in the fact that the technological advances of the last decades allow a type of use that best suits the needs of the twenty-first century user: entertainment, interactivity, participation, and manipulation of the environment. Basically, our target user. After these considerations, the implications of both virtual and augmented reality were examined:

- *augmented reality (AR)* is closely tied to the existing built space and adds digital layers or elements (in 2D or 3D) to a live view, often using only the camera on a smartphone or tablet;
- *virtual reality (VR)* on the other hand, involves the simulation of an entire space that may not even exist, allowing a more immersive experience, commonly delivered by means of a headset.

³⁰ J. O'Brien et al., 2020 *EDUCAUSE Horizon Report | Teaching and Learning Edition*, EDUCAUSE Publications, 58 (2020). Available at <https://library.educause.edu/resources/2020/3/2020-educause-horizon-report-teaching-and-learning-edition> retrieved 06 July 2020., 29.

To decide on the usage of both or only one (and which), first the target audience was taken into consideration: mainly interested in naturalistic and coastal tourism; as a consequence, the cultural aspect is not always the first objective.

In order to attract their attention, therefore, the idea is to create a virtual exhibition that is positioned in a strategic meeting point, is captivating and does not require too much effort in its fruition.

With our target user clearly in mind, these reflections then are in order:

- i. The device: even though the cost of headset is decreasing, they can still cause discomfort in the user;³¹ moreover, it could be bothersome to put them on, considering the hot weather of the island. AR, on the contrary, basically only requires a smartphone to be experienced, within everyone's comfort zone.
- ii. The environment: since the team has chosen the Barbacane Castle as the location, a perfect meeting point for tourists, and wanted to exploit its outdoors spaces, it would have been a pity to conceal the surroundings behind a 100% virtual environment.
- iii. The sharing: augmented reality, and in particular AR with the aid of a smartphone allows a level of sociability which is otherwise very difficult with VR. The possibility to share the experience together with friends and family, maybe even look at the same screen is considered important by the team.



Fig. 20 Screenshot - An example of socialization inside a museum. Source: https://youtu.be/HhD_GR8tV-s.

For the above-mentioned reasonings, the creators of the project opted for a virtual exhibition that employs AR. In this context, projects like the app developed

³¹ N. Elmqaddem, 'Augmented Reality and Virtual Reality in Education. Myth or Reality?' in *International Journal of Emerging Technologies in Learning (IJET)*, 03: 2019, 234-242. <https://doi.org/10.3991/ijet.v14i03.9289>

by North Carolina State University,³² *The life of Books*,³³ *Terracotta Warriors* Exhibition at the Franklin Institute were of great inspiration.³⁴

App implementation

There are two broad classes of AR apps: marker-based apps and location-based apps. Marker-based apps use predefined markers to trigger the display of AR overlays on top of the image. Location-based apps use GPS, accelerometer, or compass information to display AR objects on top of physical ones. In the case of the project, it is necessary to develop a marker-based application: markers are normal images or small objects which are trained beforehand so that they will trigger the camera of the smartphone, displaying the augmented content.

There is not only one method to do it, there are several aspects to consider that are presented below.

Criteria

Costs. It is important to define a budget for the implementation of the project because it can heavily influence the choice of the technologies implied.

Platforms. Since the application is meant for smartphones, it needs to be compatible with both iOS and Android operating systems. In this case there won't be any problems when choosing an augmented reality toolkit, since nearly all of them support both.

Image recognition. This function is essential, especially because the app will be marker-based. This feature allows to identify objects, places, and images. For this purpose, smartphones and other devices use machine vision together with the camera and artificial intelligence software to keep track of images that can subsequently be superimposed with animations, sounds, HTML content, etc.

Data storage. Where should the user data be stored? The decision is mainly conditioned by the number of markers that will be needed. Since our markers are not a huge number, cloud space is not necessary. Furthermore, storing markers locally (i.e., on-device) enables users to run the app offline, which means Wi-Fi or mobile-data won't be necessary because it could be played offline.

Programming: yes, or no?

The amount of software development kit (SDK) and platforms for augmented reality is quite huge. In order to pick one, it is necessary to consider the above-mentioned aspects and the level of expertise of the team that will work on the development of the project. For example, SDKs like Vuforia, Wikitude and ARToolKit require profound knowledge of C++, Java, or C#. If programming languages are not an option instead, it is possible to use platforms that provide ready-made solutions.

³² <https://delta.ncsu.edu/portfolio/gd-303-augmented-reality-app-to-enhance-graphic-design-theory-textbook/>.

³³ <https://rid.hamilton.edu/campus-of-the-future/the-life-of-books-in-ar/>.

³⁴ <https://www.fi.edu/exhibit/terracotta-warriors>

For SDKs, the prices range from free to more than \$2000,³⁵ and the same can be said for tools like BlippAR that allows to create AR apps without any programming knowledge.

The best approach probably lies in the middle: for the development of the application, it could be convenient for the museum to involve a third-party subject that already employs the above-mentioned technologies. This team will then work in synergy with museum staff and archaeologists in order to create a historically accurate experience.

Required steps

Regardless of any decision, the following steps are mandatory for the development of the application:

1. Choice of a solution for the technical implementation of the application (see previous paragraphs).
2. Development of 3D objects:
 - a. acquisition of HD photos of archaeological sites involved, the imperial head and any other significant object;
 - b. 3D rendering of those picture with programs like Blender;
 - c. development of necessary animated scenes with Blender.
3. Creation of a 2D marker that gets placed on a surface and scanned by the smartphone or tablet; markers will be both black/white symbol (more 'classic' marker) and specific images registered as markers (e.g. an obsidian stone).
4. Preparation of pictures, text and audio files that need to be included.
5. Think about the design of the app interface.

Application Interface

The mobile application should have a very simple and intuitive interface:

- welcome text;
- a small animation that lets the user see how to interact with the panel and explains basic gestures;
- a menu that includes information about the project, the privacy policy and any other relevant content;
- an 'exit' button that allows to terminate the visualization of any AR content;
- a pop up that appears at the end of the tour to allow the visitor to review the experience.

³⁵ Comparative tables at <https://www.infoq.com/articles/augmented-reality-best-skds/> and <https://socialcompare.com/en/comparison/augmented-reality-sdks>.

The panels

All the panels have the same shape and size: 50 cm in height and 70 cm in width. They are positioned at a median height from the ground of 140cm, to allow a good vision to a wide public. It is in fact possible to fully enjoy them even for those who, for example, are in a wheelchair. (Fig. 11)

The panels should be made of forex, a plastic material in expanded PVC which is particularly suitable for direct printing, easily shaped, light but resistant: in fact, it is waterproof and therefore can also be used outdoors. Its cost is about 47,00 € / m² (more or less 140,00 € for 5 panels, plus printing costs and stands).

The exhibition in the context of the location

The chosen location for the exposition is the Barbacane Castle, located in the city centre. As already mentioned above, the reason for the choice lies in the visibility of the building, which stands out for its massive shape in the easily accessible central area of Pantelleria. Therefore, it also represents a place of historical and cultural importance: inside, it preserves some of the most iconic archaeological findings of the island.



Fig. 21 The Barbacane Castle, Pantelleria. Source: Photograph by Amanda Culoma

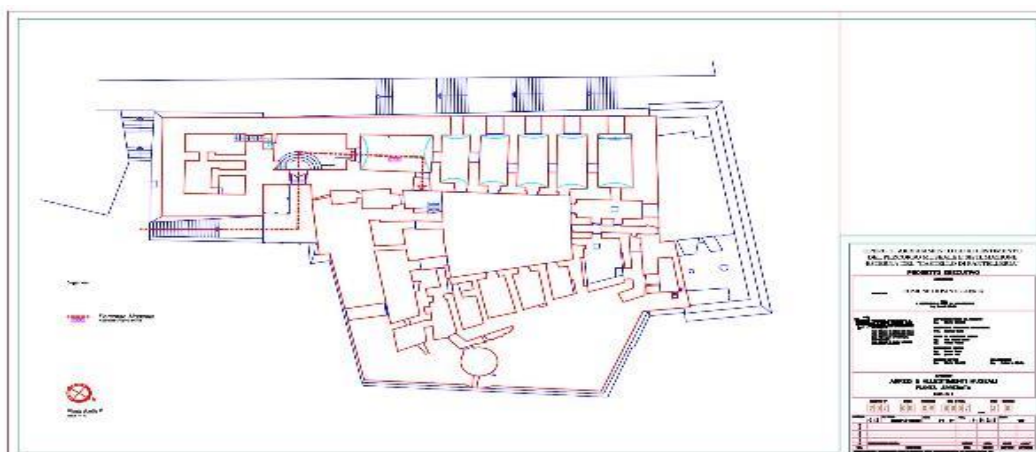


Fig. 22 1:100 planimetry of the II level of the Castle. Source: Filippo Luppino

The Approach

The exhibition will be installed in the closed courtyard of the castle, accessible from the same floor as the entrance. (fig. 25).

The panels are positioned in a non-aligned way, so that visitors that enter the courtyard can see all the panels immediately. As they get closer, they notice that the panels are at different distances. This was designed to naturally guide the visitor on the path to follow.

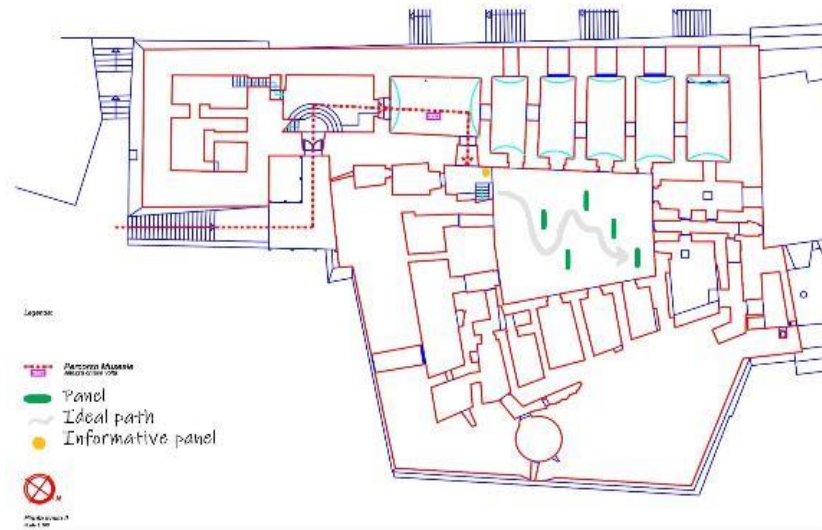


Fig. 25 Details of the planimetry with panels added. Source of the original: Filippo Luppino

Maintenance

Maintenance issues regard the exposition as a whole, the panel and the app in itself. Let us start from the first one. The mobile application includes the possibility to review the experience. This valuable feedback is important because it allows museum staff to decide if it makes sense to transform the temporary exposition into a seasonal one and if it is necessary to improve something, in terms of content and/or disposition of the panels. As for the panels, they simply need to be cleaned regularly and replaced in the event of serious damage.

For the application instead, the situation is a little bit more complicated. Consider the case in which the museum turns to third parties for its building. In this scenario, the application is assumed to be developed with up-to-date technologies. Consequently, the requested updates will not be frequent and above all will be small. More likely, it will perhaps be necessary at least at first to take action to fix bugs. The museum staff, instead, will have to deal with the updating of the historical-cultural contents; this could be necessary:

- in case of new archaeological discoveries;
- as a consequence of the decision to extend the experience in augmented reality also for other museum objects.

Accessibility

The group tried to develop a virtual exposition that is as much accessible as possible, thinking about different kinds of disabilities. First of all, the space in which the panels are hosted is physically accessible and there is enough space around them to allow a wheelchair to move freely. To this regard, the markers are thought to be placed in a point that is not too high; moreover, it is not necessary to be too close to the panel to activate the image recognition. It was also decided to include both audio and text content as complementary material to the animations, and Braille text will be inserted both for text content and markers on the panels. Finally, the museum will provide footstools for little kids that want to try it for themselves.

Use case scenario

The Jones family is spending the second day of their vacation on the island. Today they have sunbathed a lot and Gwyneth, their daughter of five, has taken at least five baths in the sea. Now they are enjoying the evening breeze after a nice dinner. Walking along the harbour, they notice a huge building: it must be the castle of which the hotel manager was speaking about that morning. They decide to go inside. At the entrance, Harry asks for information at the information point and discovers the existence of a 'virtual' exhibition that has just been inaugurated. They decide to try it, especially because it is free and all they have to do is download the application that the receptionist has indicated. They follow the signalled path and arrive at a door wide open on an internal courtyard, illuminated by pendant lights. Harry stops to read the welcome sign, while his wife Meredith and her daughter go down the stairways and look around. 'Mommy let's start from the closest!' Near the panel Meredith points the smartphone towards the marker at the bottom right and the camera activates. Thus, their journey begins.



Fig.23 Simulation of the experience. Source: Photoshop image by Szilvia Baráth

In the first station, they watch the animation a second time because Gwyneth is fascinated by the talking heads. When, on the other hand, they are about to move on to the third one the little girl, attentive like her father, tries

without success to persuade her mother to stop, because in her opinion they have not seen everything. After about 25 minutes they reach the end of the exhibition, while the father is still in front of the fourth panel. Meredith is answering the questions from the review when Gwyneth snatches the phone from her hands. She looks around in search of something: she heads for the wall, picks up a little stool and returns to panel number 2. She climbs on it and starts to explore in detail the entire surface. 'Mama, I told you', she exclaims as she plays with a 3D reconstruction of an obsidian stone. And so, she retraces all the panels in search of hidden treasures.

Conclusions

This project was not meant to include the whole Cultural Heritage of Pantelleria island, some archaeological sites were deliberately excluded as well as their period of interest, such as the archaeological findings related to the Byzantine period and the underwater archaeology. Even if this virtual exhibition was devised to the fruition of underrated and underrepresented archaeological sites, mostly the Eneolithic village of Mursia, it may be extended in the future to other archaeological sites.

In summary, as the first part of the paper demonstrates, the cultural heritage of the island is underpromoted and neglected, therefore the aim of this project is to attract attention to this area and to educate people about the history of the island and its important cultural heritage.

In this paper various factors that need to be considered were examined when realizing the project. The historical overview provides a deeper understanding of the issue and the importance of the *Sesi* for the readers, as well as for people who might be interested in working on the exhibition if it is realized. Then, the choice of the location and duration matches the life of tourists and locals and therefore, it suits as many visitors as possible. The exhibition uses technology to a great extent: from the AR application to the animations and storytelling, a designer group with great expertise could work on this project because of the heterogeneity of tasks.

In conclusion, the success of the creation and realization of this exhibition depends on the designers of the project as well as on the financial sources and the support of local institutions. However, as there have not been many attempts to revive the heritage of the *Sesiota*, the exhibition is definitely a step towards the preservation of this cultural heritage especially that it includes digitization and thus, conservation of important works of art that might be lost otherwise.

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