Accessible and Digitalized Heritage of Culture (AD HOC):
Accessible and Digitalized Cultural Heritage for Persons with Disabilities

Project № 2019-1-MK01-KA203-060269

Accessible and Digitalized Heritage Of Culture (AD HOC):
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AD HOC:

Accessibility of Archaeological and Cultural Heritage Sites

Study report
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Accessible and Digitalized
Heritage Of Culture

Accessible and Digitalized Cultural Heritage
for Persons with Disabilities

AD HOC:
Accessibility of Archaeological and Cultural Heritage Sites

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1. INTRODUCTION

1.1. Project summary

Nowadays, the management and protection of cultural archaeological heritage is unthinkable without an active participation of the general public. The days when archaeology was a discipline and technique comprehensible to a narrow academic circle, sponsored exclusively by national or international funding bodies are over. Archaeology and archaeological cultural heritage should be reachable and accessible to different profiles including to persons with special needs: people with impaired vision or hearing and intellectual disabilities. These categories have been largely denied access to their archaeological heritage and they have been deprived of the possibility to fully experience their past.

The aim of the AD HOC project (Erasmus+ KA203 project)[1] is to create a strategic partnership in the field of higher education with the purpose to create and share innovative practices in the digitalization of the cultural heritage and its accessibility for persons with disabilities. The general goal of this project is to bring archaeological cultural heritage closer to the public, including different categories of the population, preferably through on-line courses. Through the project activities the awareness of the value and importance of archaeological heritage among the general public is raised and the field of archaeology and conservation science is popularized.

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1.2. Project priorities

The AD HOC Project-Accessible and Digitized Heritage of Culture primarily addresses the horizontal priority - Open and innovative practices in a digital era. The project is directly supporting the promotion of innovative methods and the fostering of open pedagogy approaches in the area of cultural heritage. One of the biggest benefits is developing an open source educational software, which will be innovative and accessible for persons with disabilities. According to a desktop search made before the application form was created, we noticed that there is no such an OER for cultural heritage that is created in a format understandable for people around Europe less knowledgeable in cultural heritage. We also did not find an OER in line with this topic which is accessible for persons with disabilities. With this project, open educational resources like digitization of artifacts that will be interesting for the wider population, digital learning materials and e-learning courses will be developed, free and accessible to all. The project is supporting the use of digital technologies and it stimulates e-learning in the participating universities and other relevant partner organizations, which will lead to improvement of the methods of academic work and the methods of assessment.

The innovative value of the AD HOC-Accessible and Digitalized Heritage of Culture is in its accessibility for disadvantaged learners as well as students with disabilities. Because of this, we chose the second horizontal priority in the area of High education. With our project activities we work on Building inclusive higher education systems. The objectives of this project are also aligned with the horizontal priority building inclusive higher education systems. With the creation of an accessible OER for

cultural heritage, we will implement institutionally based strategies for inclusion and equal opportunities for all, including disadvantaged groups. The new and innovative OER will be accessible for diverse learners and it will be adjusted to their learning types. The project activities also predict development of ICT skills and media literacy for all students, which will enhance the access to e-materials, and the participation of diverse learners. The development and acquiring of new skills in students with disabilities through the use of this accessible OER will enable their active and competitive participation in the labor market, which will lead to open and equal opportunities in all aspects of society life, in the same time persons with disabilities will have opportunity to gain knowledge in the area of cultural heritage in Europe.

With all that is explained above, through the project activities we gave contribution to social and educational value of European cultural heritage, contribution to job creation, economic growth and social cohesion. With our project we act to cover European priorities, working on the inclusion (persons with disabilities) and working in the area of cultural heritage. We connect this to topics and we consider the best ways and approaches to make the cultural heritage topic accessible to people with disabilities.

1.3. Project objectives

   • Digitalization of the cultural heritage in formats accessible to all and hence enabling on-line and distance learning as well as long life learning.

   • Foster quality improvements and excellence in innovation at the high education institution level through enhanced

transnational cooperation between education and training providers and other stakeholders.

• Promoting the cultural heritage and its values among persons with disabilities and improve their level of key competences and skills, in particular with relevance to the labor market and their contribution to a cohesive society.

• Creating innovative ways for sharing effective methods in learning and recognizing culture and history for people with fewer opportunities (visual problems, hearing problems and intellectual problems), addressing the opportunities and implications of digitalization;

• Foster the inclusion of people with fewer opportunities;

• Fostering equality in learning culture and history and foster the inclusion of people with fewer opportunities;

• Fostering social and educational value of European cultural heritage, its contribution to job creation, economic growth and social cohesion;

• Promote and strengthen knowledge and acceptance of diversity in society.

1.4. Intellectual outputs overview

The following intellectual outputs were envisioned within the frames of this project:

IO1 – Field and desk-top research to define least accessible archaeological and cultural heritage

A field and desk-top research was conducted in the coordinator's and partner countries with the purpose to define which aspects of the archaeological cultural heritage can be digitalized

and made accessible to the wider population including persons with disabilities. Each of the participant countries conducted this research within their settings and defined which aspects are least accessible. Within this intellectual output the parameters for digitalization of certain types of cultural archaeological heritage were set.

IO2 – Digitization of archaeological cultural heritage

The research conducted in IO1 generated content ready and prepared for digitization. This selected content from the coordinator country and the partner countries will be digitalized in the following project stages. A special platform will be created and filled with archaeological cultural content from all the countries.

IO3 – Accessibility of the digitalized archaeological cultural heritage

Adaptation of the digitalized archaeological and cultural heritage content for students with disabilities: vision and hearing impairments and intellectual disabilities. Making archaeology and cultural heritage more accessible to marginalized groups has been a major trend in countries with a long archaeological tradition.

IO4 – Creation of on-line courses for archaeological cultural heritage for the wider public including persons with disabilities

This study is the product of the desk-top and field research conducted in all four countries participants in this project (North Macedonia, Greece, Italy and Slovenia). A field and desk-top research was conducted in the coordinator's and partner coun-

tries with the purpose to define which aspects of the archaeological cultural heritage can be digitalized and made accessible to the wider population including persons with disabilities. Each of the participant countries conducted this research within their settings and defined which aspects are least accessible.

Within the first activity of this output instruments for the qualitative and quantitative part of the research (protocols for work, questionnaires, and checklists) were prepared. Afterwards the desktop research and field research (focus groups and semi-structured interviews with persons with disabilities and staff working with them) was conducted. The use of qualitative and quantitative research tools led to an extensive review of current theories, practices and findings for the best models of working with this specific target group and the innovative solutions to make it also useful for persons with disabilities and to develop Open Educational Resource in the area of cultural heritage.

After the data gathering, we approached the qualitative and quantitative analysis of data. We defined concepts and created analogies with the purpose of development of the framework.

Each partner contributed to the comparative analysis with their unique in-country experience related to the best theories and practices in the field of accessibility in the area of cultural heritage for persons with disabilities. All three partner institutions as well as the leading organization for this intellectual output – conducted the desktop research and field research in each country respectively.

The leading organization was responsible for the qualitative and quantitative analysis.

The applied methodology was a combination of qualitative (desktop research, semi-structured qualitative interviews and focus groups) and quantitative research. Triangulation of methods of work, sources of information and researchers were applied with the purpose of attaining a validity of the gained results. The results from the conducted study generated a framework for creating new approaches for producing accessible online materials in the area of cultural heritage for persons with disabilities, new curricula for online courses, new OER.

2. METHODOLOGY OF RESEARCH

Research methodology is a strategy that "silhouettes our choice and use of specific methods relating them to the anticipated outcomes (Crotty, 1998). As in all studies the research methodology is based on the research problem, its types and its features (Noor, 2008).

Within this study, we decided on a **mixed method research**, on a combination of qualitative and quantitative research methods. Mixed-method designs are defined as including at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words), where neither type of method is inherently linked to a particular inquiry paradigm or philosophy (Caracelli&Greene, 1993).

The most common and well-known approach to mixing methods is the Triangulation Design (Creswell, Plano Clark, et al., 2003). The purpose of this design is "to obtain different but complementary data on the same topic" (Morse, 1991, p. 122) to best understand the research problem. The intent in using this design is to bring together the differing strengths and nonoverlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small N, details, in depth) (Patton, 1990). This design is used when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data.

The core characteristics of a well-designed mixed methods study in PCMH research include the following:

- Collecting and analyzing both quantitative (closed-ended) and qualitative (open-ended) data.

- Using rigorous procedures in collecting and analyzing data appropriate to each method's tradition, such as ensuring the appropriate sample size for quantitative and qualitative analysis.

- Integrating the data during data collection, analysis, or discussion.

- Using procedures that implement qualitative and quantitative components either concurrently or sequentially, with the same sample or with different samples.

- Framing the procedures within philosophical/theoretical models of research, such as within a social constructionist model that seeks to understand multiple perspectives on a single issue—in this case how students and persons with disabilities enjoy cultural heritage or what barriers they face during this process.

Conducting high-quality mixed methods studies requires a multidisciplinary team of researchers who, in the service of the larger study, were open to methods that may not have been in their area of expertise. The multidisciplinary team was consisted of archeologists, special educators, IT experts, historians.

The **research subject** in this study was oriented towards defining least accessible archeological sites in North Macedonia, Greece, Italy and Slovenia. In order to do that we conducted a desk-top analysis in all four countries-participants in the project. Here, the insights of students with disabilities were of enormous value. Hence, we decided to incorporate a quantitative field research as a continuation of this qualitative desk-top

study. With the compiled data and knowledge of this two approached we moved towards the **research goal** of this study – to define least accessible sites, to define the barriers for students with impaired hearing, impaired vision, physical disabilities and so on, and to create suggestions on how we can improve the archeological experience for these categories of persons with disabilities.

For the quantitative part we used **stratified purposeful sampling**. In this type of sampling the researcher wants to ensure that certain cases varying on preselected parameters are included. Although this kind of sampling is— from a probability sampling standpoint—statistically nonrepresentative (Trost, 1986), it is, from a purposeful sampling standpoint, informationally representative. Each case represents a prespecified combination of variables, the distinctive confluence of which is the focus of study. The respondents were children and youth with and without disabilities that could give us an insight in their experiences related to archaeological and cultural heritage.

Mixed research studies contain 13 steps - each of which occur at one of the following three phases of the mixed research process:

- Research conceptualization (i.e., determining the mixed goal of the study, formulating the mixed research objective, determining the rationale of the study and rationale for mixing quantitative and qualitative approaches, determining purpose of the study and the purpose for mixing quantitative and qualitative approaches, determining the mixed research question),

- research planning (i.e., selecting the mixed sampling design, selecting the mixed research design),

- and research implementation (i.e., collecting quantitative and qualitative data, analyzing the quantitative and qualitative data, legitimating the data sets and mixed research findings, interpreting the mixed research findings, writing the mixed research report, reformulating the mixed research questions).

Of these 13 steps, analyzing **data** in a mixed research study potentially is the most complex step because the researchers involved has to be adept at analyzing both the quantitative and qualitative data that have been collected, as well as integrating the results that stem from both the quantitative and qualitative analysis "in a coherent and meaningful way that yields strong meta-inferences (Onwuegbuzie & Combs, 2010, p. 398).

Searching for the rationale/purpose for conducting the mixed analysis we decided for a **triangulation** approach where the quantitative findings are compared with the qualitative results.

3. RESEARCH RESULTS FROM DESK-TOP ANALYSIS

3.1. Desk-top research for least accessible sites in North Macedonia

3.1.1. "PAVLA ČUKA" – STARO BONČE

The excavation site Pavla Čuka is a necropolis from the Hellenistic and Roman period (Fig. 1), the site is located south of the village Bonče, Prilep region. Graves were discovered on this site in which coins from the time of Alexander the Great and other Macedonian rulers were found, as well as Roman bronze coins. The most significant discovery is the monumental tomb built in the fourth century B.C.

Fig. 1. Rulers tomb near Bonče

Fig. 2. Bird's-eye photo of the Royal tomb in Staro Bonče

Fig. 3. Exterior of the Staro Bonče tomb

The tomb is made of large stone blocks (Figs. 2 and 3). Its dromos and its chamber are surrounded by a circular protective fence (podium type) that is constructed with massive rectangular stone blocks. The way of shaping the stone blocks from the corridor is identical to the blocks from the Royal Palace on the

"Visoka" excavation site. The dromos and the chamber are surrounded by smoothly cut rectangular stone blocks, covered with a layer of soil that stretches 30 meters in diameter. At the time of the discovery, the tomb was looted and the roof structure of its chamber had fallen down, and only the dromos parts had been partially preserved. The dromos was 20m long, 2.15m wide and 2.95m high, and the rectangular chamber walls' have dimensions of 8x6.6m (Fig. 4). The blocks from which the dromos is built are rectangular, finely carved, and some of them are as long as three meters. We can confidently state that this is the most representative royal tomb on the territory of the Republic of North Macedonia.

Fig. 4. The dromos of the tomb in Staro Bonče

The central chamber of the tomb was looted in late antiquity. The corridor was excavated in 1912 by the French army, and in 1936, the archaeologist Nikola Vulić reexcavated and draw a plan to document it. In the last 15 years, Prof. Dr. Antonio Jakimovski conducts active research in this area. The tomb is located a few hundred meters from the hole in which, in 2006,

parts of bronze Macedonian shields were discovered. Expanding the scope of excavations around the royal palace, archaeologists have discovered ceramic fragments dating back to the time when the Pelagonian Kingdom's power was at its peak. We have found parts of high quality black veneer cantaros, an early antique lucerne (ceramic lamp) dating back to the middle of the fourth century BC, as well as parts of other artifacts.

Fig. 5. The chamber of the tomb in Staro Bonče

Fig. 6. The discovered parts of the Macedonian shields

3.1.2. SCUPI

The beginnings of the foundation of the Roman city of Scupi are connected with the Roman army, i.e. the stationing of the 5th Macedonian and 4th Scythian legions on the ground of the newly conquered Dardania during the rule of Tiberius (14 BC-37 AD), probably between the years 13 and 11 BC. More intense colonization and urbanization of the city probably occurred after the 15th year AD, after the formation of the province of Moesia. According to its location, its size, its fourth base, and its striking fortification elements, there is a high probability that the city developed from a legion camp (castrum). During the reign of Emperor Domitian (84-85 AD), Scupi was given the status of a colony under the full name of *Colonia Flavia Scupiorum*. It housed the deduced veterans of the 7th Claudius Legion. The city was also home to indigenous natives of Paeonian and Dardanian descent (Fig. 7).

In the second century AD, Scupi's became significantly more attractive, as a monumental theater was built in the city center.

Fig. 7. View of the Scupi excavation sites from the theater

Scupi noted an increase in construction activity in the fourth century. That is when the most remarkable building was built - the Basilica 1. At the end of the fourth or the beginning of the fifth century, another early Christian church was built in the city. Emperor Theodosius I during his stays in Scupi in 379 and in 388, issued two royal decrees. In the fourth century, the city became the headquarters of the episcopate, and later of the archbishopric. Famous Christian priests of Scupi were: Bishop Dacius (Council of Nicaea, 325), Bishop Paregorius (Council of Serdica / Sophia /, 343), Metropolitan Bishop Karos (in the letter of Pope Leon, 458), Metropolitan Jovan (synod in the capital of the province of Dardania - Scupi, 493); Archbishop of Justiniana Prima – Benenat (Did not participate in the Fifth Ecumenical Council in Constantinople, 553).

The city of Scupi was probably not spared from the terrible destructive attacks of the Huns in 447, and in 518, Scupi was destroyed by a catastrophic earthquake, as recorded in the Chronicle of Marceline Comes. After 518, the urban life of the Roman city of Scupi ceases to exist, although there are indications that life in the form of a smaller Slavic rural settlement continued until the tenth or eleventh century AD.

Research history

J. G. Hahn was the first to connect the ancient name "Scupi" with the name of modern Skopje in his 1868 travelogue. Arthur Evans made a turning point in identifying the exact location of Scupi as the mountain-foot of Zlokukjansko Kale in 1883, even though Scupi's approximate geographic location was calculated by the ancient geographer Ptolemy in the second century AD. The interest in Scupi in the period of the 19th and the beginning

of the 20th century was mainly expressed through historical-theoretical discussions about the location of Scupi or about collecting data on the epigraphic monuments. The work of A. von Premestein and N. Vulić should be noted here. The successor of their work is B. Dragojević-Josifovska.

The first incidental archeological excavations in Scupi were undertaken by K. Truhelka and R. Grujić in 1928/29. These excavations revealed a suburban villa with a thermal part, located west, outside the ramparts of Scupi, and an early Christian basilica in the village of Bardovci. These facilities today can not be identified on the ground and no documentation has been stored for them, while the results of the excavation and research are summarized in details and published.

Planned archeological excavations were first undertaken by N. Vulić at the theater in Scupi from 1935-37. Later, D. Rendić-Miočhević continued researching the same object in 1959-60. Real topographic studies of the excavation site of Scupi and the wider city territory were done by I. Mikulčić in 1970. Due to the great importance that the ancient city of Scupi had for the study of the ancient culture and history of this area and beyond, the Museum of the City of Skopje in 1966 began thorough planned systematic archaeological research, which with few interruptions continues to this day. Among the notable project leaders are M. Garašanin and D. Koračević. The main goal of the research is to determine the location, perimeter and urban structure of the city, the dimensions of the blocs of the city, and the chronologically different construction phases. From 1980 to 1996., with small interruptions, D. Koračević leads the project independently, and since 2000, the project leaders are L. Jovanova and M. Ončevska-Todorovska.

In 1973-74, there was an intervention on the area of this necropolis and protected research had to be conducted by D. Koračević. The same thing occurred in 1976 by M. Bilbija, in 1982 by M. Ivanovski and Ž. Vincić, in 1994, 1996 and 1998 by D. Mihailova Kalamadeska and L. Jovanova, and in 2008 by L. Jovanova alone. About 1,000 graves have been discovered that belong to the pre-Roman, early Roman and Late Roman period, i.e. they cover a time span from the Iron Age to fouth century AD. L. Jovanova has conducted systematic archeological excavations of the northwestern necropolis from 1990 to 2007, although with interruptions.

Fig. 8. A map of the Scupi excavation site

Notable excavated artifacts:

Walls

The city settlement is protected by fortification walls in the shape of an irregular polygon, built of crushed stone and a lot of mortar. Only some parts of the southeastern massive wall with a width of 3.20 m, and one part of the southwestern wall have been identified.

Theater

The ancient theater was built during the rule of Hadrian (second century AD). By its dimensions, it is the largest of the four ancient theaters on the territory of the Republic of North Macedonia. It used to accommodate around 9,000 spectators. The main contours of the building are revealed. The theater building is 98m long and 15m wide, and three corridors lead to the orchestra which has a radius of 1 m (Fig. 9). The theater building and the facade of the stage were richly and luxuriously decorated with marble architectural elements. It belongs to the Roman type of theaters, and was mainly used for entertainment. Comedies, satirical games, parodies, pantomimes, etc. were performed there.

Fig. 9. Ancient Theater Scupi

Civil Basilica

A remarkable monumental public building, with high-quality architectural decoration and a mosaic floor. Only the northern part has been discovered, which is a marvelous hall with a length of

28 meters, with is apse-shaped at the western end. This is where all the lawsuits, trade deals, and other important administrative matters took place. It dates back to the fourth century.

Christian Basilica

A monumental religious building, which was probably still under construction at the time of the earthquake in 518. It is three-nave with a narthex on the west, an apse on the east, and baptistery on the south, with dimensions 39 × 18 m. On the west side, there were primarily two pastophores, of which only the northern one is still preserved. The naves are separated by colonnades. It dates back to the end of the fifth and the beginning of the sixth century.

City villa (palace)

It partially lies under the southeastern part of the Christian basilica. It is a private residential building, probably owned by some wealthy citizen. From the eastern part of the palace, two rooms have been explored, one of which has luxuriously decorated walls with fresco decorations. Three rooms were discovered from the thermal part, two of which had a hypocaust heating system (Fig. 10). It dates back to the early fourth century.

City bath

It is located in the central zone of the city, east of the street Cardo. The bath has a simple plan that includes a fireplace, bathrooms with hot and lukewarm water, a section for adjustment, a dressing room, and a cold water pool. It was a public facility, which, in addition to maintaining hygiene, was the center of public, cultural and social life in the city. The hot tubs had an underground heating system. Several construction phases with

conversion of the function of separate rooms have been ascertained. The building dates back to the fourth or fifth century.

Fig. 10. City Villa (Palace)

"Cardo maximus" Street

One of the main city connections stretching from the southeast to the southwest, which is characteristic for all construction sites of the city. The road is 8.50 m wide. paved with large stone tiles and separated from the sidewalk with a colonnade. On both sides of the road there were sidewalks, It was between 2.60 and 3 meters wide and was paved with bricks. It dates back to at least 268, which means that its construction was connected to the reconstruction of the city after the invasion of the Goths (Fig. 11).

Eastern Necropolis

The eastern necropolis covers an area of about 30 hectares, starting from the eastern wall of the city of Scupi and extending

for about 1 km to the East. About 650 graves have been excavated so far, and the burial there stretched from the pre-Roman (Iron Age), through the early Roman to Late Antiquity periods. Biritual burial with cremation and inhumation was present, accompanied by a great variety of burial customs with different elements of grave architecture, as well as numerous grave findings.

Fig. 11. "Cardo Maximus" Street

Western Necropolis

Only a small part of the early Roman necropolis has been researched. It has intactly preserved gravestones and biritual burials with inhumation and cremation that date back between the end of the first and the beginning of the third century AD. In the second cultural horizon (a landfill from the handicraft workshops of the city of Scupi), graves from a late antique necropolis with skeletal burial dating back to the fourth century have been excavated. A total of about 160 graves have been excavated. The exact dimensions of the necropolis have not been

determined yet, but it probably starts from the western wall of
Scupi.

Northwestern Necropolis

Around 400 meters to the west, north of the modern road that
leads from Skopje to the village of Bardovci is the explored part
of the northwestern necropolis of Scupi. According to previous
observations, it is a multi-layered site, with several cultural ho-
rizons from the Bronze Age to late antiquity (Fig. 12).

Fig. 12. The northwestern Necropolis
with authentically preserved gravestones

The explored area (40 x 18 m) is located about 120 meters from
the northwestern city defensive wall. Extremely important and
rare is the cultural horizon of an early Roman necropolis, which
in terms of content and degree of preservation is a unique ex-
ample, not only in North Macedonia but also in the Balkans. So
far, only a small segment of the core of an architecturally plan-
ned city necropolis has been researched. Its dimensions have
not yet been determined. It is organized in front of the
northwestern wall, as an alley along the ancient road that led

from the west to Scupi and connected with Decumanus Maximus, one of the two main city streets, which divides the city in width. Seven authentically preserved gravestones have been discovered, of which five are stelae and two are monuments with grave altars. They are placed in four rows, diagonal to each other and are facing the road. The burial is biritual, with graves placed in parallel rows, with approximately the same orientation (northwest-southeast), identical to the gravestones and urban structure of the city. Regardless of the type and ritual of burial, the same religiosity is present in the understanding of the afterlife.

Granary (horeum – a public grain warehouse)

Fig. 13. Granary (Horeum – a public grain warehouse)

It is located in the central city zone, in the area north of the supposed Forum, and southwest of the Christian basilica. It extends west, along Cardo Street, following the route of the street and the main direction of the urban structure of Scupi NE/SW. The building has a simple massive construction with an elongated rectangular shape (65 x 15 m). Attached to the north and south end of the west side are auxiliary rooms, which with separate entrances are connected to the main building. The east and west façade walls end with pilasters protruding into the space outside the north and south façades of the building. The main connection of the granary with the outer space is at the northern end where there are three entrances - a main one and two auxilliary (Fig. 13). On the west side there is

another auxiliary entrance. The southern end of the building, according to the structural and architectural elements, was probably in function of a porch. The entrance to the building from the south side is not preserved.

3.1.3. THE SKOPJE FORTRESS KALE

The Skopje Fortress is located on a high hill called Kale, which is located above the Old Skopje Bazaar (Turkish Bazaar) in the city of Skopje. In the Middle Ages, the location of the Bazaar was also part of the Skopje Fortress, i.e. it represented the fortress suburb, which later developed into a Bazaar. The Skopje Fortress overlooks the river Vardar and has been of strategic importance for the city of Skopje for centuries (Figs. 14 and 15).

Fig. 14. A view at the Kale Fortress from the river Vardar

Because of its strategic position, fortress was built, demolished and rebuilt many times by various invaders. After the Skopje earthquake in 1963, the circular and square towers of the fortress were protected and restored (Fig. 16).

Fig. 15. Bird-eye photograph from the Kale excavation site

Fig. 16. Skopje 1953: A view of Stone Bridge and Skopje (Kale) Fortress

As the highest point in the city, the fortress has always been much cherished by the local population. Settlements existed at that place even before the walls were built. The earliest known inhabitants of the place lived in the Neolithic and Early Bronze Age (Fig. 17), 4,000 years BC. The fortress we see today was first built in Byzantine times (sixth century), with stone walls that were 121 meters long. According to archaeologists, the stone blocks from which the fortress was built were taken from the ruined ancient city of Scupi.
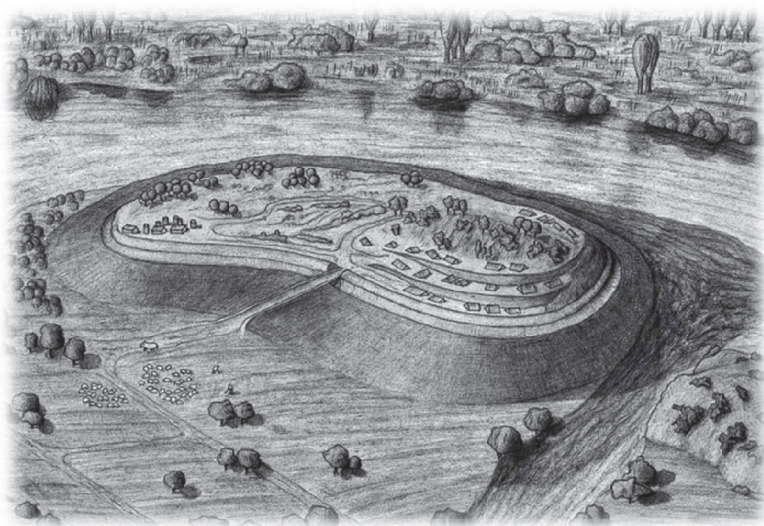

Fig. 17. A possible reconstruction of the oldest initial settlement on the Skopje Fortress (second half of fifth millennium BC)

The Kale fortress is one of the most popular places to visit in Skopje. It offers a fantastic view of the city as well as the opportunity to reach the city's Old Skopje Bazaar in a few minutes (Fig. 18). In summer, concerts and theater performances are held here, as well as the famous Skopje festival "*Pivoland*" (Fig. 19).

Fig. 18. Old Skopje Bazaar (Turkish Bazaar)

Fig. 19. The famous Skopje festival held at the Kale fortress

Extensive archeological excavations at the Skopje Fortress started on May 14, 2007 and lasted until 2012 (Fig. 20). The large volume of research (conducted by around 300 people) and the strongly exposed location in the center of Skopje spark great interest among the public, tourists and the media. The interior of the Kale fortress has been completely explored. With the reconstruction of most archaeological sites, the space became even more appealing for tourists, and it still attracts at least seven tourist buses per day.

All boards and signposts have already been made and it was expected that after the completion of the institutionalization of the Kale fortress, the museums (built on several levels) will be opened, so that visitors could see how the fortress had developed th-

Fig. 20. Archaeological excavation at the Kale fortress

roughout all time periods, and the exhibited artifacts could transfer them in time. Unfortunately, the Kale fortress is not yet institutionalized, and the museums have not been opened yet.

The process of archeological excavations at the Skopje fortress Kale has been completely finalized and over 13,400 artifacts from different periods have been discovered, of which 4,527 coins. All artifacts have been preserved and reconstructed and are already divided into three collections to be exhibited in the three museums, namely the "Museum of Prehistory", the "Museum of the Ottoman Period" and the "Museum of the Medieval Period". Unfortunately, none of these museums have been built to this day.

3.1.4. Accessibility of archaeological sites and accessibility barriers for tourists with disabilities

"PAVLA ČUKA" – STARO BONČE

The archeological site "Pavla Čuka" Staro Bonče is located on a terrain that is very difficult to access, as there is no asphalt road leading to the site, and visitors need professional mountaineering equipment. The site is located at a distance of 3 kilometers from the urban area (the village of Bonče in the East and the village of Podmol in the West). The easiest way to get to the site is by an SUV or by a tractor. It is simply impossible for people with disabilities to visit this wonderful archeological site unless they are accompanied (Fig. 21).

Fig. 21. The Royal Tomb is encircled with a stone fence and protected from external damages

There are no roadsigns or boards next to the site that would help potential visitors to visit this most remarkable sacred cultural monument of the territory of the Republic of North Macedonia in a faster and simpler way. The Royal Tomb of the Pav-

lova Čuka site is not encircled with a fence or protected from external damages. Therefore, it often suffers during heavy rains, when up to ¾ of the tomb can get flooded (Figs. 22 and 23). Besides the fact that it is not fenced or protected, there is no information board on the site of the tomb.

Fig. 22. The Royal tomb – flooded

Fig. 23. The Royal tomb – flooded

We believe that on this excavation site, on which the largest and most representative sacral cultural and historical object is located, it is necessary to build a road that leads to it and to place adequate roadsite and information boards. Besides the road and roadsigns, the site should be protected by a fence, conserved and protected from heavy rains (covered, so it would not get flooded). It is of outmost importance to place several information boards in the closed excavation site in both native and foreign languages, as well as boards with Braille. It would be very useful if a virtual guide option with modern computer technology could be introduced on the site.
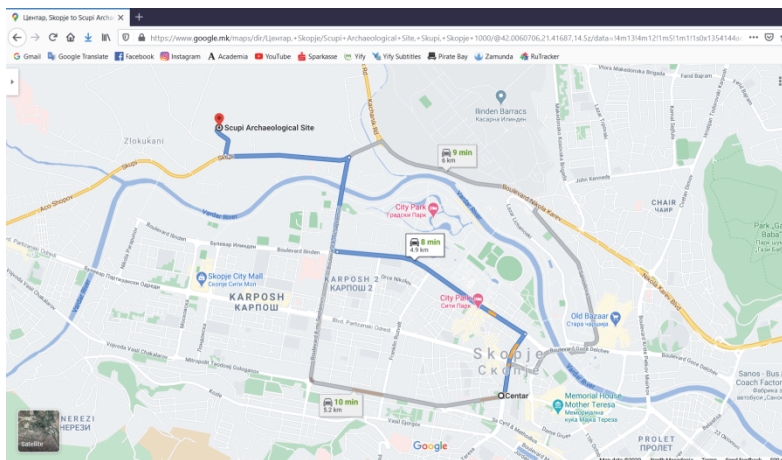
SCUPI

Fig. 24 Location of Scupi

The largest ancient excavation site on the territory of the Republic of North Macedonia is the archeological site Scupi, with a total area of 44 hectares. Not only is it the largest but it is located only 5 km from the center of the Macedonian capital,

Skopje. There is a road that leads the entrance of the site and several bus lines connect it to Skopje. There is also a bicycle lane near the site, making it possible for the site to be easily reached by bicycle.

Although the excavation site, as previously mentioned, is easily accessible, it is still poorly promoted. And even though it is one of the largest archeological sites in the country, the number of visitors is very small. Signposts and information boards can only rarely be seen in Skopje, and advertisements and promotional material is almost non-existent.

Accessibility to the site is resolved, but that should not be the full solution. The enclosed part of the site which is intended for visitors is not at all safe or even accessible for people with disabilities. Most of Scupi is relatively flat except that the northern part

Fig. 25. A view of Scupi

where the terrain is elevated. There is no suitable path for people with disabilities on the flat part, which means that their movement is impeded (Fig. 25). In addition to not having a suitable path for movement, there are large holes on the site as a consequence of archaeological excavations, and the holes are not encircled with a security fence. The elevated part of the site where the Roman Theater Scupi is located, the largest ancient building on the territory of the Republic of North Macedonia, is far from accessible for people with disabilities (Fig. 26).

There is a map of the entire excavation site at the Scupi entrance, and there are information boards next to each historical building. However, signs in Braille are missing, as well as a virtual guide with the help of the latest computer technology. Adequate paths for movement and an elevator or a ramp that would allow people with disabilities to reach the elevated area where the Theater is located should be a priority.

Fig. 26. Location of the Scupi theater

SKOPJE FORTRESS - KALE

The archaeological excavation site Skopje Fortress – Kale is one of the most famous sites in North Macedonia. It is located in the center of the capital, Skopje, above the Old Skopje Bazaar (aka the Turkish Bazaar). It is well promoted and easy to access (Fig. 27).

The problem arises after one has entered the site (Fig. 28). The walking path is in very poor condition and is not at all suitable
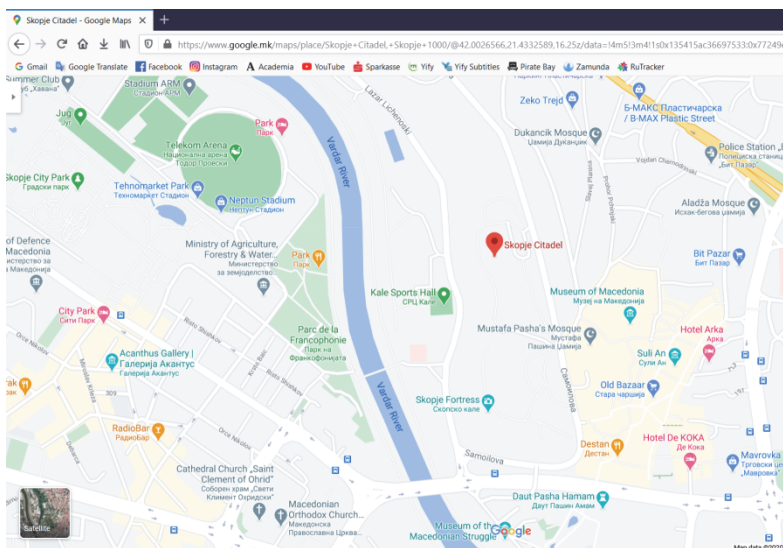
Fig. 27. Location of the Skopje Fortress – Kale

Fig. 28. One of the entrances to Skopje Fortress – Kale

for people with disabilities. Due to unresolved legal issues about the ownership and independence of the Skopje Fortress, the site is slowly being abandoned and the three built museums (the Museum of Prehistory, the Museum of the Ottoman Peri-

od, and the Museum of the Medieval Period - Skopje Fortress)
are not open at all.

Fig. 29. View of Skopje Fortress Kale

Fig. 30. View of Skopje Fortress Kale

The terrain of the site encompasses large hills and slopes, deep ravines, holes, there are no ramps or elevators for people with disabilities, and the elevated areas of the buildings is not adequately protected with safety barriers (Figs. 29 and 30). There are far from enough information boards, and boards Braille are completely missing.

A new adequate walking path is necessary, as well as an elevator or a ramp that would allow people with disabilities to move up and down steeps and slopes. It is mandatory to install security fences because there are heights taller than 20 meters. We believe that the site should be covered with information boards that will have Braille, as well as a virtual guide.

3.1.5. Are some archaeological artifacts digitalized?

PAVLA ČUKA – STARO BONČE

On the excavation site Pavla Čuka in 2017, the project leader Prof. Dr. Antonio Jakimovski from the Faculty of Philosophy Skopje and Kiril Denkovski, M.A. at CPPK Pajan-Skopje conducted a three-dimensional virtual reconstruction of the entirety of the Royal Tomb, together with another archeological site called "*Kolkot*" (The Hip) (https://www.youtube.com/watch?v=2-05801HPBY & Figs. 31, 32, 33, 34, 35 and 36).

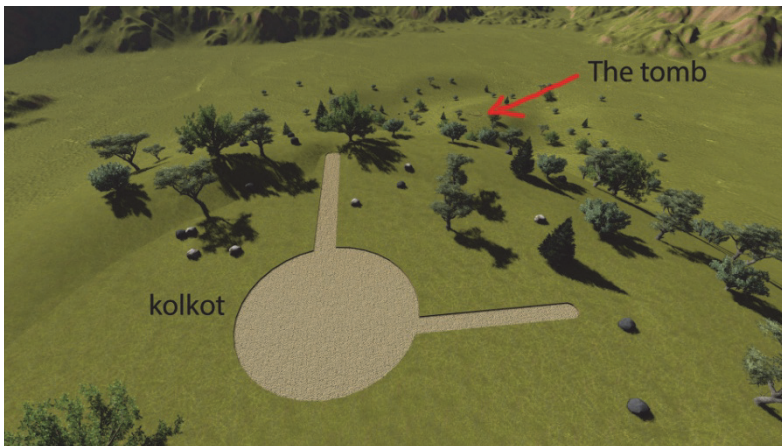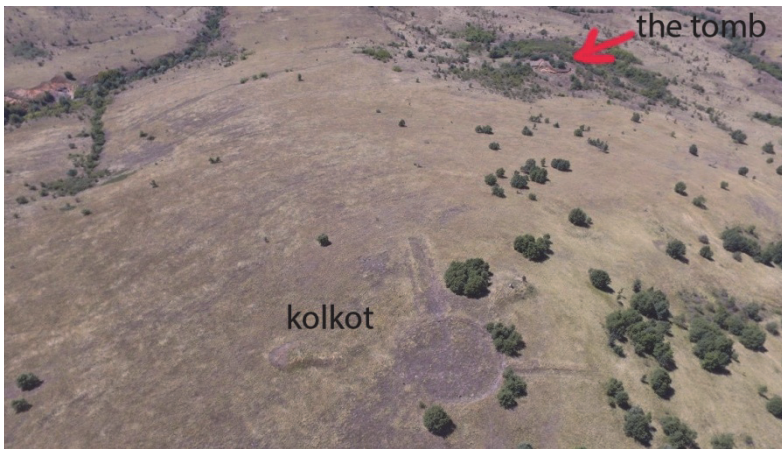Fig. 31. Reconstruction of the ancient tomb Bonče and Kolkot and their locations

Fig. 32. Reconstruction of the ancient tomb (the missing parts are added)
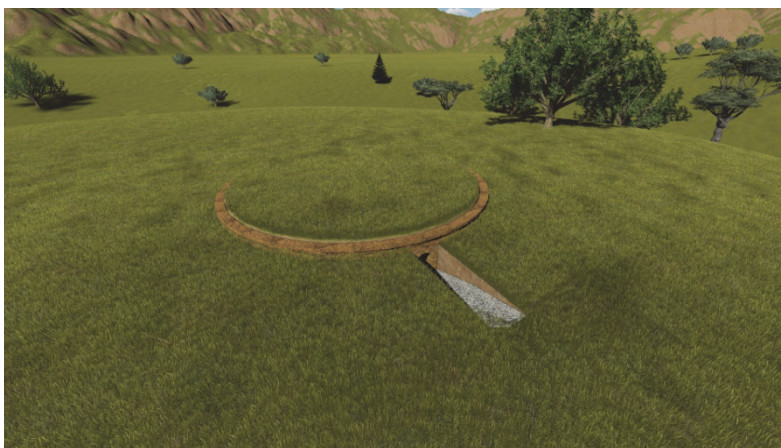
Fig. 33. Reconstruction of the ancient tomb Bonče

Fig. 34. Reconstruction of the entrance of the ancient tomb Bonče

Fig. 35. Reconstruction of the dromos of the ancient tomb Bonče

Fig. 36. Reconstruction of a part of the interior of the ancient tomb Bonče

SCUPI

During the notable project Ancient Theater Scupi 2013-2017, project leader Prof. Dr. Antonio Jakimovski and Kiril Denkovski, M. A., conducted a three-dimensional virtual reconstruction of the Ancient Theater in Scupi.
(https://www.youtube.com/watch?v=KFpasIbag1Q & Figs. 37, 38, 39, 40 and 41)
In addition to the reconstruction, archaeologist Goran Skelac from GeoArcheo–Zagreb, Republic of Croatia, prepared a three -dimensional photogrammetric model of the actual condition of the theater. With the help of the photogrammetric model, the entire theater can be seen in its actual state without visiting the site (Figs. 42 and 43).
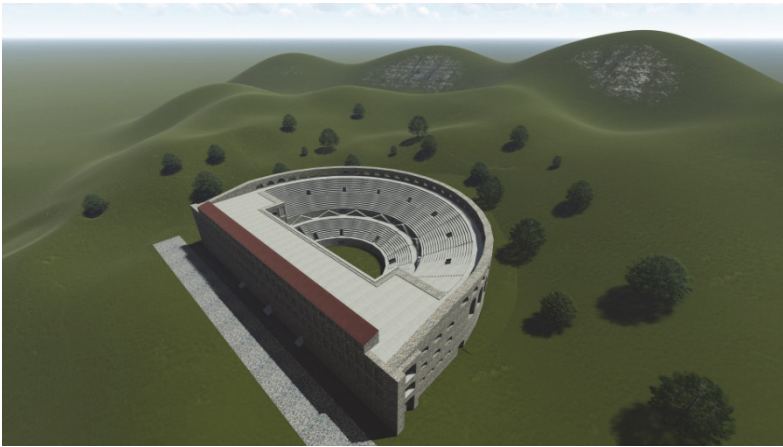
Fig. 37. Reconstruction of the Ancient Theater Scupi

Fig. 38. Reconstruction of the Ancient Theater Scupi

Fig. 39. Reconstruction of the Ancient Theater Scupi

Fig. 40. Reconstruction of the Ancient Theater Scupi

Fig. 41. Reconstruction of the Ancient Theater Scupi
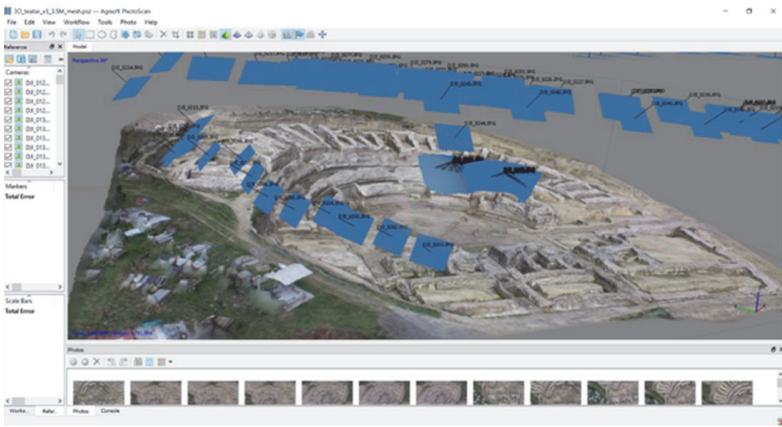
Fig. 42. 3D model of the Ancient Theater Scupi
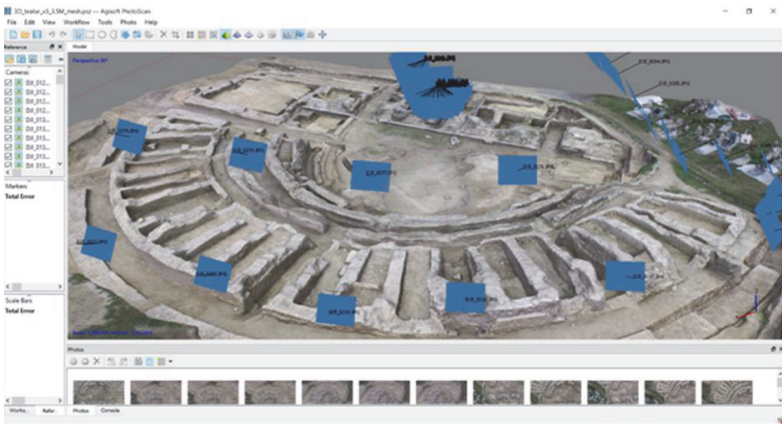
Fig. 43. A 3D model of the Ancient Theater Scupi

3.2. Desk-top research for least accessible sites in Greece

3.2.1. SEAWARD CASTLE OF CHIOS

Fig. 44. Seaward Castle of Chios

Category: Fortification (Fortified Seaward Settlement /Castle)

Type: Fronte Bastionato

Web-site: Formal (Ministry of Culture)
http://listedmonuments.culture.gr/monument.php?code=17048

Informal (Civil Society)
http://www.chioscastle.gr/

Country: Greece

Region: NORTH AEGEAN_EL41

Locality (town, village): Chios

Address (street, number): Aghiou Georgiou Frouriou

Geographic location (coordinates, altitude, relief, waters):

38.372208, 26.135930

Access: Porta Maggiore; Sea Gate

Owner/administrator: Ministry of Culture

Present function/ since when:

Inhabited
- Greek (1912-today)

Previous functions/period (start date-end date for each):

Inhabited fortification

- 6th Century
- 4th Century
- Roman-Late Roman
- Byzantine - 1356
- Genoese (1356-1566)
- Ottoman (156601912)

3.2.1.1. Description (history, features etc.):

The Ministry of Culture defines by the State Law of 29.10.2001 the area of the Fortified City 3rd as a Monument of outstanding value, due to the distinctive features of its tangible character as well as to intangible values that it acquired through the ages hosting different civilizations, serving as a crucible of culture in Eastern Mediterranean. The Archaeological Zone includes the southeastern part of the City, which extends north eastern of the Port of Chios. The Fortified City is the testimony of the

coexistence of different cultures and civilizations that Chios hosted through the ages. The interrelation of the cultural faces based on main historical events, evidenced nowadays by distinctive architectural features is crucial to the development of quality visitor experiences. The significance of the Genoese as a second in range ***stato da mar*** in the Mediterranean, the acquisition of Chios, the social welfare under the Genoese Occupation, the introduction to the Works of Military Architecture in pro- and post- artillery era constitute the ***materia prima*** for the development of an interpretive product, which is based on the following tourism resources:

- Fronte Bastionato": Fortification and Walls
- Towers and Bastions, Moat, Porta Maggiore, Entrances, Freight Dock, Harbour Chain, Distinctive Fortification Elements
- Albergho degli Giustiniani, today a Museum

Fig. 45. Seaward Castle of Chios

Nowadays the Castle of Chios is more closely related to the time of the Genoa (1346 -1566 AD), the brief Venetian occupation of the castle in 1694-1695 AD and the subsequent Ottoman period. The Castle of Chios was always the administrative and military center of the island, but during the Genoese era, it was the most enduring period in its history. The importance of Chios and its central castle was immense for every sovereign because of the island's geographical location at the cross roads of east and west connecting the Black Sea with the Mediterranean via the natural corridor of the Aegean Sea: Chios is strategically located, a short distance from the coasts of Asia Minor and in the middle of the Aegean Sea. Also, the production of a world-unique product, mastiha, made it a source of wealth and a target for conquerors.

The Castle has an area of 180 acres. Inhabitation in the area is testified at least since Hellenistic times. Findings of excavations confirm the continuation of habitation in Roman and early Byzantine times. Temples of the Middle Byzantine period are testified from the sources (10th century) and from excavations (11th century). Today's Castle of Chios is identified with the well-known fortress, which the Genoese ruler of Chios, Martino Zaccaria, began to build in 1328. In 1329 the castle was occupied by Andronikos III Palaiologos on behalf of the Byzantine emperor and remained in the Byzantine Empire until 1346, when Chios finally became an occupation in the Republic of Genoa. From the year that Genoese Simone Vignoso captured the island, the period of the Genoese occupation began in Chios, which lasted two centuries, 1346 to 1566. In the medieval times the city's castle (Civitas Chii) was the center of the political and military administration of Chios. Outside his walls was the city, the borgo. The governance of the island was undertaken by a

trading company, Maona, whose members from 1362 onwards belonged to the Giustiniani faction in Genoa and since then they had the surname Giustiniani. In 1566 Piali Pasha, the husband of the granddaughter of Sultan Suleiman, Gevherhan, captured the Castle in the wake of Ottoman Sultan Suleiman, to re-compensate the Sultan for the disastrous defeat of the siege Malta in 1565. In 1694, the Venetians occupied the Castle for a half-year, carrying out extensive work on the fortifications despite the short period of their domination. Since then, the Castle has remained uninterrupted in the hands of the Ottomans until 1912, when Chios was liberated and annexed to the Greek state.

3.2.1.2. Asset significance

Title of Government Gazette:

Π.Δ. 30-10-1924, ΦΕΚ 279/6-11-1924

Κ ΚΝ 5351/1932

http://listedmonuments.culture.gr/fek.php?ID_FEKYA=11465&v17=
http://listedmonuments.culture.gr/fek.php?ID_FEKYA=18071

We define the surrounding area of protection of the medieval Chios Fortress, the area defined by a red line in the attached paper extract of the city of Chios in a scale of 1:5000, bearing the original signature of the Director of Byzantine and Post Byzantine Monuments, which starts at the south of the jetty follows the waterfront, and then, from the confluence of the Aegean Avenue and Kanari Street, it turns to ND. and then follows Kanari Street and Dimokratias Street, then crosses Martyron

Street, Chandakos Street and Karaoli and Demetriou Street and finally ends at the north at the torrent of Agia Irini."

3.2.1.3. Statement of Significance

The Castle of Chios is the most important monument of the city of Chios and the most important fortification of the island. The Castle of Chios is one of the very few seaward castles in Greece. It extends over 180.000 km² with its southeast part facing the sea. It initial nucleus is byzantine, constructed in the 9th century to face piracy raids. It shapes constitutes a unique category as it is constructed by different stones that compose a unique, very particular and impressive image. The Castle is surrounded by 8 bastions in the style of fronte bastionato with loopholes and cannon openings. Exemplary of the bastion is the Giustiania Bastion that possesses a lower semicircular part while the upper part forms a sort of an extra bastion standing above the level of the landfills. Both levels possess canon openings. In one of the bastions existed a prison, while all eight bastions were provided with cannons in the external side of the extra bastion are the Giustiniani emblems: three towers, the eagle and the sword.

The importance of Chios and its central castle was immense for every sovereign because of the island's geographical location at the cross roads of east and west connecting the Black Sea with the Mediterranean via the natural corridor of the Aegean Sea. The castle is an important part of the city of Chios in terms of both historical and urban planning. Great historical events of the island are related to the fortress and the walled city, which has been inhabited continuously since the 11th century to this day. During the Latin period there was the administrative,

commercial and social center of the island, the center of the famous Civitas Chii. In the Ottoman domination, it was inhabited exclusively by Turks and Jews and was tragically degraded in terms of a structured environment. After the liberation (1912) and the Asia Minor catastrophe (1922), it became the inhabiting place of the Greek refugees who arrived in Chios. Nowadays it is still inhabited, forming a living part of the city. The interior of the Castle is of special interest, due to the two factors: first, there is a lush settlement with unbroken continuity in time, nowadays numbering some 650 inhabitants, and secondly the settlement includes monuments-buildings of different era that are the connecting links of the Castle's word history.

3.2.1.4. Accessibility

We define accessibility as communication with the public, easiness to experience tourism products and services at destination level, and appreciation of the atmosphere of the place. It includes the existence of a strategy for tourism management at the metropolitan level, the quality of information and hospitality, the presence and quality of secondary or complementary tourist services, internal and external accessibility, attractions and events. Heritage places should be accessible to everyone, including people with mobility or sensory impairments, the elderly, parents with small children and anyone who is temporarily disabled as a result of illness or injury. Improved access can open up wider markets for owners and managers, which could be promoted to increase visitation. Remaining inaccessible, centrally subsidized heritage resources are offered to the tourism market below cost: local and national tax-payers carry the burden of sustaining quality. This fact is especially evident in the

case of Chios, an island with unique natural and cultural features at global level. Analyzing the prefecture's basic and specific image, we concluded that prefecture reflects in the time period 1970-2000 a negative image (in 1971 Chios lies in the interval -0.5195, in 1981 in -0.4655, in 1991 in -0.4977 and in 2001 in -0.5476), revealing a low development rate. The situation has worsened in the decade 2000-2010 followed by the refugee flows since 2012 and the financial crisis in Greece. In 2017 the GDP per capita was 88% of the national, with a low occupancy rate 26% across 1402 businesses; and only 49427 tourism arrivals, from which museum & sites admissions reached 16665 visitors. In order for the destination to improve its tourism image, a distinctive reference image is required and this image has to be communicated to visitors and locals. Creating this image, also the inclusion of visitors with special needs is required together with heritage particularities and other distinctive and significant features in a holistic planning process. Once a specific identity is created, it has to be communicated to the outer world including the large segment of visitors with special needs worldwide. A detailed access audit could assess and document the barriers to access which exist within a place and its surroundings. Once an access audit and conservation assessment has been completed, an access plan can be prepared reconciling, where necessary, the needs of access and conservation.

Physical Accessibility

The Castle includes cultural resources from 4 periods: classical, Byzantine, Genoese, and Ottoman. The exterior resources are the Fronte Bastionato with fortification and walls, towers and bastions, the Moat, the Porta Maggiore, Entrances, the former Freight Dock area with the Harbour Chain, and other distinc-

tive fortification elements. In the interior are remains from three periods: Byzantine, Genoese, and Ottoman. The most important are

Byzantine Period: Domicile Traits; the Byzantine Domed Cistern; Marble Fountains; St. Nicholas of the Mole; St. George of the Castle; St. George of the Millet

Genoese Period: The Gates; the Bastionsl the Seaward Walls; the Burgus; the Towers; the Gunpowder Magazine; the Dark Dungeon; the Fortress Square; the Giustiniani Palace; the Hotel Apollo

Ottoman Period: Turkish Cemetery; Bairakli Mosque; Koulas Round Tower; Ottoman School, Ottoman Bathhouse

In the center of the Fortified City, a triple entrance form under an arcade leads to the **Palazzo Giustiniani**, today a Museum. A historical building of the 14th - 15th century situated between the central gate of the castle of Chios and the main square of the walled part of the town, most probably the headquarters of the Genoese Podesta. Disfigured by Turkish alterations and additions, it was restored during the years 1980-1986 by the Ministry of Culture. The fortress - like building has two floors, of one room each, raised high above ground level. On its northern side there is a small loggia and a stone external staircase, leading to the walls and the South eastern tower of the castle. In the Palazzo is a vaulted gothic room with lightly stressed arcs and vaults forming four quarters divided by a cross. A small square opening in the center of one of the domes, probably it should it was useful for the smoke to come out. The room is known as prison, because here were jailed in 1822, the hostages of Turks, before they were hanged at the Vounaki Square. The Museum hosts an exhibition, which consists of Byzantine murals, post-

Byzantine icons; Byzantine and Genoese sculptures and small-scale works of art. The most important items are:

• Twelve Byzantine frescoes of Prophets of the 13th century, detached from the dome of the church of Our Lady of Krena, near the village of Vavili in Chios.

• A 12th century marble Byzantine slab depicting in low relief a griffin and a chimera, found in the town of Chios.

• Marble slab from a pulpit, with the personification of DIA-LECTICA in high relief. It is considered to be a Genoese work of the early Renaissance and was found at the town of Chios.

• An 18th century cut-around full-length icon of the Archangel Michael, from the medieval fortified village of Olympoi in Southern Chios.

• A 16th Century Cretan School Type half-length icon of St. Antony from the village of Olympoi.

Irritating building modus of the surrounding environment still disable a lot of visitors to find out, where the museum is actually located. In the proximity of the moat there is a parking lot for private cars and the Community's Bus Service. There is a very easy access to the Castle, but unfamiliarity with the interior and lack of guided orientation disable the visit for visitors with special needs. Museum and collection remain isolated from the overall context of the Fortified City, so that the significant role and function of the historic structures remain hermetically sealed. Informational gaps in the virtual representation of the Museum inhibit visitor flows to ascend. Castle and Museum are presented at the Ministry of Culture with a short description, while there is a dedicated website for those designed and oper-

ated by the not for profit association the "Friends for the Castle". Many local websites present fragmented information, but they are networked with other works of military architecture and other medieval heritage resources of the island of Chios, nor there exists a special provision for visitors with special needs.

Cognitive Accessibility

The resources aforementioned exhibit of various artistic styles, autochthonous or imported, compose a fragmented face of the artistic activity on the island through the centuries, but they do not provide for an interpretive product that could successfully manage topics such the Genoese, Byzantine, and post Byzantine heritage. Exhibit labels and open-air panels are available only in Greek language are incomprehensible- written by experts for experts. Moreover, the hermetic nature of the exhibits impedes visitor perception. Visitation in heritage environments may very well broaden the audience's horizons, but in this case a war takes places, the one between *perception and understanding*, which is both of emotional and cognitive nature. Visitor endurance in the first phase of the visit is high due most to intrinsic motivation, but an acceleration of interest loss in the middle visit-phase is to be observed, due to working memory fatigue to process significant amounts of novel elements. Finally working memory loads and other location-related inconveniences accumulate visitor-fatigue in the last visit-phase, rendering the visit to an unsuccessful event. For visitors with special needs (auditory; optical; motoric) these conditions present a further burden.

To defeat time and distance decay, e.g. to offer contemporary visitors the chance to understand historically and/or geographically remote cultures and mentalities new tools are required.

However, we need to clarify the conditions in which understanding takes place. Among these conditions are prejudices and fore-meanings in the mind of the interpreter. Understanding is therefore interpretation, which uses one's own preconceptions so that the meaning of the object can really be made to speak. Understanding is thus a productive process, since interpretations keep changing during the process of what and when is being understood. One of the main problems visitors face during a visit in heritage settings is with is how to distinguish *'true statements'*, by which we understand, from the '*false*' ones, by which we misunderstand. There is a need develop historical self-awareness which makes conscious of one's own prejudices and allows one to isolate and evaluate an object on its own. Another important condition in which understanding takes place is the temporal distance: present and past are firmly connected and the past has to be painfully regained in each present, but only *if* the visitor has the tool to decode it. Given the fact that a series of physical obstacles and difficult accessing of the resources like stairs and cobblestone parts impede visitors with special need to enjoy the Castle, their effort is greater, thus the motivation is diminished.

Emotional Accessibility

Leisure visitors are heterogeneous groups with multi-generational members and are not always historically "self-aware". Capturing and keeping their attention high up during and possibly after the visit means to create bridges between the inherent values of phenomena selected for presentation, and the audiences. Far beyond the dissemination of factual information, cognitive accessibility aims to create meanings, so that visitors can put a phenomenon into personal perspective and identify

with it in a way that is more profound and enduring. Meanings, on the other hand are the only medium that can lead to emotional impact. Meanings are contextual in nature, and should create in audiences *the* sense of the place or the resource. Communicated through the use of an (audio-visual) language, culturally and socially constructed, they are shared by all who are able to decode them. One significant context for meanings is the spatial context, the sense of the place, the historic environment. However, accessibility issues impede visitors with special needs to fully enjoy this environment. Meanings extracted from a visit to a place, heritage or natural site, collection etc. constitute the high added value experience a visitor takes away in memory. In this vein, meaning *is* the experience- the only experience any visitor has with a place: A significant percentage of the respondents during the present research expressed the will to understand the Castle and its resources in the larger socio-historical. Taken seriously into consideration, this opinion should lead planners in IO2 to decide for a compelling storytelling in the Fortified City instead to itemize the inherent values of the historic structure within the fortification.

Heritage is not only pasts penetrating the present: it is an entity able to adapt to new functions such as innovative tourism uses and forms. Converting local heritage to tourism attractors, able to retain high quality tourism on a repeat visitation basis, able to produce destination image and attachment, is not necessarily a utopia. Valorization and sound pricing policies, the significance assessment process, an effective heritage strategy, accessibility networks, good will among stakeholders can make it happen. The Palazzo Giustiniani hosts a small but invaluable collection that reflects the multicultural face of Chios through the ages. It was not accessible to the majority of visitors mainly

due to three reasons: information with tourism value including signage and signposting was not clearly visible, digital sources scarce and fragmented, the collection was not interpreted and the relation of the historic house to the Fortified City remained sealed. Visitors were practically unaware that *it* existed, and when accidentally discovered, collection, architecture and significance were not cognitively accessible. In order to keep its distinctive features in a globalizing world, the island of Chios has to enter the re-evaluation process of its heritage resources. Culturally encoded landscapes and tangible resources succeed as a tourism product only through the process of cognition. Replete with symbolic elements, heritage assets should become mentally, emotionally and spiritually accessible in order to survive and satisfy the needs and expectations of experience-seeking visitors. The process of transforming the highly diversified heritage potential of the Castle to an indispensable component for visitors with special needs build the core of IO2.

3.2.2. ANAVATOS

Fig. 46. Anavatos

Category: Build Heritage

Type: Medieval Fortified Complex

http://listedmonuments.culture.gr/fek.php?ID_FEKYA=12769
&v17=

Location: Central Chios

Country: GREECE

Region: NORTH AEGEAN_EL41

Locality (town, village): Anavatos

Address (street, number): -

Geographic location (coordinates, altitude, relief, waters):

38.403502, 26.020032

Access: via the outer walls

Anavatos can be reached in 45 minutes following the road which connects Anavatos with the City of Chios. There is also a climbing path in the forest which starts from the Provatas mountain and leads to Anavatos.

Owner/administrator: Ministry of Culture

Private properties

Present function/ since when: 1046-today

Previous functions/ period (start date-end date for each):

1046-1566: Anavatos

1566-1822: Development of Mesochori

1882: Massacre of Chios and Destruction of Anavatos by the Ottoman Troops

1881: Complete destruction of the village by the earthquake while its remaining inhabitants settled in the lower part of Anavatos, while in

1918: refugees from the coasts of Asia Minor were temporarily settled there.

2008: systematic restoration

2011: census reveals on resident

2014: This site was abandoned with buildings demolished, lost routes and urban planning was not recognized. In recent years, parts of the buildings have been restored by the Ministry of Culture.

The Northern Part of Chios differs greatly from the southern part in respect to physical environment and productivity. Housing communities are small and isolated, and always far from

the sea. The houses are roughly built, and the only sign of the Genoese influence, aside from written sources, are the central towers in the villages. Anavatos, 16 Km from the town of Chios, is an exception. It has no defense tower and is not mentioned in Genoese sources of information. The village was probably built for defense, as an outlook post over the bare western shores of the island. The village of Anavatos is built on a conical cliff 450 meters above the sea, with steep sides to the south and west, and with only a single access to the north. The people took advantage of the natural fortification of this cliff, and strengthened it with a circular wall surrounding the houses that seem to be glued, one to the other. Together with the cliff, the village made up the defensive perimeter of the fortress. The 400 houses inside the walls were narrow, and built of grey stone with flat wooden roofs, low doors, tiny arched windows and wooden terraces. The village was abandoned after the Massacre of Chios 1822 by the Ottoman admiral of the Fleet Kara Ali in April 1822 during the Greek War of Independence (1821-1827). Although Anavatos is deserted today, as most of the villages of northern Chios, a considerable number of houses still stand, as well as the wonderful "three storey" building where the olive press was housed, the School, the church of Taxiarchi and the Virgin Mary.

Landscape – elements (buildings, heritage, farming, vegetation, fauna, waters):

The residential complex of Anavatos is developed on the side of a rock, 450 meters high, surrounded by two canyons, creating a dynamic organic form of 400 buildings in direct dependence on the predominant natural characteristic of landscaping. Its primary foundation is located in the lowland area on its outskirts.

The subsequent "ascent" to the rocky peak takes place within a defense-military logic. The primary nucleus of the settlement composes a strictly walled ensemble, formed by a precinct and the outer edges of the buildings. It covers 800 square meters. In this area are the temple of Taxiarchis and the Three-story with an olive press on the ground floor, the water tank and the School on the floor and the church of the Virgin Mary to the next one. At the end of the Genoese period (1566), the settlement expanded to the east and a village in between was developed, Mesochori developed, which was destroyed during the Massacre of Chios in 1822. It was completely abandoned in 1881, after the great earthquake that leveled the whole of Chios. The open-air spaces are minimal and the road network is organized into two parallel axes following the north-south-oriented elevation curves and a plurality of lateral and parallel smaller junctions. The buildings are small, two-story and one-roomed in the majority of cases, while they are covered by an arch and a roof. The ground floor is used as a storage area or stable, while the floor houses the family. The two levels communicate internally through a staircase. The entrance is unitary and oriented towards the motion networks. The openings are always placed on the floor and are arched, small in size and limited in number. The interesting thing is the foundation, as in many cases the walls are grounded in the absence of foundations directly on the rock, which can occupy up to half of the ground floor.

1046-today

3.2.2.1. Description

Anavatos is a Byzantine tower-village in the centre of Chios. Due to its location on a large granite rock at the end of a cliff,

the fortification majestically protrudes above the surrounding area. Although it is a deserted village, it has still preserved its history, felt by visitors when wandering through its stone-paved streets. Anavatos has often been associated with the Greek War of Independence in 1821 and the massacres of 1822, who represent an important part in history of the island.

The village of Anavatos got its name originally from the Greek verb "anevaino", which means "I climb". For such a difficult to reach village perched on top of a cliff, this name definitely fits. The village is built on a rocky elevation with steep sides and sheer cliffs on the South and West, so that it can only be approached from the North. This natural defense makes it probable that the village was originally founded in this site for security reasons to control the west during the period of piracy. Tradition has it that the first settlers were the woodcutters who came to build the famous New Covent Monastery at the request of the ruler Constantine the Monomahos of Constantinople. In exchange they requested him to give them this land to settle a village. The ruler was more than happy to oblige and he even gave monetary aid for the building of their new village. The people worked hard and finally they founded the new city of Anavatos.

However, pirate raids were to ravish the village many times, but still the people rebuilt it again. Anavatos flourished during the last centuries of the Turkish rule, but suffered severely in 1822 from the destruction by the Turks and in 1881 from a devastating earthquake.

Nowadays the settlement is almost completely deserted. A medieval castle stands on top of the village, which developed with time passing by into the shape of an amphitheater with the

acropolis at the edge of the ravine. Quite a lot of the settlement's narrow fronted homes are preserved to give a unique picture of a ghost town in a wild evocative environment.

The church of the Taxiarchis (the Archangel) is well-preserved and dominating the crest of the acropolis. It is the only building that, from a distance, still stands out amidst this living ghost town. Not far away from the walls gate, an imposing structure predominates among the buildings of its eastern side; it is the so-called three-store building, consisting of an olive-oil mill, a school, a water reservoir and the Church of Theotokos (the Virgin Mary).

A short distance to the northwest, a little above the Church, the Prison, the Court and the Hidden School are preserved, and at the highest peak of the Castle, the Acropolis Cactus Church, the Taxiarches, proudly protects. The original Church was burnt down in 1822 by the Turks. In this place was built another after the massacres and earthquakes of 1881 was destroyed again. Today it has been restored by the archaeological service. A short distance from Taxiarchis, northwest, there is a ruined house of Psarou in which the Anavatouss were fortified and overturned the Turkish attack from the Ammoni Hill. The church of today's Taxiarhis, celebrating on November 8, in the modern settlement, was erected after the earthquakes of 1881.

Anavatos can be described as the Acropolis of Chios, with some conceptual similarities to the complex of Mystras. The ruined Acropolis is the oldest and most important part of the settlement. It was destroyed during the massacre in 1822 when it was raided and burnt by the Ottoman troops. This within the wall section covers an area of about 4 acres. The buildings that stand out today due to their restoration are the two-nave basili-

ca of Taxiarchis and the so-called Triple-floor, which had a groundwater livery, a reservoir and a school on the first and the top of the church of the Virgin Mary. The second part of the settlement is the out-of-walls Mesochori or an old village, which began to develop around the end of the Genoa (1346-1566), flourished in the 18th century, suffered a great blow in 1822 and was abandoned after the devastating earthquake of 1881 Mesohori covers an area of about 6,50 acres and is crossed by two almost parallel axes in the north - south direction. Most of its buildings belong to individuals, were homes and, despite the difficulties, are still well maintained. Here, the urban fabric is clearer, even though ruins of dilapidated buildings are scattered in the open space. Mesochori consists of compact groups of similar houses in a variety of combinations. The houses are rectangular prismatic units with a roof shaped on a cylindrical dome. Inside, they had a wooden loft and a stone staircase. The floor housed the family and the ground floor was storage or a stable. The houses have narrow doors, few small windows on the floor and a few outdoor spaces. The construction material is the local limestone and for mortar is used clay with low lime and sand content. The new village: in the third and less important part of Anavatos, Neo Chorio, the remaining inhabitants of Messochori had settled after the earthquake of 1881. The architectural character of this department is very different. The houses are larger, two-story with tiled roofs and whitewashed walls. They keep distances between them and have courtyards. In 1991 the new village had 39 inhabitants and today only one.

3.2.2.2. Asset significance

Title of Government Gazette:

http://listedmonuments.culture.gr/fek.php?ID_FEKYA=12769&v17=

http://listedmonuments.culture.gr/fek.php?ID_FEKYA=1843

ΥΑ ΥΠΠΟ/ΑΡΧ/Β1/Φ28/12654/364/2-5-2001 - ΦΕΚ 571/Β/16-5-2001

ΚΝ 5351/1932, αρ. 52. Ν 2039/1992

We declare as an archaeological site the entire medieval settlement of Anavatos Chios and the surrounding area because it is the only example of an unchanging medieval settlement in Chios and is composed of an unbreakable historical, aesthetic and cultural unity with the wider mountainous region. The settlement is a typical example of medieval fortifications, town planning and architecture. At the Peak of the Acropolis dominates the double basilica of the "old" Taxiarhis, which preserves morphological elements of older phases as well as the late Ottoman domination. Just a short distance to the SE of the church there is a three-story building complex, the ground floor of which was an olive press, the first floor of the school and the second floor the temple of the Virgin Mary. In the northeast of the settlement and a short distance from it there is the depicted interior post-Byzantine cemetery church of Agios Georgios. Particularly as the archaeological site is declared the area defined by the points: Α, Β, Γ, Δ, Ε, ΣΤ, Ζ, Η, Θ, Ι, Κ, Λ, Μ, Ν:

POINT DIAGRAM DESCRIPTION DISTANCE BETWEEN POINTS

Χ Ψ

N / A 1: 5,000 1: 50,000 (m) (m) DIMENSIONS

Α 66087 N. Chios Peak 601,30 Trapeza 37,125 4610 ΑΒ 360

Β 66087 N. Chios Peak 520,20 37,220 4935 ΒΓ 680

Γ 66087 N. Chios Peak 469,50 37,740 5375 ΓΔ 590

Δ 66087 N. Chios Peak 611,80 Kakari 38,165 5785 D-E 2130

Ε 66181 N. Chios Peak 681,90 Coconut 40,200 6385 Ε-ΣΤ 550

ΣΤ 66181 N. Chios Peak 498,10 40,620 6035 FT-G 1300

Ζ 66181 N. Chios Peak 507,50 40,375 4755 Z-H 800

Η 66181 N. Chios Peak 486,00 39,595 4540 H-U 330

Θ 66172 N. Chios Peak 497,50 39,420 4135 I-540

Ι 66078 N. Chios Peak 474,00 39,045 3725 I-K 370

Κ 66078 N. Chios Peak 478,50 Winghouse 38,905 3385 K-L 1540

Λ 66078 Chios Peak 555,50 37,770 2355 LM 930 Ahladolakkos

Μ 66078 N. Chios Peak 613,50 36,970 2830 M-N 870 Koukoudotsumpos

Ν 66078 N. Chios Peak 210,00 36,930 3690 N-A 800

3.2.2.3. Statement of significance

Anavatos is a village, built on a conical rock 450 meters above sea level making a striking appearance. The residents benefited

from the rock and built a wall around the village making it look like a real fortress. The houses were glued next to each other, made of stone, with wooden ceilings, low doorways and small arched windows. The village was abandoned after the catastrophic earthquake of 1881 and today it is a national monument for the island.

A medieval state of wild beauty, standing proud and proud on the side of a steep cliff 450 meters high. Anavatos has a natural fortification and is surrounded by two gorges, while the entrance to the settlement is only possible from the north. its name is directly related to its location, since it states that it is the place where no one can go up. The founding of Anavatos dates back to the Middle Byzantine times. According to tradition, it was created by the workers who arrived in Chios for the construction of the Nea Moni on Constantine the Monomachus. According to another version, the settlement was created due to pirate raids that plagued the west coast of the island. The old core of the settlement was destroyed during the events of Massacre of Chios in April 1822, when the settlement was besieged and fired by the Ottoman troops. The main settlement was abandoned definitively after the earthquake of 1881 and its remaining inhabitants settled in the lower part of Anavatos, while in 1918 temporary refugees from the coasts of Asia Minor were temporarily settled. The visitor between the stone buildings, the arches, the churches of Panagia and Taxiarchis, is also in contact with a journey in time with the glorious history of Anavatos. The settlement consists of three sections: The Acropolis at the top of the rocky outcrop, Messochori and Neo Chorio, which are spread on the eastern slope of the rock. In the 2011 census, Anavatos had one resident.

Anavatos, the village monument with its tower-like houses, arches and steep cobbled roads, constitutes a beautiful and awe-inspiring place, and the remaining homes today reveal the flavor of this lost village. The main settlement was abandoned definitively after the earthquake of 1881 and its remaining inhabitants settled on the hillside, in the lower part of Anavatos.

Its first settlers, according to tradition, because the area had many forests, were special woodcutters who invited the Emperor Constantine the Monomachos from Constantinople to build the Nea Moni. However, piratical raids forced them to withdraw for security at the adjacent steep cliff of 450 meters high. Here they built a second settlement with four hundred houses, schools, churches, courthouses, a prison with an admirable architecture, working the stone in formations of narrow arched windows and doors. Buildings cross small graphic slopes. The whole village with the natural rock wall is a fortress castle. In the revolution of 1822, after the brave resistance, the Anavatouss, along with other Chians who had resorted to the fort to save themselves. In the southeast of the Castle near the Church of Our Lady, the women of Anavatos, who exchanged life for the price of heroic death, falling into the cliffs below them.

The settlement has special value from the particular technique of the buildings. Internally, at the beginning of the unique entrance of the Castle, to the east, the building complex with three stored dominates the landscape. It consists of olive press, the school, the water repository and the Church of Virgin Mary. In the ground floor is the Olive Mill, with the huge stones where the olives crumble to get the oil out. On this Doctorate (two rooms, which were the school) and next to it the Tank, in which large clay channels gathered the rain water, to be used by the inhabitants in case the village was blocked by the enemy. The

roof of the Reservoir is the floor of the Church of the Virgin Mary, with a double roof, celebrating on November 21st. Today only one aisle is preserved. In the sanctuary there is the mural painting of Pantokrator (17th century) and on the southeast floor there are traces of the traces of the Turkish manslaughter of 1822.

Fig. 47. Anavatos

3.2.2.4. Accessibility

We define accessibility as communication with the public, easiness to experience tourism products and services at destination level, and appreciation of the atmosphere of the place. It includes the existence of a strategy for tourism management at the metropolitan level, the quality of information and hospitality, the presence and quality of secondary or complementary tourist services, internal and external accessibility, attractions and

events. Heritage places should be accessible to everyone, including people with mobility or sensory impairments, the elderly, parents with small children and anyone who is temporarily disabled as a result of illness or injury. Improved access can open up wider markets for owners and managers, which could be promoted to increase visitation. Remaining inaccessible, centrally subsidized heritage resources are offered to the tourism market below cost: local and national tax-payers carry the burden of sustaining quality. This fact is especially evident in the case of Chios, an island with unique natural and cultural features at global level. Analyzing the prefecture's basic and specific image, we concluded that prefecture reflects in the time period 1970-2000 a negative image (in 1971 Chios lies in the interval -0.5195, in 1981 in -0.4655, in 1991 in -0.4977 and in 2001 in -0.5476), revealing a low development rate. The situation has worsened in the decade 2000-2010 followed by the refugee flows since 2012 and the financial crisis in Greece. In 2017 the GDP per capita was 88% of the national, with a low occupance rate 26% across 1402 businesses; and only 49427 tourism arrivals, from which museum & sites admissions reached 16665 visitors. In order for the destination to improve its tourism image, a distinctive reference image is required and this image has to be communicated to visitors and locals. Creating this image, also the inclusion of visitors with special needs is required together with heritage particularities and other distinctive and significant features in a holistic planning process. Once a specific identity is created, it has to be communicated to the outer world including the large segment of visitors with special needs worldwide. A detailed access audit could assess and document the barriers to access which exist within a place and its surroundings. Once an access audit and conservation

assessment has been completed, an access plan can be prepared reconciling, where necessary, the needs of access and conservation.

Physical Accessibility

A proportion of the population which participated the ADHOC research in IO declared some form of disability such as poor eyesight, poor hearing, learning difficulties or impaired mobility. The major travel constraints cited were problems with accessing the site at physical level. The lesson learnt is that heritage should not be managed as luxury accessible only to specific groups among the visitor population and that planners and the local authorities have to ensure that people with physical disabilities have access to the same information necessary for safe and meaningful visits to heritage environments. For individuals with physical disabilities any change in grade including stairs and some ramps are severe barriers. Existing paths or trails should be evaluated to determine if their grade, alignment, width, and surface material are appropriate. Other outdoor features, which currently do not exist at the site such as drinking fountains, trash receptacles, and interpretive exhibits should be designed in such a way that they are easily reachable and understandable by everyone. However, due to is terrace like and stony terrain, Anavatos is considered to be the least accessible site and the motivation to include it into an assisted by friends and relatives cultural visit is almost inexistent. Recreation facilities do not exist in the area, which is inaccessible also by today's means. There is no indication that facilities including swimming areas, camping grounds, picnic areas, playgrounds, and ball fields, will be offered aby time soon to the public and more particular to individual with special needs

Numerous factors affect also the design of a visitor space, reflecting the unique circumstances of Anavatos and the nature of the materials presented. Not always have planners control over the space. One of the best solutions to landscape accessibility is to minimize the distance between arrival and destination points. This may require accessible parking, with curb cuts and a path within easy reach of an historic building, picnic area, or an interpretive trail. For the historic site of Anavatos, that is very steep or composed of massive terracing and steps may prohibit full access without damage to the character of the property. In this case, partial accessibility to some elevations may be necessary, so as to motivate the family or friends to decide to support the visit. Offering holistic accessibility in recreation environments means to provide the highest level of accessibility possible and feasible for persons with visual, hearing, mobility, and mental impairments, consistent with the obligation to conserve heritage resources and preserve quality of visitor experiences for everyone. Access measures and guidelines should articulate key areas of concern and propose generally accepted solutions.

Cognitive Accessibility

What is known about the site by the majority of the respondents, is its medieval operation as a refuge from piracy. However, there is no deeper knowledge of the history of the site and its inherent values in all historic periods including its role during the Greek War of Independence (1821). The role of the site during the Masscre of Chios by Ottoman troops in 1822, which has inspired the painting of Eugene Delacroix, is not directly associated with the act of resistance in Anavatos. Due to the diversity of uses that the site has had in the past and symbolic meanings that the site has today the variety of interpretive me-

dia are important. Required are digital media, which could include revisit information and thus motivate the physical visit. In the case the Ministry of Culture or the Municipality plans specific programs, services, and opportunities available for visitors with disabilities, these have to relate to the barriers which are present in Anavatos, for example explanatory panels with Braille texts, these have to be timely communicated. Audiovisual programs including video programs, audio and interactive programs are just one component of the overall visitor experience and planner have to adapt their use to meet needs and requirement of these specific populations. However, at the time of the research, those possibilities have not existed.

Emotional accessibility

The central concern though is to communicate *the message* to the largest audience possible, so the planners should focus in facilitating communication through physical modifications and alternative presentation media. Interpretive presentations, which include outdoor interpretive exhibits and signs, orientation shelter exhibits, trailhead exhibits, and bulletin boards, offer special advantages to visitors with disabilities. Photographs, artwork, diagrams, and maps, combined with highly readable type, make wayside exhibits an excellent medium for visitors with hearing and learning impairments and should are placed at accessible pullouts, viewpoints, parking areas, and trailheads. For visitors with sight impairments, waysides offer large type and high legibility. Nearly everyone benefits from high quality publications. A variety of digital publications could be offered to visitors, ranging from folders which provide an overview and orientation to a heritage setting to more comprehensive handbooks, however the most sought me-

dium is the digital storytelling and if, possible in a multimedia environment, which can be seen or heard more easily than print media, this possibility has been evaluated as more suitable to create an emotional impact. Heritage operators should make available in their publications a brief description of services available to visitors with disabilities, list significant barriers, and offer more specialized information about a specific site or topic.

Fig. 48. Anavatos

3.2.3. Avgonyma

Fig. 49. Avgonyma

Category: Built Heritage

Type Fortified Settlement

Website Location Southern Chios

Country: GREECE

Region: NORTH AEGEAN_EL41

Locality (town, village): Avgonima

Address (street, number):

Geographic location (coordinates, altitude, relief, waters): 38.376751, 26.020960

Access: Municipal Road

Ownership Owner/administrator: Ministry of Culture

Functions

Present function/ since when: 1082

Previous functions/ period (start date-end date for each):

This is a village in central Chios, at 16 Km from the capital, on the west side of the island, and at about 6 Km from Anavatos. The name of the village, according to Konstantinos Amantos (literary figure), derives from the local name "Avgonimata" (an area between Avgonima and Anavatos), which - in Greek - means "low - value fields". The village is very old, probably pre-mediaeval. Hieronymus Giustiniani has referred to the village as a fortress, which, according to legend, was devastated by pirates. Elinta (or otherwise Alinta, Alous, Alounta or Eleounta) is a sheltered bay on the west of the village - Archaeo - logical excavations on the area have revealed finds dating from the Romans. The scarcity of fresh water - a great problem for the local people - has been commemorated in a verse, written by some unknown visitor to the area in the past, which is still said nowadays: "Avgonima is a nice village - with a disadvantage, though. By the time you pour the water, the pot has burnt!" This is still another proof of the choice of the places for habitation, not only according to the fertility of the land and the abundance of fresh water but also with the needs for protection against invaders in mind. During the 19th century, the people of Avgonima used to carry goods from one place to the other on their mules, or buy the local produce of the northern villages, pack it and resell it at a profit. There was an open-air weaving area in the village, counting at least four looms, on which they made different kinds of cloth for sale. There's a photo of women weaving in the book of H. Pernot (1901). When the village was

connected to Chios with new roads, most of the villagers - even women - turned to the production of coal. This is a profession still prospering nowadays. In the 1970s, many men from Avgonima worked at the harbour of Chios as porters. The first signs of immigration to the USA were documented in 1916. Since then, many families have left their village in pursuit of a better future. After World War II, many of the doughnut makers in N. York were from Avgonima, having been instructed on the profession by Antonis and Nikos Mendinis, experts in the field, who came to N. York at the beginning of the 1950s. Many traditions characterize this village, related to the religious ceremonies. Among them, the "wedding" calls for a three-day celebration, during which people enjoy a meal of chicken, offered by the neighbours to the newly - married couple, washed down with "souma", a local drink of Kourounia village. At the wedding of G. Sgouros, who is now the oldest resident, 80 Kgs of "souma" were drunk (1930). At the last weekend before Lent, a bagpipe was brought to the village by musicians from Ag. Georgios Sikousis or Lithi, which was used to entertain the men of Avgonima only. They used to call at every house in the village and finally gather at the pub in the square. On the night previous to Resurrection day, a huge fire is made outside St. George 's church on the main square, on which Juda's fugure is burnt. Lots of visitors come to the village on the night to see the fire and congregate at the Church at 10 p.m. At Christmas, villagers used to take slaughtering their pigs turns in, then distribute the meat to all the other families of the village. In this way, everyone had his share of pork for a long period. The village produce included olive oil, grapes and wine, as well as dairy produce from the many goats, which the locals took ferns in herding. The bark of pine-trees was used in tanneries, and carob was

also traded. The local brook is home to eels, which are caught by the villagers.

Avgonima is a medieval village in the heart of Chios and at a distance of 16 km. from the city of Chios on a route that will enchant you as on one side you will see the city of Chios and on the other a unique pine forest. The village is built at a height of about 500 meters. It was founded and inhabited by the workers of Nea Moni in the 11th century AD. It is one of the medieval villages of the island with its unique fortress architecture. The houses are built of stone and with small windows that were used to protect themselves from pirate raids during the Middle Ages. Even today, they retain the architecture of the past. The village overlooks the pine forest and the endless blue of the Aegean Sea. Most of the houses are restored and are inhabited by few remaining residents of the village but also by many lovers of tranquility and idyllic scenery enjoying their holidays. The village is surrounded by the pine forest of Provatas and several olive groves, making the landscape idyllic and enchanting for visitors. Built on a hill there is a balcony in the Aegean, since from its western sides one can see Psara and the distant Euboea and enjoy the enchanting sunset, one of the most beautiful of Greece.

Three types of building complexes characterize the settlement:

A) blocks of four to ten houses in an irregular arrangement between them the buildings are joined together with at least one common side the outer surface of each block is non-linear, but zickzacked and there are placed the openings and the yards;

B) blocks of houses /facades of the buildings form a continuous straight surface the buildings are joined by common partitions only on their long side the yards are opened;

C) Buildings with a fortification character (formation of the castle wall), located on the perimeter of the village and have large open spaces.

Fig. 50. Avgonyma

3.2.3.1. Description (history, features etc.):

The origin of the name is uncertain, but two are the most likely interpretations. The first one from the name (cf. the ancient municipality Evonimon or "Evonymia" of Attica). The second one, based on the type of Avgonimata (location between Avgonima and Anavatos), to give the etymology of the estates, i.e. the land that is easily sold. The historian Zolotas prefers a third etymology, from the Euonymus plant and its plural in the Chian idiom. Whatever of the above is true, it is certain that the name does not originate from the egg, and therefore it is written with "αυ" even if the egg is to be written with "β" in the Greek language. The inhabitants of were called by the inhabit-

ants of the village of Pitios "Merousous", meaning wood cut-ters, something for which the inhabitants of Anavatos were mainly known. The village, like the neighboring Anavatos, is the oldest, pre-medieval castle village, and according to a local legend it was created by the workers who built the majestic Nea Moni in the 11th century AD and then remained in Chios. The houses are built of stone and with small windows, to be protect-ted from pirate raids during the Middle Ages. Traditionally, the village was once destroyed by pirates, just like Anavatos. The neighbourhoods of the village are basically the Lower and the Upper Avgonima, and the Pyrgos, Paliopyrgos, Exoporta, Cho-rostasi, Poulia and Vlavaika. Locations in the area of the village are Kefalas, Dylomythos, Gorge, Lagougia, Kampi, Achishous, Horri, Prinari, Xerokambi, Plaka, Chalassontas, Stenohoni, Se-lales, Castamonitis, Volha, Baritaria, Lemma, Panoklisia and Livados.

Avgonima are assigned to Holy Metropolis of Chios, Psara and Oinousses. The parish church (the "chapel") of Avgonima is honored in the name of St. George. Old churcheschapels in the area of Avgonima are Lady Mary and Agios Isidoros at Avgoniyma.

3.2.3.2. Asset significance

Designations

Title of Government Gazette: Αρμόλια, Αυγώνυμα, Βουνό, Ελά-τα, Έξω - Δίδυμα, Κέραμο, Κατάβαση, Λιθί, Παρπαριά, Πιρα-μά, Τρύπες, Χαλκειός, Ζυγιά, Καλαμωτή (μεσαιωνικό τμήμα) και Βολισσός της νήσου Χίου

ΦΕΚ-198/Δ/88.

ΦΕΚ 198/Δ/88 (χαρακτηρισμός)

 • Αρ. 5086 Π.Ε./88 (ΦΕΚ 310/Δ/88)

• Αρ. 3061/31.10.94 (τροπ/ση)

http://www.ypai.gr/cms_files/dynamic/c66103/law.document
/paradosiakoi_oikismoi.pd f_el_GR.pdf

3.2.3.3. Statement of Significance

The way of the development of the settlement is a fortification, a fact that is demonstrated by the center of the village with the square around which small residences are arranged and with the outer side forming the protective wall. Outside of the wall is formed a second built zone. At the edges of the village there are individual buildings of a fortress character that are evidenced by the small openings on the upper side of the outside walls with respect to the settlement. Generally the streets of the settlement are spacious with a small height of side houses and such cases are an exception. A special case is the road that leads from the entrance of the village to the central square is the largest and wider road in the settlement and connects the road network with the village center. It is asphalted and on the side the courtyards of the houses are opened and the other smaller dirt roads are perpendicular to the main road.

3.2.3.4. Accessibility

We define accessibility as communication with the public, easiness to experience tourism products and services at destination level, and appreciation of the atmosphere of the place. It includes the existence of a strategy for tourism management at the

metropolitan level, the quality of information and hospitality, the presence and quality of secondary or complementary tourist services, internal and external accessibility, attractions and events. Heritage places should be accessible to everyone, including people with mobility or sensory impairments, the elderly, parents with small children and anyone who is temporarily disabled as a result of illness or injury. Improved access can open up wider markets for owners and managers, which could be promoted to increase visitation. Remaining inaccessible, centrally subsidized heritage resources are offered to the tourism market below cost: local and national tax-payers carry the burden of sustaining quality. This fact is especially evident in the case of Chios, an island with unique natural and cultural features at global level. Analyzing the prefecture's basic and specific image, we concluded that prefecture reflects in the time period 1970-2000 a negative image (in 1971 Chios lies in the interval -0.5195, in 1981 in -0.4655, in 1991 in -0.4977 and in 2001 in -0.5476), revealing a low development rate. The situation has worsened in the decade 2000-2010 followed by the refugee flows since 2012 and the financial crisis in Greece. In 2017 the GDP per capita was 88% of the national, with a low occupancy rate 26% across 1402 businesses; and only 49427 tourism arrivals, from which museum & sites admissions reached 16665 visitors. In order for the destination to improve its tourism image, a distinctive reference image is required and this image has to be communicated to visitors and locals. Creating this image, also the inclusion of visitors with special needs is required together with heritage particularities and other distinctive and significant features in a holistic planning process. Once a specific identity is created, it has to be communicated to the outer world including the large segment of visitors with special

needs worldwide. A detailed access audit could assess and document the barriers to access which exist within a place and its surroundings. Once an access audit and conservation assessment has been completed, an access plan can be prepared reconciling, where necessary, the needs of access and conservation.

Physical Accessibility

Avgonima is a medieval village in the heart of the island of Chios and at a distance of 16 km. from the city of Chios embedded in the other a unique pine forest. The village is built at a height of about 500 meters. The village is surrounded by the pine forest of Provatas and several olive groves, making the landscape idyllic and enchanting for visitors. However, it is designed as a medieval fortified settlement and this poses several obstacles for the free movements of people with special needs. The houses are built of stone and with small windows retaining the architecture of the past. Most of the houses are restored and are inhabited by few remaining residents of the village but also by many lovers of tranquility and idyllic scenery enjoying their holidays. Generally, the streets of the settlement are spacious with a small height of side houses and such cases are an exception. A special case is the road that leads from the entrance of the village to the central square is the largest and wider road in the settlement and connects the road network with the village center. It is asphalted and on the side the courtyards of the houses are opened and the other smaller dirt roads are perpendicular to the main road.

Still accessibility to the village mainly depends of the will and motivation of the supporting family members or friends. In comparison to Anavatos, where parking is a challenge, the ac-

cess Avgonyma is quite enhanced due to the local topography. Still barrier free access is not ensured for people with special needs, mostly with visibility and motoric concerns.

Cognitive Accessibility

Not much is known about the village history and its inherent meanings. In order for heritage resources to be mentally, emotionally and spiritually accessible, they have to be presented in a visitor-centric way. Heritage assets should be presented on the basis of their meanings, explaining inherent values and significance. Without suitable presentation and appreciation of what is being valued and therefore conserved, cultural assets remain meaningless to the majority of visitors the understanding of local history, a powerful tourism attractor, is lost. The research has revealed that also visitors with special needs wish to discover what is unique about a place and its people, as in the cease of Avgonyma, which despite the local knowledge of the scenic beauty and the local cuisine on the spot, not much is known about the village as a particular cultural asset. Cognitively accessible presentations add value and visitor are willing to pay a premium price for the right experience: It is the overall accessibility to heritage place that will define its identity and hence the difference in the market. Thus, the main aim of IO2 is to satisfy the needs and expectations of experience-seeking visitors. Visitor centred communication policies and staff with basic interpretive skills play a significant role: it is not just a collection or a site visit that ensure satisfaction, therefore managing authorities should give close attention to continued professional development of those involved in the heritage. Access to the resources should be provided also for visually and hearing-impaired, as well as physically disabled visitors. This may

call for special applications that feature or involve an adaptability software.

Emotional Accessibility

The village, like the neighboring Anavatos, is the oldest, premedieval castle village, and according to a local legend it was created by the workers who built the majestic Nea Moni in the 11th century AD and then remained in Chios. The houses are built of stone and with small windows, to be protected from pirate raids during the Middle Ages. Traditionally, the village was once destroyed by pirates, just like Anavatos. However, this information is not able to provide visitors with ab emotionnal impact. As any monument, Agnonyma has a role to play in heritage education and interpretation, informing visitors of the cultural and natural resources of both the site and the island. Good storytelling could encourage visitors develop a sense of stewardship for Avgonyma and the values it stands for. Facts about Avgonmyma should carefully chosen by ADHOC on an interdisciplinary basis, in order to identifies and presents to the audience with special needs the diverse intangible and universal inherent values of Avgonyma. The story should focus on the multiple perspectives and the relationships of events, encouraging visitors with special needs and also their families and friends to derive personal meanings. The story shall represent the monument providing guidance on the artistic achievements allowing the selected target publics to understand causal and functional relationships, alternative hypotheses, and the nature of evidence. Gaining these insights involves multidisciplinary research, critical examination of evidence, selection of facts, and synthesis of these facts into meaningful interpretive narratives. Accessible presentations that desire to address the emo-

tional dimension of the human nature is not just a collection of static facts; rather they seek to provide visitors with a better appreciation and understanding of resources and experiences. Central themes shall be discussed within IO2 and IO3 in an attempt to organize known facts into illuminating and provocative patterns for the enjoyment of Avgonyma and its communication to the community of people with special needs and their social peers.

3.3. Desk-top research for least accessible sites in Italy

3.3.1. HISTORY-ARCHAEOLOGICAL HERITAGE (HIGHLIGHTS)

We have selected three cases of Archeological Sites from the Suburbs of Rome (Roman Country) that can be considered as case study for AD HOC project due to the presence of several important point of interest not easy to be accessed in many cases, especially if compared with the status of Historical Centre of Rome.

They are close to Rome and belong to a common cultural heritage strongly related to GRAND TOUR époque.

The historical periods covered in each site are different and of multiple interest ranging from Ancient Roman period to renaissance period.
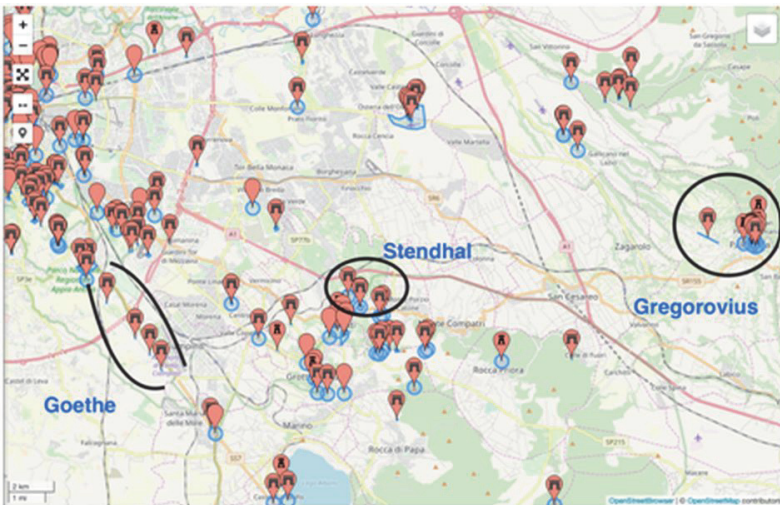

Fig. 51. Sites map

Each of the three places is labeled with the name of a famous writer whose work and testimony is linked to the place itself.

3.3.1.1. Site 1 (GOETHE sightseeing tour): Appia Antica and its least accessible sites

The Via Appia Antica is the old Roman Appian road, one of the oldest and one of the most important and remarkable roads from Rome. During ancient Roman times, the road was essential in transporting troops down to the port of Brindisi in southeast Italy and a sort of bridgehead for commercial and administrative links with Greece and the East.

Tourist attractions along the Appian Way include a plethora of monuments and sightseeing such as the Catacombs of San Callisto and Catacombs of San Sebastiano, Cecilia Metella and Villa dei Quintili archeosites, the Park of Tombe della via Latina, the complesso degli Acquedotti, Villa dei Sette Bassi, and Circus of Massenzio, as well as various basilicas and tombs. The ruins of the Appian Way and the Roman countryside arose profound suggestions and emotions in numerous protagonists of European culture between the 17th and 19th centuries. Among the writers Byron, Stendhal, Chateaubriand and in particular Goethe.

The stretch close to Rome of the Via Apia Anticay is now part of a nature and archaeological park, the Parco Regional dell'Appia Antica. It makes a lovely day out, particularly on Sundays when the area is closed to traffic.

It is quite easy to visit the Appian Way at any time either by public bus or the Big Bus hop on, hop off Archeobus service, and of course there are tours as well.

3.3.1.2. Site 2 (STENDHAL panoramic tour) : Villa Mondragone and its renaissance park

Villa Mondragone is one of the twelve Tuscolan Villas built by the papal nobility in the 16th century in the countryside of Frascati, currently located in the territory of the municipality of Monte Porzio Catone, in the Castelli Romani. The building's history of the Villa began in 1567 when Cardinal Marco Sitico Altemps purchased from Ranuccio Farnese, Cardinal of Sant'Angelo, some ground. The first imposing nucleus of the Villa, built on the imperial ruins of the Villa dei Quintili, Roman consuls until 151 AD, was built between 1572 and 1574 based on a design by Vignola's pupil, Martino Longhi the Elder. The Villa takes its name from the name of Mondragone in honor of the dragon that stands on the papal coat of arms of Gregory XIII (Cardinal Ugo Boncompagni). In those years, the Villa became a popular destination for people linked to the pontifical court and the scene of important events, including in 1582, the historical event of the issue of the Bull for the establishment of the Gregorian Calendar by Pope Gregory XIII. In 1605 Cardinal Scipione Borghese (Paolo V) succeeds the pontifical throne and in 1613 buys the Villa and other properties from Duke Giovannangelo Altemps, heir to the substantial patrimony of his cardinal grandfather. Thus began the second important phase of the works in Mondragone in order to restructure and expand the Altemps property, whose works were entrusted to the Flemish Giovanni Vasanzio. Until 1741 the Villa enjoyed fame and splendor, then a period of decline began until 1896, when it became the property of the Jesuits and the seat of a prestigious boarding school. Finally, the Villa was sold by the Jesuits to the Tor Vergata University of Rome in 1981. This choice was dictated by the desire of the Jesuit Fathers to continue the cultural,

scientific and pedagogical mission that has always character-ized the Villa.

Fig. 52. Villa Mondragone and its renaissance park

3.3.1.3. Site 3 (GREGOROVIOUS tour) : The National Archaeological Museum of Palestrina with The Temple of Dea Fortuna in Palestrina and Archeotours

The National Archaeological Museum of Palestrina is housed in the Renaissance Barberini palace, on the top of the ancient sanctuary of Fortuna Primigenia. In the rooms of the Museum, spread over three floors, the most important finds from ancient Praeneste and its territory are exhibited, sorted by major the-mes that embrace the main aspects of the history, culture and artistic productions of one of the most important and flourish-ing cities of ancient Lazio. The rooms on the first floor host works related to the cult of Fortuna – such as the head of the cult statue of the goddess, found in the Sanctuary inside the so-

called well of the sorts, and the colossal statue of Isis-Fortuna, an original Hellenistic in gray marble of Rhodes -, Roman copies of Greek masterpieces, honorary statues, portraits and reliefs of the republican and imperial age. One of the famous Grimani reliefs dates back to the Augustan age, an admirable artistic expression of the Augustan political program of pacification and rebirth, perhaps the work of the same sculptors who decorated the Ara Pacis in Rome.

Fig. 53. Palestrina

On the second floor are exhibited materials found in the necropolises, including cysts and bronze mirrors adorned with refined engraved decorations depicting rare versions of ancient Greek and Italic myths, and numerous votive and architectural terracotta from the city sanctuaries. On the third floor, a single room houses the grandiose polychrome mosaic of the Nile, a perspective view of the Egyptian landscape during the flood of the Nile, created by Alexandrian artists at the end of the second

century BC. It is one of the largest and most important Hellenistic mosaics preserved, an absolute masterpiece in composition, chromatic taste and richness of details. In the archaeological area in front of the museum you can visit the imposing remains of the Fortuna Primigenia sanctuary, structured in a series of artificial terraces connected by ramps and stairways. It represents the greatest example of Hellenistic architecture in Italy, inspired by the monumental scenographic complexes of the Eastern Aegean, so much so that it was chosen as the "Italian Wonder" to represent the Lazio region as part of a project promoted by the National Youth Forum on the occasion of the 150th anniversary of the unification of Italy.

Gregorovius described the view from the palace: Rome to the north, some of the Castelli Romani and Segni to the west and Anagni and Ferentino to the south.

Gregorovius made Palestrina popular among German readers and spending a summer in one of the towns described in his books became fashionable. Among others, Thomas and Heinrich Mann spent a summer in Palestrina.

3.3.2. ACCESSIBILITY

3.3.2.1. Example: APPIA ANTICA ARCHEO-TOUR

Historic and archaeological itinerary from San Sebastiano Cathedral to the alley of Tor Carbone.

It's a guided tour on foot along the ancient *Regina Viarum*, the Queen of the Roads, a unique place a few steps away from the city centre. Starting from the slab of marble with the famous footprints of the Lord into the Domine Quo Vadis church, we

will proceed toward the most important monuments and archaeological sites, such as the private Villa of Massenzio emperor and his Circus, the Mausoleum of Romolo and the Tomb of Cecilia Metella.
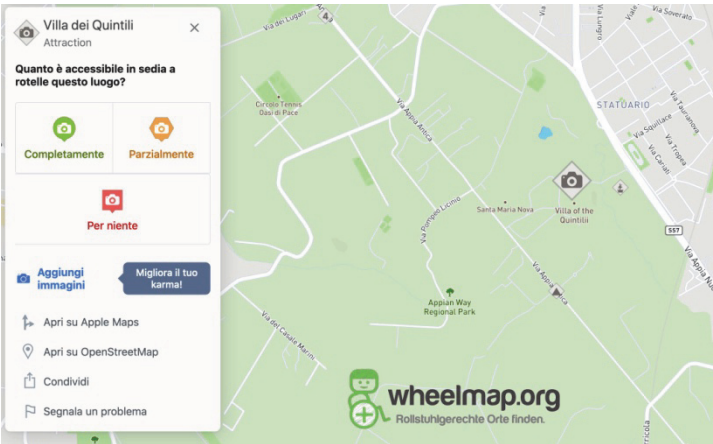

Fig. 54. Appia Itinerary

Fig. 55. Example of accessibility map in Appian Park at Villa dei Quintili

You will walk on the first stretch of the cobblestones, the original Roman paving marked by the railways of the chariots during the past centuries.

Fig. 56. Appia Antica archeo-tour

Starting point:
from the square of San Sebastian Church at 136, Via Appia Antica

End point:
at the corner between Via Appia Antica and Cecilia Metella.

Free entrance:
Circo and Villa di Massenzio, Tomba di Cecilia Metella (free for minors), Villa Capo di Bove

Duration:
2 h and 30 minutes

Distance:
about 2 km

Difficulty:
Easy

Accessibility:
paved road/sampietrini/cobblestone/dirt road

3.3.2.2. Example: Villa MONDRAGONE and its Gardens

The Villa Mondragone belongs to one of the most impressive, still surviving villa estates laid out at Frascati. Situated on an imposing terrace against the northwestern slope of the ancient Tusculum Hill, it enjoyed breathtaking vistas of the Roman countryside. The owners, first Cardinal Altemps and then, from 1613 onward, Scipione Borghese, derived their prestige from the villa's architectural improvements, paid for, in part, by profits from their agricultural undertakings. One of the central features, overlooking the private garden, or *giardino segreto*, with its boxwood parterres, was the water theater, which still survives in a slightly dilapidated form. Built for Cardinal Scipione Borghese by the Roman architect Giovanni Vansanzio (Jan van Zanten) in ca. 1618, this semicircular structure is reminiscent in form and decoration of Carlo Maderno's water theater at the Villa Aldobrandini.

Villa Mondragone was built in 1573-1577 by Cardinal Marco Sittico Altemps and it was designed by Martino Longhi il Vecchio. Cardinal Altemps had been a supporter of the election of Pope Gregory XIII and he was on very friendly terms with him, who was often hosted at Villa Mondragone in a specially decorated apartment. The villa became known as Monte Dragone because

of its location at the top of a hill and because it was decorated with many dragons, the heraldic symbol of Pope Gregory XIII.

Fig. 57. Sala delle Cariatidi
(*built at the time of Cardinal Altemps, whose name can be read on the lintel of a door*)

Fig. 58. (left) Entrance to the courtyard; (right) portico and loggia

Cardinal Altemps built *la Retirata* (the Retreat), a separate small palace, for his son Roberto and his wife Cornelia Orsini. Cardinal Altemps acquired the fiefdoms of Monte Porzio Catone and Montecompatri which were situated near the villa to form what was called Status Tusculanus (Tusculum being the ancient name of Frascati).

Fig. 59. Teatro delle Acque (Theatre of Waters)

We went to another house and garden not far distant, on the side of a hill called Mondragone, finished by *Cardinal Scipio Borghese*, an ample and kingly edifice. Cardinal Scipione Borghese, nephew of Pope Paul V, was a main figure of the Roman scene at the beginning of the 17th century. He started to build a villa (today known as Villa Torlonia) to the east of Frascati, but in 1613 he exchanged it for Villa Mondragone together with the fiefdoms of Monte Porzio and Montecompatri. Cardinal Borghese expanded the Status Tusculanus by buying Montefortino from the Colonna and other properties between Villa Mondragone and Rome. He commissioned Giovanni Vasanzio,

an architect who worked at many Borghese properties, the enlargement of the main building of Villa Mondragone. This was done by incorporating *la Retirata*.

Fig. 60. (left) Fontana dei Draghi;
(right) detail of the portico in the main courtyard

It has a very long gallery, and at the end a theatre for pastimes, spacious courts, rare grots, vineyards, olive-grounds, groves, and solitudes. The air is so fresh and sweet, as few parts of Italy exceed it; nor is it inferior to any palace in the city itself for statues, pictures, and furniture; but since it is of later date, we could not take such particular notice of these things as they deserved. Vasanzio designed a very large fountain resembling a Roman nymphaeum with niches housing ancient statues collected by Cardinal Borghese. However in comparison to similar fountains designed by Carlo Maderno and Giovanni Fontana at Villa Aldobrandini and at Villa Torlonia, that of Villa Mondragone is rather small and it does not include an artificial waterfall (because the villa was already near the top of the hill).

Eagles and dragons were the heraldic symbols of the Borghese. At Villa Borghese in Rome they appear almost everywhere in the decoration of the main building and of the gardens. Eagles and dragons are of the same size, with perhaps the eagles being given more prominence than the dragons. At Villa Mondragone instead dragons were given priority to keep with the name of the villa.

Fig. 61. (left) Chapel - (right) Barco Borghese, a hunting enclosure built above a terrace supported
by ancient Roman walls opposite Villa Mondragone

Maybe because the Borghese had many villas and their maintenance drained too many resources, they lost interest in Mondragone, they removed the works of art from it and in the second half of the XIXth century they sold it to the Jesuits. It is currently rented to the Tor Vergata University of Rome.

Fig. 62. Panoramic view from the Villa towards Frascati and Rome
Cypresses leading to Villa Mondragone seen from Monte Porzio Catone.
The image shows on the left the Astronomical Observatory of Rome
(previously at Villa Mellini on Monte Mario) and Villa Tuscolana, the
white building at the top of the hill

3.3.2.3. Example: Temple of Dea Fortuna ARCHEO-TOUR.

Accessibility of Temple of Dea Fortuna in Palestrina by walking from historical centre and along hills

In 388 BC Praeneste, today's Palestrina, was conquered by the Romans; subsequently the town experienced a long phase of development which was interrupted in 82 BC when Silla punished its inhabitants for having sided with his enemies and confiscated their properties; he assigned them to his veterans and he founded a colony on the plain at the foot of the hill where Praeneste stood; during WWII Palestrina was bombed and this resulted in unearthing some of the structures of the town foun-

ded by Silla inside medieval buildings and some very ancient walls in the upper part of the town.

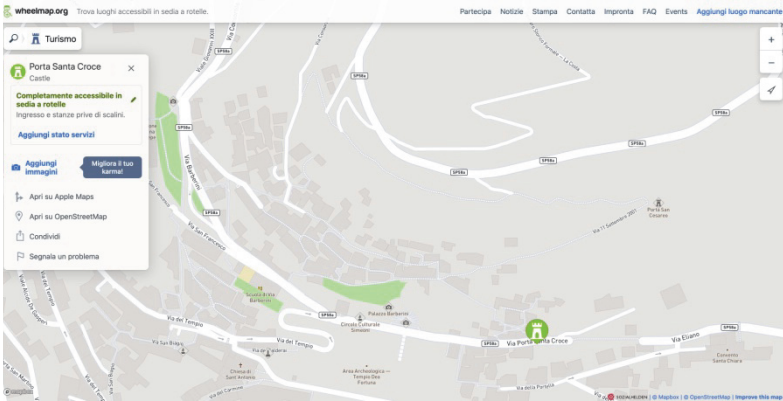Fig. 63. Tactile experience through Mosaics in Palestrina Museum

Fig. 64. An accessible example close to Museum in Palestrina

Fig. 65. A nymphaeum on the first terrace

According to Cicero, Praeneste was the site of a sanctuary known for its very old oracle; archaeologists are uncertain about the date of its construction: IInd century BC or in conjunction with the foundation of the new town by Silla; during the Renaissance the Italian architect Palladio drew a reconstruction of the ancient sanctuary in which also the lower terraces were part of it; today archaeologists tend to believe that these terraces and their buildings and monuments were part of the town, although their design was consistent with that of the sanctuary.

Praeneste is a living catalogue of the construction techniques developed by the Romans; initially they relied on the careful alignment of rectangular stones, but later on they developed an advanced technology in the use of fired bricks and mortar.

According to Cicero, Numerius Sufficius, an important man from Praeneste, was told in a dream to search for an oracle; he found some tablets which were engraved with letters of the al-

phabet; they were probably tossed or picked by random and the priests of the sanctuary based their oracles on the association of the letters (in essence a form of tarot reading); an artificial grotto which enlarged a small natural cave and which is located at the foot of a high wall behind the cathedral was thought to be Antro delle Sorti, the site where the oracle was announced.

Fig. 66. (left) Walls supporting the third terrace in "opus quadratum"; (right) a brick wall in "opus latericium" forming a niche which was added to the structure supporting the first terrace

Fig. 67. (left) Sacred area behind the cathedral; (right) Antro delle Sorti

Fig. 68. Details of the mosaic of Antro delle Sorti

Fig. 69. Palazzo Barberini which was built on the highest structures of the sanctuary

Today archaeologists believe the grotto was part of a fountain which decorated the forum of Praeneste; they have reached this conclusion after they unearthed fragments of a very fine mosaic

which decorated the grotto; its subjects do not seem in accordance with the site of an oracle; Romans were very fond of mosaics depicting sea subjects and they employed them for the decoration of fountains and baths.

The bombs which fell on Palestrina in 1944 damaged many houses which had been built on the three upper terraces of the sanctuary; luckily they did not damage the palace built by the Barberini on the "theatre" which crowned the sanctuary.

Fig. 70. View of the upper terraces

After WWII authorities decided to remove the debris of the bombed buildings in order to unearth the structure of the sanctuary; its upper terraces are impressive and they prove the high technical skills achieved by Roman engineers.

The width of the two ramps leading to Terrazza degli Emicicli indicate that ceremonies involved a large number of people; we can imagine the effect on watchers of processions reaching the top of the sanctuary and more so if we think of them by torchlight.

Fig. 71. One of the two ramps leading to Terrazza degli Emicicli

Fig. 72. Eastern section of Terrazza degli Emicicli

This terrace is named after two identical circular porticoes; one of them was preceded by a sacred well which might have been the place where the oracles were announced; archaeologists

have found some analogies between the structure of this sanctuary and those of the Temple to Jupiter at Terracina and of the acropolis of Lindos (it was turned into a fortress by the Knights of St. John).

Fig. 73. Stairs leading from Terrazza degli Emicicli
to Terrazza della Cortina

The walls supporting the last two terraces are marked by a series of vaulted niches which probably housed statues; their purpose was not merely a decorative one; Roman engineers were aware that curved structures such as arches and vaults were more able to support weight than traditional vertical walls.

The final terrace was much wider than the other ones and it ended with a sort of theatre having on its top a small circular temple; the majesty of the buildings was increased by their being located in a commanding position and by the perfect symmetry of the whole structure.

Fig. 74. Terrazza della Cortina

Fig. 75. (left) Ancient structures inside Palazzo Barberini; (right) statue of
Fortuna Primigenia

For the Romans Fortuna was the personification of luck; the
appellation of Primigenia (first bearer) indicates that the origi-
nal devotion to the goddess was part of the cult of Mother

Earth; after the Roman conquest of Egypt Fortuna Primigenia took some features of Isis, the Egyptian goddess of motherhood, magic and fertility; this last aspect led to depicting the goddess holding a cornucopia, a symbol of abundance. The sanctuary continued to be very popular until most of the 3rd century, when the diffusion of solar beliefs and Christianity reduced the appeal of polytheism. The sanctuary was most likely closed by Emperor Theodosius, but Fortuna continues to fascinate millions of gamblers.

3.3.3. DIGITALIZATION

Appia Antica has several digitalizations carried out by Park Organization and accessible by visitors on demand. Some AR app are *also available* on Google Store.

Fig. 76. 3D Digital reconstruction by ENEA of Temple of Fortune

Fig. 77. Wooden model of Temple of Fortune

Villa Mondragone at the moment has a lab multimedia APP designed by Prof. Angelaccio in the context of SMART VILLA project.

A 3d Wooden Model is available in Frascati Museum useful for *visually impaired.*

3.3.3.1. Example: StoryTelling for Villa Mondragone History

As digitalization example we show the digital course used to describe history of the villa in a more accessible way with a graphical user interface (Timeline interface).

The long years of abandon and neglect, which had condemned the famous "Villa" of the Altemps to silence and oblivion, was broken on the 2nd of February 1865 by symptoms of a new life. Two Fathers, a Master and two lay-brothers of the Company of Jesus took possesion of the buildings, to initiate five young Roman boys to the study of Letters, Science and Good Mannes. Three boys were to be the pioneers of a long and uninterrupted line of youthful students. What had been the story of those old walls up to this day and who had had the inspiration of building this beautiful Manor? Kindly allow me, dear Readers, to give a brief answer to these two questions which perhaps more than one of school-boy has asked himself, since the 85 years of existence of "Our College".

The immense palace, comprising the harmonious reunion of three big buildings, is built on the ruins .of the Villa of the Quintili, which afterwards passed on to Commodo, then to Caracalla and lastly to Emilio Macro Faustiniano; finally the Villa falling into ruins and to complete neglect, followed the same sad fate as the famous feudal City of Tuscolo, destroyed by the Romans (1179-91). But Fortune did not let such a wonderful place remain in oblivion; and so it happened that the most generous Cardinal Marco Sittico Altemps, wishing to gratify the desire of his illustrious friend. Pope Gregory XIII (Boncompagni) - who during one of his visits to the Cardinal's Villa Tuscolana (Villa Vecchia), at the sight of the marvellous beauty of the

place exclaimed: lovely it would be to have a Villa on this spot". - decided to attempt the enterprise. Three years later (1572-75) the first building with its vast gardens and.shady avenues was an accomplished fact, created according to the designs of the architect Martino Longo.

The Cardinal gave the name of Mondragone to the new edifice, on account of its elevated situation and of the half-dragon heraldic design of the coot-of-arms of the Boncompagni family.

However the Cardinal's generosity was far from being exhausted. Not far from the first building and parallel to fit a second edifice called the "Retirata" was built, according to the design of Vasanzio. Laser on, in 1613, Mondragone and other properties were sold by the Duke Gian Angelo Altemps to the Cardinal Scipione Borghese, nephew of the Pope, Paul V, who joined the two buildings already existing to a third edifice and enriched. the whole entire Villa with magnificent masterpieces.

Up to that time, the splendid Manor had been the favourite resort of different Popes. But when Urbain VIII established the Papal Summer residence at Castelgandolfo (1626), Mondragone did not remain uninhabited: even though the Borghese family lived in the lower Villa which was smaller and simpler, Mondragone was used for important receptions and for lodging illustrious visitors. And so it was that until the end of the 18th century the existence of Mondragone, had been full of historical and worldly incidents. But the events in France brought deep changes on the Borghese family and they were no longer to reside in their magnificent palace. Consequently the place fell into ruins and the walls were covered with moss, while many of the wonderful masterpieces were carried away. Finally the inhabitants of Frascati, enraged at the sight of waggons of iron

taken from the windows of the palate, going through the streets of their town, begged the Cardinal Pacca to ask Pope Leo XII to have an end pus to this plundering. Their .petition was granted. However, this was not yet really a revival: many a year passed before the musty smell completely disappeared from the old walls. Don Marcantonio Borghese then decided to destine the whole estate as a permanent abode for a College, especially as he himself had sons to educate. He spoke of his future project to Father Ponza di S. Martino, Provincial of the Company of Jesus and all agreements having been attained, on February 2 1865 the College of Mondragone opened its doors and a short time after on the 21st. of August, of the same year, the College had the honoured and unexpected visit of His Holiness Pope Pius IX. The rapid increase of the number of boarders obliged the Fathers to continue the reparatioins which had been undertaken in 1840 by Donna Guendalina Talbot, first wife of Marcantonio Borghese, reparations which had to be made in all the different parts of the buildings. But in spite of all the walls were no longer sufficient. During the rectorship of the deeply regretted Father Aristide Delmirani (1929-1934), the large aisle built by the Borghese family and the aisle of the entrance-gate were greatly enlarged, so as to be able to contain about 200 boarders. New dormitories and large, bright study halls were arranged within the enlargend walls and for the first division, that is to say the older boys, 45 small one-bedded rooms. On the ground floor, in the large studio, a modern and well-equipped Cinema-Theatre was set up, where, on Sundays and feast days, the boarders meet, not only to see the Pictures, but to act in the theatrical performances whict they themselves organize. Since that time, not a single stone has been added to the building, but we have every reason to believe that before long new, grandiose plans will be realized.

3.4. Desk-top research for least accessible sites in Slovenia

3.4.1. ZAVRČ CEMETERY

Location

The municipality of Zavrč is located in the south-east of Slovenia on the Slovenian-Croatian border. It is one of the smaller municipalities – it measures only 19.25 km² and has about 1500 inhabitants. It consists of nine settlements located predominantly on ridge hills.

Fig. 78. Geographical location of Zavrč in the broader region from Ptuj and Ormož in Slovenia to Varaždin in Croatia
(graphic by Martina Blečić Kavur)

The municipality is characterized by uneven settlement pattern. The number of inhabitants in the more difficult to access hilly area is constantly decreasing and moving to settlements in the valleys. Due to the natural beauties and cultural heritage, agritourism has been developing in the municipality and its sur-

roundings in recent years. The settlement of Zavrč is located on the eastern gently sloping slope of Haloze – the place was once called Saurig or Sauritsch. In the past, the inhabitants were mostly engaged in agriculture – due to land, that was not the most favourable for agriculture, they grew mostly wine and onions.

Landscape

The area of Zavrč has always been extremely important due to its geographical location at the extreme eastern foot of the Haloze hills. The entire area is made of Tertiary sediments, and in the area of Zavrč, there are also clay-gravel backfills of the Drava.

Today's settlement with road infrastructure and border crossing, and the archaeological site below them, is located on the first river terrace, which rises about five meters above the Drava River in the north and the surrounding plain in the east. To the west, the slopes of the Haloze hills begin to rise steeply above the terrace. Today, the terrace area is covered by fields, the foot of the terrace by the river is swampy and overgrown with forest, and the slopes on the west side are vineyards.

Based on the geomorphology, the Haloze hills can be divided into two parts – the Upper and Lower Haloze, with the latter reaching all the way to Zavrč. It is a lower part of Haloze with a predominance of ridges up to 320 meters, which in its history had more favourable ecological opportunities for viticulture, and was at the same timeless distant from the main traffic routes leading from Ptuj down the Drava river.

In the area from Borl to Zavrč, the Drava ran just below the foot of Haloze – due to the narrowness of the stream, in the past, it did not form larger wetlands along the riverbed than it did from

Zavrč to Ormož. The latter were the biggest problem for the river crossing in the past – the ferry was located right near Zavrč and operated until the beginning of the 1960s. Thus, for millennia the area represented the transition from Varaždinsko polje in the south to Ptujsko polje in the north, i.e. the transition from the extreme western part of the Pannonian plains to the Drava valley. The latter represents, next to the Danube valley, the only entrance to the Alps or from Eastern to Central Europe.
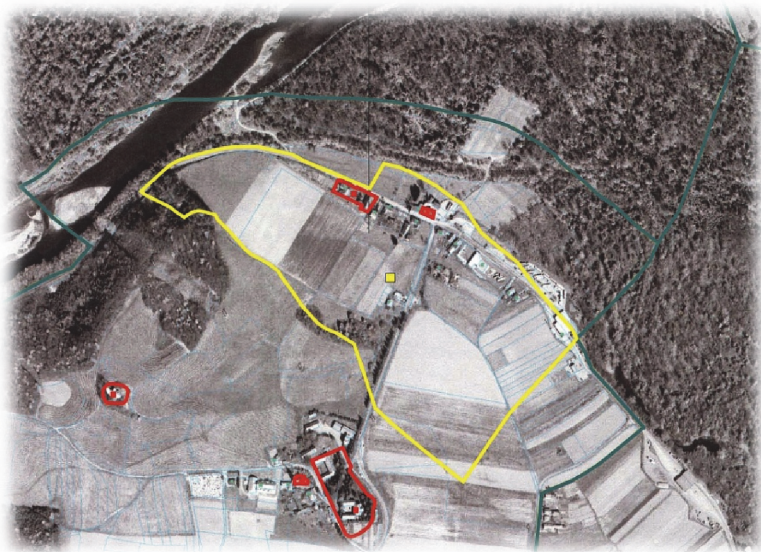

Fig. 79. Archaeological site Zavrč, at the border crossing between Slovenia and Croatia with other protected zones in the wider area

History of the archaeological site

5th millennium BC – Copper Age

1400 – 900 BC – Bronze Age settlement and cemetery

900 – 850 BC – Early Iron Age cemetery

50 AD – Roman military marching camp

200 – 400 AD – Roman settlement by the road

15th century – Medieval village and parish

17th century – castle

As early as the end of the 19th century, individual archaeological finds were known from the area of the north-western extreme end of Haloze and Zavrč – museums kept stone axes and Roman coins. The first detailed inventory with some alleged locations of discoveries was given in the archaeological map *Blatt Ptuj* issued in 1936, where Josip Klemenc and Balduin Saria mentioned that a stone axe was discovered on the hill Vrhovec in Hrastovec near Zavrč, and the second is said to have originated from Zavrč itself.

Archaeological field surveys between 1971 and 1973, led by Iva Mikl Curk, did not yield many results – in the Zavrč area near the Cooperative Home were discovered, during inspections of the construction of new houses, layers with medieval and modern ceramics, which they linked to the existence of a settlement known in the first half of the 16th century. They also assumed that based on Roman remains discovered on the Croatian side, they could assume settlement in this area.

In 2006, they began to widen the regional road and increase the border crossing – this lead to archaeological research led by Marija Lubšina Tušek, which showed that a much richer history is hidden here. Excavations under today's road and the border crossing with Croatia revealed that a medieval road ran almost parallel to today's road, along which stood a medieval village, and under the latter was a Roman road with a roadside settlement, which damaged an even older Roman military camp. Be-

neath all, the remains of a prehistoric settlement and, most importantly, the adjacent Urnfield cemetery from the Late Bronze Age were discovered. Today, the archaeological site is the subject of a national research project research coordinated by a team of experts from the University of Primorska.

Around 1200, the area was torn from Hungarian rule and annexed to Styria. In the old village of Zavrč, west of the archaeological site, there is a manor and the parish church of St. Nicholas, and above the village in the middle of the vineyards is the church of St. Mary of the Assumption.

Fig. 80. Saveritsch – Zavrč. Copperplate from G. M. Vischer *Topographia Ducatus Stiriae* published in 1681 in Graz

The mansion, which developed from the court of Borl Castle, consists of three single-story tracts that surround the arcaded courtyard in the shape of a horseshoe. The main tract was built in the 17th century from the original court of Jakob Szekely of Borl. In 1622, Matija Quallandro, a merchant from Ptuj, got the court as a creditor. One hundred years later, in 1717, his heirs

baroque it and built side tracts. In 1739, Jožef Anton Kliess then bought it. In 1781, it was inherited by Cecilia pl. Lendenfeld, and in 1792, Tomaž Ulm bought it. The castle was rebuilt again in 1817 and remained the property of the Ulm family until World War II. The castle was once a court centre, but today it houses apartments. There are no cultural sights in it.

Gothic single-nave church of St. Nicholas with a late Gothic long presbytery and external buttresses and a bell tower from the second quarter of the 15th century was baroqued in the third quarter of the 18th century. It is believed that the oldest church was built in the 14th century, and around 1430 a parish was established, which until the 17th century fell under the jurisdiction of the Zagreb diocese. Most of the current building dates from 1670, in 1691, it was enlarged and a side chapel was added, and in 1735, a bell tower was added. St. Nicholas was considered the protector of rafters and ferrymen, and until the 19th century, it was in Zavrč one of the most important tollbooths on the Drava.

The single-nave Gothic church of St. Mary with a three-sided presbytery and bell tower on the west façade was built in the second half of the 15th century. A baroque chapel has been added to the north wall of the nave. It has decorated Gothic portals, a mesh ribbed vault and Baroque furnishings - the main altar was made in 1770 by the Maribor sculptor Jožef Holzinger, and it was renovated in 1893. The church was renovated in 1999.

Along the river Drava, or the current road Ptuj – Zavrč, there is a two-storey building with a steep four-pitched roof – the entrance to the wine cellar of the Ulm lordship. It was erected in the 18th century. A semi-circular stone portal leads to a larger arched wine cellar.

Legal status

https://gis.gov.si/MK_eVRDpredpis/p0562_1.pdf

EŠD 14510 – Archaeological site

EŠD 26575 – Village core – urban heritage

EŠD 6518 – Castle – art-historical heritage – a monument of local significance

EŠD 3523 – Church of St. Nicholas – art-historical heritage – a monument of local significance

EŠD 3524 – Church of St. Mary – art-historical heritage – a monument of local significance

EŠD 22263 – Castle cellar – a monument of local significance

Fig. 81. Archaeological excavation of the Zavrč site at the border crossing in 2007

Accessibility

Accessibility
The archaeological site is freely accessible via public road infrastructure. It is located under today's road from the roundabout in Zavrč to the border crossing with the Republic of Croatia.

Visibility
The archaeological site is not presented to the public.

Infrastructure
There is no infrastructure nearby.

Long-term management
Archaeological heritage and other cultural heritage are legally protected. They have no management plan.

Environmental potential
The environment currently does not have a developed tourist infrastructure.

Presentation of finds
Archaeological finds have not been presented to the public – they are located in the warehouse of the Centre for Preventive Archaeology in Ptuj. Some of the finds were presented in the professional literature and at temporary exhibitions.

Importance

The most fascinating discovery in the area of Zavrč, whose cultural and historical significance extends beyond the borders of Slovenia, is a cemetery from the Late Bronze Age. About 58 burials have been discovered, representing one of the longest-running cemeteries in the region, where humans were buried over and over again for almost 500 years – between the 14th and 9th century BC. Therefore, the finds discovered to make it possible

to analyze the changing cultural influences, fashion trends and the ups and downs of trade, which connected the former inhabitants of Haloze with the most important cultural centres of prehistoric Europe.

Fig. 82. Site plan of Zavrč with the chronological interpretation of the discovered archaeological features

The oldest graves discovered date from the 14th century BC. Given the forms of pottery discovered and the typical form of burial, where the dead were cremated and their remains buried in a ceramic pot covered with a bowl, we can assume that the old-

est inhabitants originated in Pannonia or were culturally and spiritually attached to this area. A century later, the rites changed. At the burial, the ceramic vessels were smashed and the cremated remains of the deceased were shaken between them. For the first time, the vessels show shapes that can also be recognized in central Slovenia and further in the Alps.

Fig. 83. Detail of an ornamented urn from the grave 52 of the Zavrč necropolis (photo by Danilo Cvetko)

Another novelty was discovered in a tomb from this period – a small iron knife. One of the oldest in Europe is a harbinger of new technologies and shows the cultural contacts that connected the area of today's eastern Slovenia with the centres in the northern Adriatic and through these with the civilizations of the eastern Mediterranean.

The cultural and economic peak that the inhabitants of the Zavrč area experienced at the end of the 12th and in the 11th cen-

tury BC was also reflected in their burials – from this period originate some of the richest graves discovered in the region, which show that society had to change radically during this time – the ruling class was formed. This was the period when the centres in the Alps experienced their economic rise, producing and exporting bronze and products from the latter.

During this time, fewer and fewer pottery appeared in the graves in Zavrč, and many of the deceased received their bronze jewellery for eternal rest. Among the women's graves with decorated collars, bracelets and ankle-rings, the tomb of a younger lady (grave 16) stands out, which was also given a richly decorated belt made of bronze sheet, pins for a dress and decorative pendant made of bronze wire. It is one of the richest female graves from this period, discovered in Central Europe demonstrating a tradition of cultural influences from the Pannonian area. Different influences are demonstrated by grave goods from the rich grave of a lady (grave 14), who had small bronze rings strung on the collar next to a typical set of costumes, which some experts interpreted as the oldest form of money. Such jewellery mainly shows cultural connections with the Alpine space – with the area from eastern France and Bavaria, to the Zavrč on the east.

Comparing the jewellery and equipment of the two prehistoric women, we can see that culturally different worlds met and merged in this area at that time. In the graves, we can recognize that the prehistoric community in Zavrč played the role of mediators between different cultures from the Alps and Pannonia. They maintained contacts and knew fashions from northern Italy, Bavaria, the Vienna Basin and central Pannonia. It seems as if all the cultural contacts of that time can be recognized mainly in the cemetery in Zavrč. Both the mediating role and

the resulting economic benefit led to the formation of a rich class or the oldest warrior aristocracy. The latter is presented by a grave 7 in which a man was buried, who was given a complete warrior's attire of that time – a bronze spear, axe, knife and razor, which were ritually destroyed at the time of burial. Grave goods from these three graves show that the community that buried its dead in Zavrč was one of the richest at the time, or that it was probably the most important community in the wider region.

Fig. 84. Attire and jewellery from the rich female grave 7 from the Zavrč necropolis (photo by Danilo Cvetko)

In the following century, the area of Zavrč slowly experienced its decline. The more modest graves contained ceramic vessels typical of cemeteries from the Podravje region, rare bronze objects, and mostly only decorative pins, in terms of their decoration and manufacture, originated in the Alps and the pre-Alpine area. In the area of the older cemetery, at the beginning of the Early Iron Age, a few deceased people were buried and earth mounds were placed on their graves.

Eight centuries later, in the last decades before our era, the prehistoric world of eastern Slovenia began to change again. The Kingdom of Noricum, which probably included the area of eastern Slovenia, was first peacefully annexed to the Roman state, and a few decades later Roman soldiers appeared along the Drava. To secure the conquered area, they first occupied strategic outposts in an area such as the old settlement at Ptuj Castle but soon moved east. During this time, a larger division of the Roman army stopped in the area of Zavrč and built a short-term camping camp on the plain above the Drava.

A century later, during the heyday of Roman rule in our places, the area once again became strategically important. A Roman road was built across Zavrč, which ran almost directly below today's regional road and connected two large centres of the empire – Ptuj (*Poetoviona*) in today's Slovenia and Osijek (*Mursa*) in Croatia. Finds from the settlement next to it, as well as from a somewhat distant cemetery, show that the road retained its significance until the decline of the empire in the fourth century when a small fort was probably erected on the ridges to the west. These are exceptional finds, as parts of the settlement were discovered along the road, which may represent the remains of a roadside station called *Remista* in the texts of ancient cartographers.

Once again, the area under today's road was inhabited in the Middle Ages. The original village, which consisted of smaller wooden houses, was erected in the 12th century on the site of a former Roman road, on the location where a few centuries later a medieval road was built, which ran in exactly the same direction. Again, this is a remarkable find – from this time we hardly know the appearance of medieval villages, because they are hidden deep under the current settlements.

3.4.2. SOCERB

Location

Socerb, Italian San Servolo, is a clustered settlement in the south-west of Slovenia below the Karst edge set on a limestone and flysch pier. On the ridge above the village are the ruins of Socerb Castle, and in its vicinity is the Holy Cave. According to legend, it was inhabited in the 3rd century by a Christian saint, the hermit Saint Socerb (Latin *Servulus*).

The castle on the edge of the karst plateau was probably built in the 9th century as a fortress protecting from the Hungarians, and the original tower fortress was probably built after 1040 by the Istrian border count Udalrik of Weimar. It is mentioned in the Middle Ages, when it changed several owners – between 1463 and 1511 it was under Venetian rule. Then it came under Austrian rule and was granted in 1521 to the feud of Nicholas II. Ravbar. After the Council of Trent, it was returned to Venice in 1535 but did not remain in their possession for long. During the Uskok War (the War for Gradišče), it became the property of the Petazzi family (Petač), who had extensive estates in the Karst. In 1633, the latter put the Vilenica cave under the management of the Lokva parish. Due to the document explaining that the parish was able to dispose of the proceeds from the entrance fees collected by guiding in the cave, we could consider Vilenica as the first tourist-arranged cave in the world.

In 1686, Janez Vajkard Valvasor visited Socerb, depicted it, and described the cave. Back then, the castle was a two-winged two-story building with a roundel on the corner, an entrance tower with a square floor plan, and a bastion that protected access to the castle. It was bought by the Archduke's Chamber in 1702

and 1766 passed into the possession of the Montecuccoli family of Modena, who retained it until the abolishment of corvée in 1848. As early as 1780, it was burned down by lightning and was in ruins in the early 19th century. It was acquired in 1907 by Demetrius de Economo of Trieste, and in 1924 and 1925 part of the walls were restored and other castle ruins removed.

Fig. 85. S. Serf – Socerb Castle. Copperplate from J. W. Valvasor Die Ehre dess Hertzogthums Crain published in 1689 in Ljubljana

During the Second World War, it was the seat of the Partisan People's Court and the Security and Intelligence Service, until it was occupied by the Germans in November 1944 due to its strategic position. At the end of the 20th century, there was a restaurant in the castle.

Landscape

Castle is situated on the Karstic edge – this is the landscape where the Karst plateau with a steep, tectonic repeatedly broken edge descends into the flysch landscape of the hinterland of the coast. It represents the geological, geomorphological and

climatic boundary between the two worlds. On the plateau, there is a typical karst relief with karst surface phenomena such as sinkholes and bays, and on the flysch hill below the edge, we can observe a fluvial system on a non-karstic impermeable geological base.

Fig. 86. Aerial view of Socerb Castle

The formation of the edge is due to tectonic shifts – this is the pressure of the African plate on the European and Alpine folds. The latter lifted the Karst edge from the sea, where due to the pressures, the layers wrinkled, broke and overlapped. About 10 million years ago, at the end of the Miocene, the undermining of the Adriatic-Apulian foothills under the Dinaric Alps began, which led to the undermining of Istria with flysch under the Dinaric Alps with limestone. Therefore, we have situations where sometimes-older limestones are located above the younger flysch, which weather faster and form overhangs. The jump be-

tween the limestone slab and the flysch begins in the hinterland of Trieste, extends to Socerb and extends in a 20-kilometre-long and 2 to 2.5-kilometre-wide strip to Mlini on the Croatian border. On the Slovenian side, there are 47 steep walls built of foraminiferal limestone from the Upper Palaeocene and Lower Eocene.

The Karst edge is one of the hotspots of Slovenian biodiversity – it combines the fauna and flora of the two regions that meet on it. Thus, 1688 animal species were identified here, of which 28 were endemic and among them 10 for science new species.

History of the archaeological site

Bronze Age (?) – Finds of pottery in the caves below the castle

5th century BC – Early Iron Age cemetery

3rd century BC – Late Iron Age cemetery

Prehistory – Gradišče on Socerb

50 AD – Roman cemetery

Late Roman period – Finds in the Holy Cave

Middle Ages – Castle of Socerb

History of research

1885 Carlo Marchesetti visits the Holy Cave

1882, 1886, 1898, 1899 Karl Moser explores the Holy Cave and the caves below the castle

1902, 1903 Karl Moser excavates a prehistoric and Roman cemetery – the finds are located in Trieste

1905 Duchess of Mecklenburg excavations at Socerb – finds located in Peabody Museum, Harvard University, Cambridge – Massachusetts.

Fig. 87. The main entrance to the Socerb Castle and the Gulf of Trieste in the background (photo by Martina Blečić Kavur)

At the end of the 19ᵗʰ century, numerous finds of pottery, metal and glass objects, and animal, as well as human bones, were discovered in the caves below Socerb Castle. The finds were dated to the Bronze Age all the way to the Middle Ages, but are lost today.

On the stone plateau behind the castle are the remains of a 120-meter-long, up to 20 meters wide and up to 4 meters high embankment, which is interpreted as the remains of prehistoric hill-fort. At the beginning of the 20ᵗʰ century, Roman mosaic stones were also discovered in the area of the castle, which indicates that a representative Roman building was also located in this area.

In March 1902, during the works for the construction of the Dolina – Kastelec road, some Roman-era graves were found. Between April and June, Karl Moser excavated the cemetery, discovering 111 prehistoric and 54 Roman tombs. A few years later excavated there also the Dutchess of Mecklenburg – preserved are mostly bronze prehistoric finds.

Legal status

https://gis.gov.si/MK_eVRDpredpis/p1036_1.pdf
https://gis.gov.si/MK_eVRDpredpis/p0478_1.pdf
https://gis.gov.si/MK_eVRDpredpis/p0707_1.pdf

EŠD 15087 Podpeč near Črni Kal – cultural landscape Karst edge

EŠD 11170 Socerb – Socerb Castle area

EŠD 1280 Socerb – Archaeological site village

ESD 1279 Socerb – village

EŠD 671 Socerb – Castle – a monument of national importance

EŠD 1321 Socerb – Church of St. Socerb

EŠD 1329 Socerb – Homestead Socerb 13

Accessibility

Accessibility
The archaeological site is accessible. From the motorway and the main road, a marked road leads to the village and the castle of Socerb, where there is a larger parking lot. A well-maintained path leads through the forest to the Holy Cave. The castle and the Holy Cave are closed to visitors.

Visibility

The archaeological site is not presented to the public. There are information boards on the site, presenting the Karst edge and the castle.

Fig. 88. Detail of an old door handle (photo by Mirella Baruca)

Infrastructure

There is no infrastructure in the area. The restaurant in the castle has been closed for a long time.

Long-term management

Archaeological heritage and architectural heritage are legally protected. There is no long-term management plan.

Environmental potential

The monument is located at an exceptional vantage point in the landscape in which tourism is developing. The site has tremendous potential for presentation.

Presentation of finds

A small selection of archaeological finds is presented to the public at the Museo d'Antichita "J.J. Winckelmann" in Trieste as part of a permanent exhibition.

Importance

Due to its location on the Karst edge with a view of both today's Koper and Trieste bays, Socerb gained its importance in prehistoric times. Communication was established along the nearby valley of the river Glinščica between the coastal areas and the Karst and Notranjska. The prehistoric settlement of the Slovene part of Istria and the Trieste part of southern Friuli, on the border of which Socerb is located, is documented by the remains of former hillforts, or the so-called *castellieri* on which various prehistoric remains were excavated. If we compare it with other contemporary sites, Socerb stands out due to its exceptional geostrategic location, security, and above all long-term settlement and an exceptional amount of archaeological remains. On one hand, it is the result of long-term research at the end of the 19th and the beginning of the 20th century, and on the other, it is a concentration of exceptional archaeological heritage in a very limited area.

The most comprehensive approach to understanding the archaeological heritage of Socerb is the project Celts in Friuli when in 2001 the Trieste archaeological profession in the Trieste area sought confirmation of the Celtic presence. The unorganized and forgotten Moser's written, pictorial and material legacy from Socerb was rediscovered in the warehouses of the City Museum. Thus, in one year, the first research study aimed at a thorough presentation of archaeological excavations at Socerb was presented to the general public and in 2002 with an

exhibition and simultaneous publication of the monograph *La necropoli di San Servolo: Veneti, Istria, Celti and Romani nel territorio di Trieste*. In their chapters, various authors have tried to show and prove by analysis of grave finds the role and significance of Socerb as the foundation and centre of the Celtic presence in the Trieste area in the south of Friuli. The contribution, which in individual works subtly exceeded the measures of good scientific taste with mildly disguised irredentist rhetoric, could not adequately culturally and historically evaluate the importance of archaeological heritage and research.

Fig. 89. Detail of the restored part of the Socerb ramparts
(photo by Martina Blečić Kavur)

Fig. 90. The interior of Sveta jama near Socerb, the only underground
church in Slovenia (photo by Boris Kavur)

Socerb is one of the few sites in the broader coastal region
where a large cemetery was discovered, and people were buried
for almost 1000 years – from prehistory to the late Roman pe-
riod. With proper interpretation and presentation, the site has
the potential to connect geology and archaeology, prehistoric
and Roman periods, Antiquity and Middle Ages, the Venetian
Republic and Austria, Italy and Slovenia.

The area of the archaeological site is also of exceptional signifi-
cance for Christian mythology due to the Holy Cave in which
Saint Socerb lived. The latter was born in Trieste (*Tergeste* col-
ony) to the parents of a noble family, but left home at the age of
12 and settled in a cave on the edge of the Karst. He spent an
ascetic year and 9 months in it, and then returned to Trieste.
He was persecuted, and executed in 284 for preaching and mir-
acles, especially the healing of the sick. Today, Sveta jama near
Socerb is the only underground church in Slovenia.

3.4.3. SERVITE MONASTERY IN KOPER

Location

Koper, Italian *Capodistria*, is the sixth-largest city in Slovenia and with more than 25.000 inhabitants the largest on the Slovenian coast. It is the seat of the Diocese of Koper, the University of Primorska and the only Slovenian cargo port. It used to be an island, but in 1827, it was connected to the mainland by a causeway. In the shallows, it was surrounded by saltpans that were filled-in in the 20th century, when the island, with its old town, was finally connected to the mainland.

Fig. 91. Map of Koper/Capodistria from 1819 with the indicated complex of the Servite monastery

Archaeological excavations have uncovered rare prehistoric finds, and from the first century AD, we know of several cores of settlement on the island. As in the case of the villa under to-day's Servite monastery, it is assumed that, these were individual villa complexes with associated buildings. In late antiquity, the entire area of island was inhabited, and in the 6th century, it was integrated within the Byzantine state and named *Iustino-polis*. In the 8th century, Slavs began to immigrate to its hinter-land. In 932, the city was connected to Venice, and in 1186, it became a free commune with elected city government. Later, the town was ruled by Istrian border counts and Aquileian pa-triarchs, who chose it as the seat of their estates in Istria and named it *Caput Histriae*, which later became Italianized in *Capo d'Istria*. In 1279, the city was again subordinated by Venice and because the Serenissima did not trust the townspeople, in 1283 a large part of the wall on the seaside was demolished. In 1348, the town and the surrounding population revolted – the mayor and the garrison had to take refuge in the Lion Castle in the lagoon. When they recaptured the city with a large army, mostly the Slovenes were punished. They were deprived of the right to bear arms and perform public functions. The lack of de-fence made it possible for the Genoese to invade the city in 1380, burn it down and plunder it.

In 1561, the physician and inventor Santorio Santorio was born in Koper, who devoted himself mainly to measuring body tem-perature and invented the thermometer in the years 1593-1597.

After the collapse of the Venetian Republic in 1797, the city be-longed to Austria and in 1803 it was occupied by the French. They annexed it to the Kingdom of Italy for 10 years, and then again, it was mediatized to Austria. After 1819, the final demoli-tion of the city walls began. A year later, the Austrian authori-

ties also demolished the Lion Castle. The city became the centre of Italian irredentism in Habsburg Istria, and in November 1918, the inhabitants welcomed the marching in of the Italian army. At the beginning of the 20ᵗʰ century, most of the inhabitants of the town were Italians, who also inhabited the surroundding plain, while Slovenes inhabited the hills in the hinterland.

Between the two world wars, many Slovenes emigrated from the province to Yugoslavia, but the situation turned the other way when many Italians emigrated to Italy after the Second World War. In 1947, after the signing of the Paris Peace Treaty with the Treaty of Devin, it became the seat of Zone B of the Free Territory of Trieste. After 1957, they began building a new port east of the old town.

Landscape

The hinterland of Koper consists of the Eocene flysch, which is not a single rock but is a stack of mixed layers of marl, sandstone, limestone and other rocks. Due to the strong surface water runoff or the fact that the flysch is not resistant to erosion, the later formed ravines and valleys from which it deposited clays and loams into the floodplains. Because such sediment decomposes rapidly, there is a rapid formation of very fertile soils. On the coast, peninsulas alternate with steeply rising cliffs made of decaying flysch and sunken lower parts of the sea-flooded valleys of larger streams. The climate in Koper is sub-Mediterranean but does not contain a lot of evergreen vegetation.

History of the archaeological site

50 BC – Roman villa

Middle Ages – Benedictine monastery

15th century until 1772 – a monastery of the Servite Order

1810 to 1996 – city hospital

Fig. 92. Aerial view of the Servite monastery

The Koper city silhouette is dominated by the monumental architectural complex of the Servite Monastery, still the largest building complex in Koper, which rises above the rest of the architecture with its first floor. It was placed on the top of the rock cliff of the island of Koper, on the part where it is still clearly visible inside the city centre in the area between Carpaccio and Tomažič squares. These were the rocks, for which Peter Paul Vergerius remarked that with their location and colour

they resemble a "lazy goat herd", which could give the town the name Goat Island (*Capris*).

Fig. 93. The trenches indicated inside the complex of the Servite monastery

Despite the centuries-old function of the city hospital, the building is still so-called after the monastic Servite Order (OSM – *Ordo Servorum Beatae Virginis Mariae*), which settled in Koper in the 14th century. In 1453, a monastery complex was established in uniting the buildings standing around the older Benedictine monastery, and the church of St. Martin and Benedict, which was located outside the inner-city walls. In the second half of 15th century, they enlarged the old Gothic church and remodelled the monastery tracts – thus the side of the cloister next to the enlarged church today represents the oldest visible architectural complex within the monastery. The buildings around the southern courtyard with part of the cloister

probably date from this period, and the northern courtyard was not built until the end of the 17th century when the complex was connected with the church of Santa Maria delle Grazie, which was built in the second half of the 16th century.

The monastery was dissolved in 1772 and the friars left it only two decades later – in 1810 the building became a hospital, which operated until 1996. The last main alterations of the complex was the construction of stairs, and it could be connected to recovery for new hospital needs. A few years earlier, the church of Santa Maria delle Grazie had been abandoned and emptied, used as a warehouse, burned down in 1964, demolished and removed.

Legal status

https://gis.gov.si/MK_eVRDpredpis/p1055_1.pdf
https://gis.gov.si/MK_eVRDpredpis/p1545_1.pdf
https://gis.gov.si/MK_eVRDpredpis/p0707_1.pdf

EŠD 235 – Koper City Centre – a monument of local significance

EŠD 236 – Archaeological site Koper

EŠD 8349 – Santori Street 9 Monastery – a monument of national significance

EŠD 238 – Baptistery of St. John the Baptist – a monument of local significance

EŠD 239 – Church of the Assumption of Mary – a monument of local significance

EŠD 244 – Lodge Tito square 1 – a monument of local significance

Accessibility

Accessibility
The archaeological site is not accessible. The architectural monument owned by the University of Primorska is closed to the public.

Visibility
The archaeological site is not presented to the public.

Infrastructure
The monument is located in the city centre. All infrastructure is located in the immediate vicinity.

Long-term management
Archaeological heritage and architectural heritage are legally protected. The University of Primorska has a more than a 10-year-old study of the renovation proposal. A new document is being prepared at the university. An expert group was formed in the Municipality of Koper to prepare a conservation study.

Environmental potential
The monument is located in the centre of the old town. Koper has a developed tourism development strategy. A strategy for the development of culture is being prepared.

Presentation of finds
A small selection of archaeological finds is presented to the public at the Koper Regional Museum as part of a permanent exhibition.

Importance

Archaeological research shows that at the time of the hospital's operation, waste or even medical supplies were dumped in the northern courtyard. The modern layer contained a lot of waste

– fragments of pottery, with many parts of ceramic pipes, glass, as well as dissected animal bones, especially bones of cattle, pigs and sheep.

Fig. 94. View of the discovered archaeological layers and part of the Servite monastery cloister (photo by Boris Kavur)

Major changes in the organization of the complex are represented by the deserted tombs in the courtyards in the 17th century. Then the remains of the deceased were moved, the ossuary arranged and the tombs covered in. The garden was covered by a layer of irrigated humus soil identified mainly as a sequence of backfills on medieval layers. Before that, masonry tombs covered with slabs, to which led stone pavements, were built in the garden of the cloister. During this period, the supporting wall of the arcaded corridor with a cross arch was erected – it can be dated to the 15th century based on comparisons with similar stonemasonry products in Koper. According to the children's burials in the tombs, this phase can be placed at the beginning of the hospital activity in the monastery at the end of the Middle Ages, when the monastery became Servite.

Fig. 95. Detail of the Servite monastery corridor (photo by Mirella Baruca)

The medieval period is represented by tombs lined with vertical stone slabs, which were dug in into debris layers from the Roman period. This is a phase when the dead were irregularly and massively buried in the area of the later monastery – if we consider historical sources, we can assume that these are graves next to the medieval church of the Benedictine monastery. From this period are also two of the most mysterious archaeological finds from this area – isolated human skulls buried in sterile clay. Moreover, one of them had some cervical vertebrae preserved in the pit. These are traces of unexplained medieval ritual practices of manipulation with human body parts or their deposition in the area of the cemetery.

The most important archaeological find in the area of the city of Koper is the discovery of larger Roman architecture. Remains of the supporting architecture were discovered in the eastern part of the monastery complex – brick pillars that stood above the drainage ditches. These are remains that we can try to reconstruct as the remains of the outer colonnade of the building complex. Remains of the walls of the buildings were discovered in the central part – well-preserved mosaics were discovered in one of them. Observing the part where they were partially damaged by the subsequent construction of the building, showed that there were at least three layers of mosaic-covered floors in the room. It was also interesting that the building collapsed – the wall paintings, frescoes painted in red, white and yellow colour, came off the wall and fell on the mosaics in large slabs. During the excavations, larger pieces of hydrophore mortar were also found the later lined the walls of the water tanks, indicating that a part of a thermal complex was most likely located nearby.

The excavated remains suggest that below the central and southern part of the Servite monastery is a large complex of representative Roman architecture, with mosaic floors, frescoed walls, representative colonnades and possibly a spa. Remains of mosaics are indicative for the chronological definition of this building – examples with a single, only frame-enclosed mosaic surface belong to the initial period of production in the area of today's Slovenia or the so-called severe style. It is its basis in which the basic bichrome *tessellate* were incorporated, which is characterized by the monotony of forms that have lost their plasticity and depth or, where the stinginess of the ornament corresponds to the rigour of the basic grid and the edge of the mosaic. It is the final phase of the development of bichrome mosaics in Italy, which began at the end of the 2nd and the beginning of the 1st century BC with mosaics with irregular shapes of mosaic cubes. The phase culminated at the end of the 1st century BC and AD by making mosaics with thinned frame bands from properly shaped small mosaic cubes.

Therefore, the discovery of a villa under the Servite monastery and the combination of data on past discoveries in the cliff area significantly complements the knowledge of the history of the settlement of Koper Island and the history of Romanization of the coastal area of *Caput Adriae*. The choice of the position of representative architecture, located on a protected and visually exposed plateau above the cliff, with a view of the northern Adriatic, in itself indicates its importance and elevates it above other coastal structures discovered in the area.

4. RESEARCH RESULTS FROM FIELD RESEARCH

Initially, the researchers from the country-coordinator of the AD HOC project, and its partners decided on a qualitative approach for the field research. The goal was to make semi-structured interviews with persons with disabilities from all age groups that would be primary and secondary users of this accessible system for digitalized archeological heritage. Unfortunately, because of the COVID-19 crisis and the events related (overall school shut down, particularly in the schools in the above mentioned countries) it was decided for an online approach and in several cases, phone communication or video conferencing. The respondents were given an inquiry with closed and open ended questions. The sample was consisted of 100 respondents, students from primary, secondary schools and colleges, with and without disabilities. Below are the results from the analysis.

4.1. DEMOGRAPHIC ANALYSIS OF THE DATA

Within this research, 53 (53%) respondents were female, and 47 respondents (47%) were male. Gender equality was one of the prerequisites of this research (see chart 1).

Twelve percent of the respondents were attending mainstream primary schools. Mainstream secondary students were 28% of them while 51% attended a college or University. Four percent were attending a special primary school and 5% were attending a special secondary school (chart 2).

Chart 3 shows the presence of some type of disability or/and special needs in the respondents. From 100 respondents, 30% had some type of disability while 70% did not have any special educational needs.
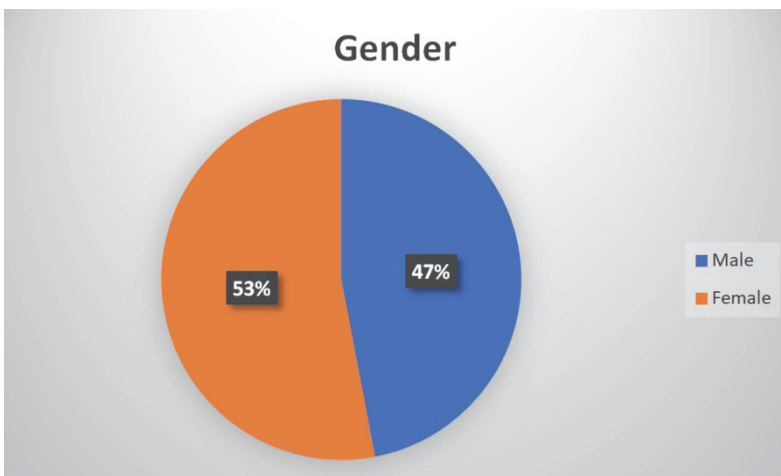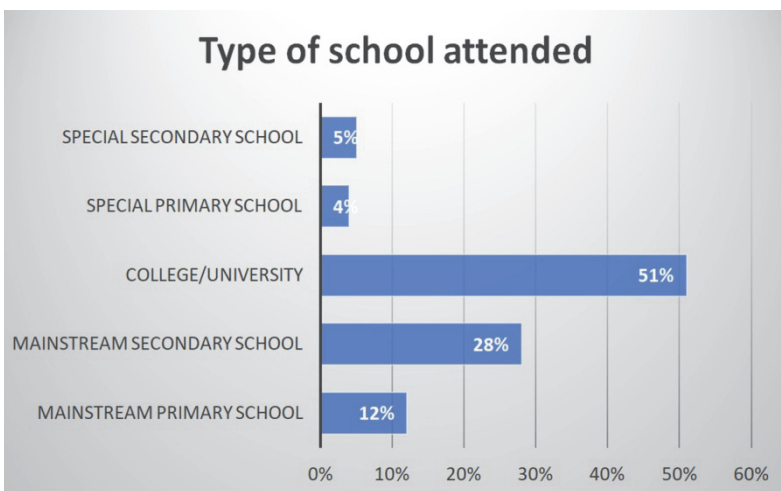

Chart 1. Gender of respondents

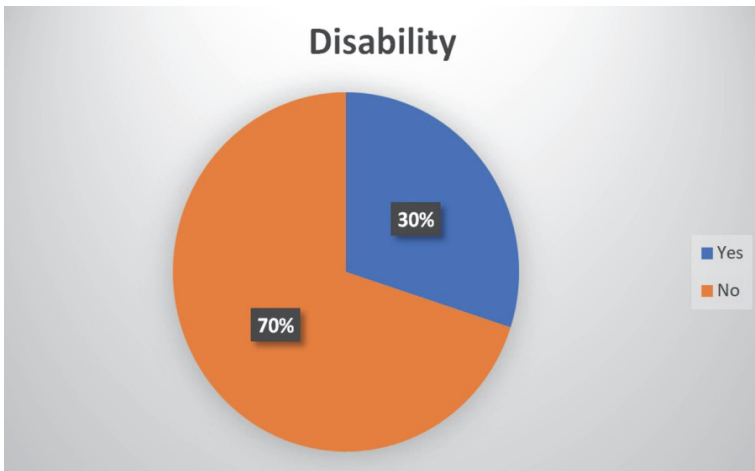Chart 2. Type of school attended by the respondents

Chart 3. Presence of disability or special needs

From the 30 respondents in this study which had some of disability: 24,1% were physically disabled, 6,9% were intellectually disabled, 6,9% were hearing impaired, 10,3% were visually impaired, 37,9% had specific learning difficulties such as dyslexia and 13.8% had autism of autism spectrum disorder (chart 4).
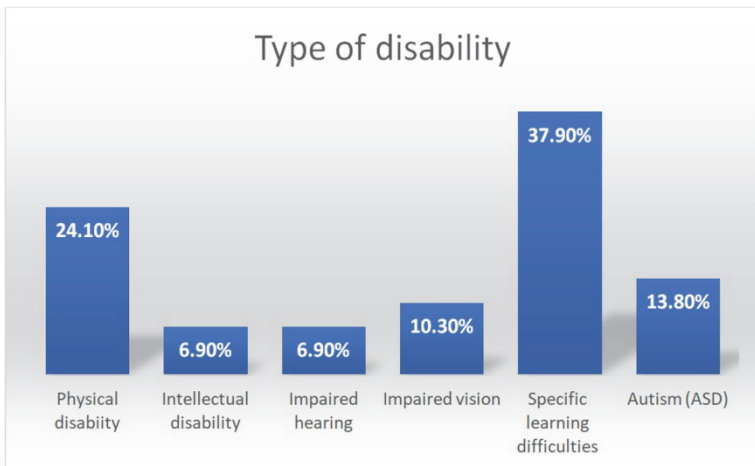

Chart 4. Type of disability (if any) in the respondents

The largest number of respondents came from Italy (37%). From North Macedonia and Slovenia we had 19 respondents from each country. Twenty-two respondents were from Greece (chart 5).
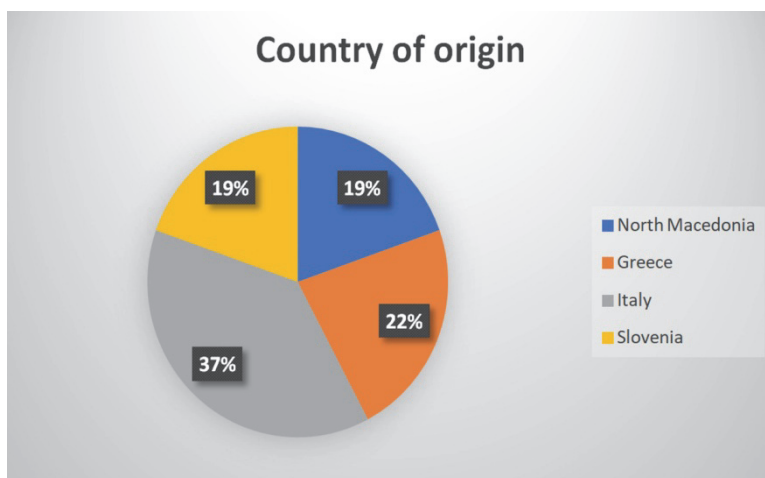

Chart 5. Country of origin of the respondents

4.2. ANALYSIS OF RESULTS

In the following section the accessibility related questions are discussed and analyzed.

Our research showed that 90% of the examinees had some types of computer experiences, used a PC or laptop before for searching different content on the net. Ten respondents did not have any computer experience but they were the youngest in this research and not yet computer literate (chart 6).

A large number of the respondents were interested in sharing experiences during their visits to the museums. 81% of them had visited or frequently visit museums. Only 19% of them have

never been to museums. These 18% all had some type of disability, mostly visual impairment. The inaccessibility of museums has limited them in enjoying the archaeological and cultural heritage of their country (chart 7).
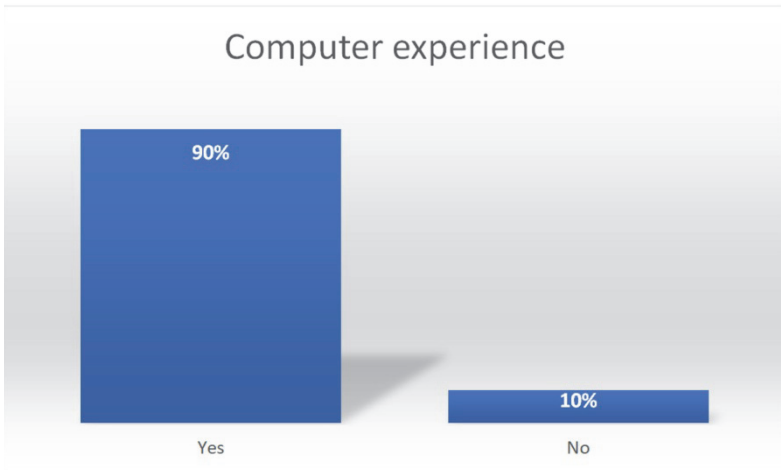

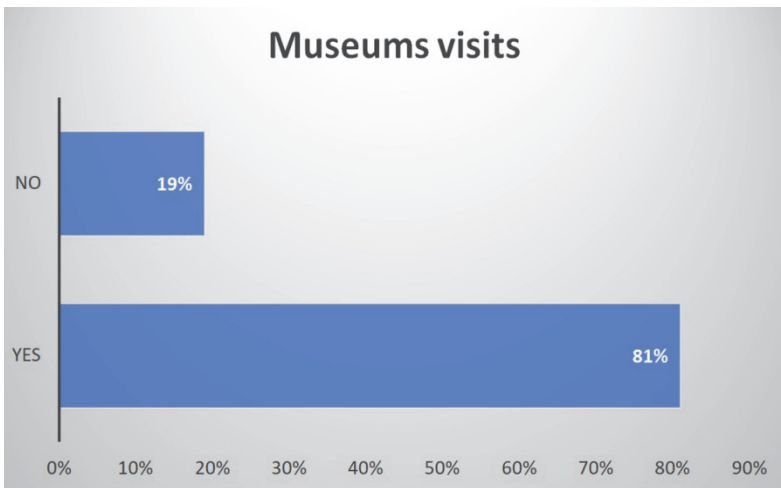Chart 6. Computer experience of the respondents

Chart 7. Visits to museums

The following question was an open ended question. The respondents were asked to share which type of museums they most frequently go to.

Types of museums	Number of respondents
History museums	15
Vatican museum, Egyptian museum of Turin, Capitoline museums	5
Regional museum in Koper	1
Archaeological museums	18
Art museums	13
All types of museums	24
Only museums that are accessible	4
Don't know the type of museum they visited	10
Did not answer	10

Ten persons did not answer. Ten respondents said that they do not know the type of museum they visited (they were severely disabled). Fifteen respondents mentioned that they go to history museums. Five respondents noted that they go only to the Vatican museum, Egyptian museum of Turin and Capitoline museums. Twenty respondents go to archaeological museums. Twenty-five respondents mentioned that they go to art museums. Nine persons stated that they do not go to museums. Thirty persons mentioned that they visit all types of museums: archaeological, historical, art museums, local museums, natural history, science museums. One person noted that he visits the regional museum in Koper, Slovenia. One person mentioned that she visits only museums which have an accessibility ramp.

The next chart shows the percentage of respondents that visit archaeological sites. Only 46% have visited or are constantly visiting archaeological sites. The remaining 54% are not able to visit sites such as these, specifically because they are not accessible for persons with different types of disabilities (chart 8).

Chart 8. Visits to archaeological sites

The following question was also open-ended. It resulted with a wide discussion about concrete least accessible sites described below.

Least accessible archaeological sites	Number of respondents
Are not informed	29
Very few are accessible	25
None	38
Accessible physically but not on a cognitive and emotional level	1
Accessible are the recent ones	1
No difficulty in accessing archeological sites	2
No answer	4

Twenty-nine respondents were not informed regarding the accessibility of archaeological sites. According to 25 respondents, very few of the sites are accessible. Thirty-eight believe that none of the archaeological sites near them are accessible. As least accessible sites, the respondents shared the following: Civita di Bagnoregio, Roman Amphitheatre in Albano Laziale, Villa Gregoriana, Grotte di Stiffe, Palace of the Grand Master of the Knights of Rhodes, Santuario della Fortuna Primigenia, catacombs of San Zotico, San Simon, Izola, Nebregovo, Koper, Ajdovski Gradec and Potočka Zijalka, Cave Divje babe, Betalov archaeological site near Postojna, Villa Magna, Foro Romano and Palatino in Rome, Archaeological Museum of Chios, Piramida Maribor, Graia's Castle in Chios, Emporios – Mavra volia, Divje babe - cave site, Emborio, Mavra Volia, Il ninfeo di Egeria, Korte (Izola), Domus Aurea, Akropolis, Socerb.
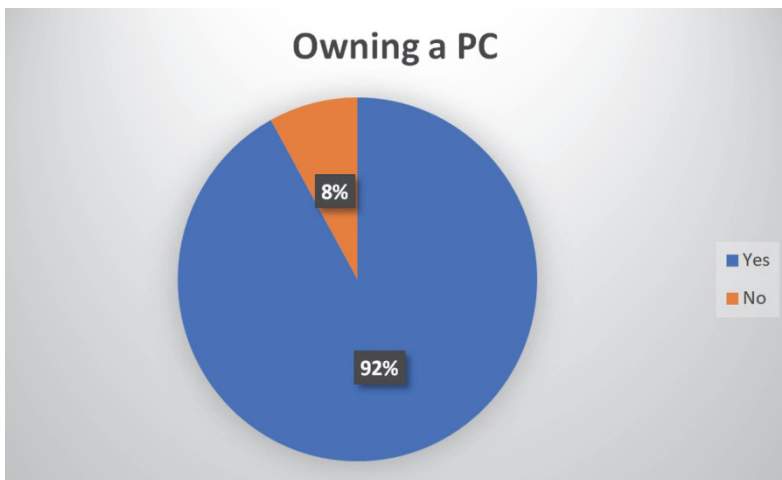

Chart 9. Owning a personal computer or lap-top

From the picture shown above, it can be stated that the largest portion of respondents do own a personal computer or laptop, 92% of them claim that they have a PC and only 8% have stated that they do not own a PC or laptop (chart 9).

Chart 10. Respondents searching archaeological content online

From the picture above it can be noted that 48% of all respondents search for archaeological content online, which is a large percentage bearing in mind that many of them have disabilities and that also not all respondents are related in any way to the field of archaeology or cultural heritage. The remaining 52% have stated that they do not search for archaeological content online.

The following question was also an open-ended question: types of archaeological information that persons with and without disabilities can get online. Below is the discussion and most common answers:

Types of archaeological content that can be found online	Number of respondents
History	12
Monuments	5
I don't visit archeological sites	10
Description of places and location	11
Current exhibitions	5
Minimal data	7
Prices for visits	16
Stories	4
Everything	20
School related info	5
Didn't answer	5

Twelve persons stated that they usually find history-related materials online, five of them look for monuments. Ten persons do not search or visit archaeological sites. Eleven search for the description of places and locations, while five search for current exhibitions. Seven respondents stated that they can only find minimal data, while sixteen only search for the prices of the visits. Four of them search for stories, and twenty stated that they can find everything online. Five stated that they only search for school related info and five didn't answer. For the students this searching is very difficult because there are pictures and the text-to-speech reader cannot read the content.

The next open-ended question is related to problem that the respondents encounter while they are visiting a certain webpage related to cultural and archeological heritage. The discussion and answers are below:

Problems while visiting web-pages	Number of respondents
None	25
Internet problems	19
Not easy to navigate/bad TTS reader	23
Language	12
Outdated	10
Chronology problems	1
Spam	1
Too much information, no structure	3
Clutter	2
Not interesting enough	4

Regarding this question, 25 respondents stated that they have no problems with the web-pages. None of them were disabled. Nineteen have internet problems. Twenty-three mentioned that they find the web-pages not easy to navigate or they have a bad text-to-speech reader. Twelve stated that the language is incomprehensible, ten that the web-pages are outdated. One stated that there are chronological problems, one that there is a lot of spam, three that there is too much information and no structure, two that there is a lot of clutter and four respondents mentioned that the web-pages are not interesting enough.

The next open-ended question is related to the content the respondents prefer to find on a web-page related to cultural and archeological heritage. The discussion is show below:

Preferred information for the web-sites	Number of respondents
In-depth information	10
History-related info for the archeological site	29
Aesthetic manner of presentation of info	8
Videos	12
Time-tables and prices	13
Fun facts	9
Compelling stories	4
About school projects	10
Simple things, accessible for disabled	5

Regarding the information that persons with and without disabilities prefer to find on the web-sites related to archaeological content, we got the following results. Ten of them stated that they prefer to find in-depth information not just basic things about the sites. Twenty-nine noted that they need more historical information about all the sites. Eight respondents mentioned that they prefer that the presentation of the information should be more aesthetic while twelve mentioned that they prefer the content to be presented with videos. Thirteen mentioned that all they are interested in is time-tables and prices, while nine of them just like to read fun facts. Four would like to read compelling stories about the archeological sites, while ten would like to find information needed for their school projects. Five of them stated that the information should be simplified so that it is accessible for some groups of persons with disabilities.

The following open-ended question was related to online learning and the attitude of the respondents towards it. The answers are shown below:

Online learning	Number of respondents
It's ok	23
Not good, difficult to keep attention	34
Bad for academic life, good for trainings after graduation	38
Good if made accessible for persons with disabilities	5

Online learning is considered to be very efficient for 23 respondents. Thirty-four believe that it is not good because it's very difficult to keep the attention. Some quotations are shown below:

"Online learning saves us time and it eliminates the boundaries of the classroom, but I still think jotting down notes with a pen and paper can help us understand and memories information, and also enhance our knowledge".

"There are positive and negative aspects: the positive ones are the greater concentration and therefore the consequent ease of learning while the negative ones are more tied to the social point of view because you cannot see and interact with your friends".

Thirty-four believe that it is bad for academic studies but it is good for work training after completition of the studies. Only five believe that it can be good if made accessible for persons with disabilities.

The next open-ended question is related to suggestions how and what is needed to make successful online learning courses.

Suggestions for successful online learning	Number of respondents
More interactive and interesting	41
Good internet connection and good platform	10
Good text-to-speech engine	9
Sign language interpretation	9
Calendar, quizzes and video-lessons	9
A chat app just for students	3
Good teacher and good literature	12
Don't know	7

The largest number of respondents noted that they believe that the online learning should be more interactive and interesting, ten of them mentioned that a good internet connection and a good platform is needed. Nine of them mentioned that for good online-learning we should have a good and fully operational text-to-speech engine, and nine mentioned that each online course should have a sign language interpretation. Nine believe that there should be a calendar, quizzes and video lessons, three believe that there should be a chat app just for students. Twelve believe that there should be a good teacher and good literature and seven stated that they don't know. Below suggestions from a university student: „Persistence and perseverance; 2. effective time-management skills; 3. effective and appropriate communication skills; 4. basic technical skills; 5. reading and writing skills; 6. motivation and independence; 7. a good study environment."
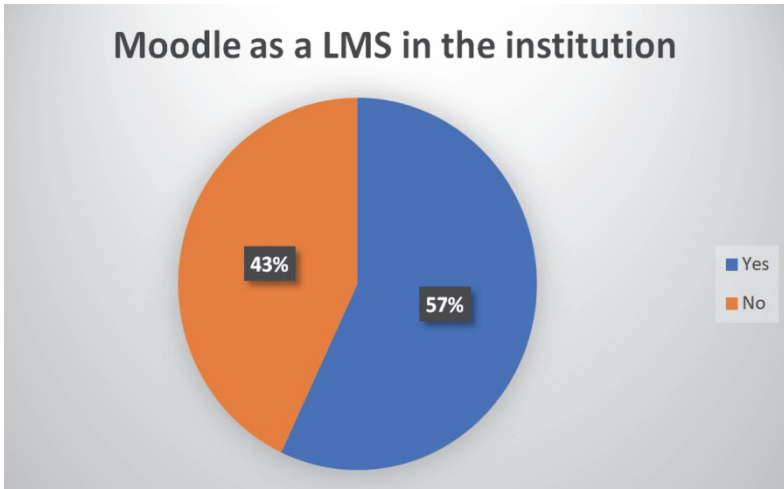
Chart 11. Use of Moodle as a LMS in the educational institution

The respodents with this question explained whether they use Moodle or any other Learning Management System in their educational institutitons. 57% of them use Moodle, while 43% do not use Moodle as a platform for communication and online learning (chart 11).

The final open-ended question is related to the role of professors in online learning. The discussion and answers are shown in the table below.

Role of professors in online learning	Number of respondents
Very important	47
I don't know	15
They should be more educated in technology	38

A large sample of 47 respondents believe that the role of the professors in the online process is crucial. Fifteen respondents mentioned that they do not have opinions on this matter. Thirty-eight believe that professors should get more educated in technology and online learning.

"The role of the professor is certainly the main role, but I believe that it is not only necessary to have a theoretical knowledge of the topic, but I believe that they must learn to use the computer system and all its applications to make learning easier and closer to students so as not to divert their attention from the activity."

"By preparing the content, activities and instructions to be as understandable as possible for people to be able to study on their own, but to be reachable should anything require further explanation. Communication should still be maintained so that the information may be extracted more effectively."

"I have already a successful example of my professors in college. Experience, motivation, and love for the profession, overcome all possible obstacles ... pandemic and so on...!"

"They have to focus on clear contents and instructions to make learning a pleasure generating process (e.g. gamification; diversity; multiple layers)".

4.3. RECOMMENDATIONS

There are several suggestions that we can give which can make archaeological and cultural heritage more accessible for persons with different types of disabilities. Some of these recommendations originate from the research and others are simply

thoughts of the authors on how to make a digitalizied system more accessible.

Universal design (UD) is a concept originated by Ron Mace, the founder of the Center for Universal Design in North Carolina. Mace was an architect with a disability. He wrote that universal design is "an approach to design that incorporates products as well as building features which, to the greatest extent possible, can be used by everyone" (Mace, 1988). The original principles of UD were focused on the accessibility of the built environment.

Universal design for learning (UDL) is the result of applying UD principles to educational experiences. It is an approach to learning that uses "multiple means of representation (to allow various ways of acquiring information and knowledge), multiple means of expression (to allow alternatives for demonstrating knowledge), and multiple means of engagement (to challenge appropriately, to motivate, and to allow learners to express and participate in their interests)" (CAST, 2010).

UDL is a good fit for museums because it suggests a focus on broadening the ways we present exhibit components and the kinds of interaction they elicit from visitors. For example, ideas can be presented with audio, with text, and with illustrations that reinforce the same messages, to offer several ways to perceive the material. Interactive components can ask visitors to manipulate on-screen objects, play with physical models, think about questions that take ideas a step further, and so on, to support multiple means of expression.

On the other hand, archaeology is often regarded as a visual discipline. New digital technologies are profoundly changing the way people interact with ancient treasures. Virtual reality

and augmented reality technology offers close-up experiences of heritage assets. 3D scanning, 3D printing and carving technology has made it possible to recreate objects and architecture with a high degree of precision and in a form that allows visitors to have a tactile experience of these materials. This is particularly helpful for the visually impaired, but also for people that do not have the opportunity to travel and experience the sites first hand.

See the recommendations from this study below:

- One way of making archaeology easier for people to understand and become engaged with archaeology is through 3D modelling;

- Promoting tactile exhibits, complete with braille, large print, and audio exhibition guides, exploring the key architectural and decorative features of ancient structures;

- Use of digital technologies to guide visitors with different access needs around the collections;

- Creating of iOS and Android apps that chart routes through the museum galleries, and a game that invites users to create their own collages from collection highlights. These apps can have customable access settings, including sign-language videos, audio descriptions and easy-read texts, prototyped and tested by participants with a mix of visual and hearing impairments, and learning difficulties.

- Personalized experiences can be built with the building blocks of accessible design and multimodal features.

- Use of captions which synchronized text transcriptions of audio that include speaker identification, off-screen dialog

indicators, and non-speech audio, and any other information conveyed solely by the audio portion of a presentation.

- Offering text at multiple reading levels can enable a very wide target audience by carefully coordinating the reading level with the associated features of an exhibit. The usefulness of this technique will vary somewhat depending on the content being showcased – some complex science concepts may not be able to be effectively conveyed with less complex language.

- Use of video descriptions can provide descriptive narration of key visual elements that are inserted within the natural pauses in dialogue (for motion video) to help low-vision viewers better understand the story. Key visual elements are those which viewers with vision loss would ordinarily miss, and include actions, costumes, gestures, facial expressions, scene changes, and onscreen text. These types of descriptions apply equally well to static objects (paintings, sculptures, maps, charts, and graphs, etc.) and to dynamic video and audio content.

- People with some cognitive disabilities respond well to low-clutter environments. People with these disabilities may have reduced abilities to retain information or transfer applied skills. Reducing visual or auditory clutter can be less distracting and improve the visitor's focus on an exhibit.

- Font size, colors, and contrast are text display attributes that allow underlying content to be rendered in ways that allow for easier reading. When designing exhibits and user interfaces, separating content (the underlying textual information) from the rendering of that text (drawing words on a

screen) is considered smart design. It allows for flexible rendering options.

- Effective 3D digitization of archeological artefacts – a digital 3D reproduction of medium and small size archeological artefacts. This scans can be used to be seen online or printed with a 3D printer.

- Creation of a digitalized platform accessible for blind (through the development of a text-to-speech engine), for deaf (by embeddement of sign language videos on the platform) and for the dyslexic reader (by embedding a plug-in for a special font for dyslexics).

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