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STOBI



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MASTER CONSERVATION PLAN FOR THE ARCHAEOLOGICAL SITE OF **STOBI, R. OF NORTH MACEDONIA** | 2021



THE CREATION OF THE MASTER CONSERVATION PLAN
FOR THE ARCHAEOLOGICAL SITE STOBI,
REPUBLIC OF NORTH MACEDONIA
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LIST OF ACRONYMS

BHF - Balkan Heritage Foundation

CISS - Cooperazione Internazionale SUD SUD, Italy

DPCH - Directorate for Protection of Cultural Heritage

GIS - Geographic Information System

MCP - Master Conservation Plan

NCC - National Conservation Center (previously Republic Institute for Protection of Monuments of Culture)

NGO - Non-Governmental Organization

NI Stobi - National Institution for Management of the Archaeological Site Stobi / National Institution Stobi

PTA - Preliminary Technical Assessment

OPC - Ordinary portland cement



FOREWORD

When I came to National Institution Stobi in September 2018 as the new director, the first information that I received from the team was that the J. M. Kaplan Fund was seriously interested in Stobi. I accepted their excitement and shared their enthusiasm. Today, as I write this foreword for the Master Conservation Plan (MCP) for Stobi, I can conclude that the cooperation with J. M. Kaplan Fund has been successful and fruitful.

Stobi is one of the best preserved archaeological sites in the Republic of North Macedonia. Its stratigraphy shows an incredible section of centuries and centuries of layers, as well as information regarding cultural history, while its significance surpasses the borders of our country and belongs on the list of UNESCO World Heritage Sites.

The Master Conservation Plan for Stobi represents a strategic document integrating the basic requirements and goals for proper and continuous development of Stobi, establishing modern parameters for the preservation and presentation of the site. It offers a contemporary methodological approach towards protection, monitoring, preservation and presentation of the architectural and movable cultural heritage at Stobi, as well as recommendations concerning sustainable development.

I would like to express immense gratitude to the members of the expert team, to the team from National Institution Stobi involved in the preparation of the MCP, our partners from the Balkan Heritage Foundation from the Republic of Bulgaria, as well as the J. M. Kaplan Fund from the United States of America for their interest in the archaeological site Stobi and their efforts in the creation of this plan. Since this document is the first of its kind in our country, I sincerely believe that it will be an excellent example for other institutions concerned with preservation of cultural heritage. My hope is that this Master Conservation Plan for Stobi will completely come to fruition, fulfilling the goal of raising awareness of the importance of preservation of cultural heritage for the next generations.

Spase Perovski, Director

National Institution Stobi



FOREWORD

It is my sincere pleasure to present the first Master Conservation Plan (MCP) for the archaeological site of Stobi, Republic of North Macedonia. The ancient city, former capital of the Roman province Macedonia Secunda, is widely recognized as being a unique piece of urban heritage on local and international level.

The Balkan Heritage Foundation started collaborating with the National Institution Stobi back in 2010 through the Foundation's educational program Balkan Heritage Field School. Since then, the joint team has annually organized international field schools in archaeology and workshops in conservation of pottery, glass and mosaics. To date, 345 students have participated in those initiatives, volunteering and financially contributing to the preservation of the site. All the project activities were in support of the ongoing excavation and conservation projects of National Institution Stobi.

The intense collaboration throughout the last years helped our organization not only to appreciate the uniqueness and importance of the ancient city, but also to become sympathetic to the various problems which its team inherited after almost 100 years of interrupted excavations, led by different institutions. Probably the most acute of those problems is the insufficient conservation of the excavated buildings, as well as the lack of regular monitoring of the previous conservation since National Institution Stobi was founded back in 2008. Since then, the general situation has significantly improved but the limited financial and human resources of the institution are still an obstacle for resolving all the issues of this nature on time. This is the reason such a guidance document, which provides the framework for proper prioritization of the preservation actions needed, strives to bring together all stakeholders to have shared understanding of the site and will help all concerned parties to work in collaboration and coordination to protect the site.

On behalf of the Balkan Heritage Foundation, I would like to declare our support in all future activities connected to the implementation of the MCP, realizing that the completion of this guidance document is just the beginning of a very difficult and responsible task: preserving Stobi in the most authentic way for the future generations.

Ivan Vasilev, CEO

Balkan Heritage Foundation



INSTITUTIONS

**National Institution Stobi
(Republic of North Macedonia)**
www.stobi.mk

The National Institution for Management of the Archaeological Site of Stobi (National Institution Stobi / NI Stobi) was established by a Decision of the Government of the Republic of Macedonia in 2008 as a governmental institution under the Ministry of Culture, responsible for the research, protection, preservation, interpretation, presentation and promotion of the archaeological site of Stobi and its diverse cultural heritage. Twenty nine employees within three departments and a number of associate professionals in various fields work in their best practice implementing a large number of excavation, conservation and presentation projects to achieve the main goals, to provide opportunities for its sustainable development and to raise public awareness for its protection and its significance as part of the global cultural heritage.

**Balkan Heritage Foundation
(Bulgaria)**
www.balkanheritage.org

Balkan Heritage Foundation (BHF) is a non-profit cultural organization operating in the area of cultural heritage research, preservation, communication, management and education. It was established in 2008 by three archaeologists: Ivan Vasilev, Angela Pencheva and Nayden Prahov. The BHF supports the study, protection, management and utilization of cultural heritage in SE Europe and adjacent regions and promotes its greater appreciation through programs and communications. Besides Bulgaria, the Foundation funds and/or conducts projects in Greece, Montenegro, Republic of North Macedonia, Serbia and Slovenia in collaboration with research, conservation, academic and governmental institutions as well as with local businesses, media and non-profit organizations. The BHF's supporters include J. M. Kaplan Fund; Institute for Field Research (USA); European Commission; Bulgarian Ministry of Culture and other major donors as well as over 2,000 individuals from across the globe.



INTRODUCTION & ACKNOWLEDGEMENTS

This section represents an introduction to the Master Conservation Plan for the archaeological site of Stobi. It explains the goals, phases of its development and its structure.

1.1. INTRODUCTION

In 2009, the National Institution Stobi (established in 2008) was charged with the management of the impressive archaeological remains with exceptional universal value from the Roman and Late Roman period in the heart of the Republic of North Macedonia. At the same time it also inherited a long list of long-term problems related to the site's conservation, presentation, infrastructure and facilities. During the following decade, the institution achieved incredible results in terms of capacity building, fundraising, study and preservation of the site. However, the size and the importance of Stobi require even more effort in order to maintain both its unique character and the balance between study, preservation and presentation so it can pass in a better condition to the future generations.

The present proposed Master Conservation Plan for the Archaeological Site of Stobi (MCP) was prepared between 2019 and 2021 as a joint project of the National Institution Stobi (NI Stobi) and the Balkan Heritage Foundation (BHF). It is a comprehensive tool promoting the site's sustainable conservation and preservation, considering its integrity and authenticity in a multidisciplinary manner over time. The plan's development was generously supported by J.M. Kaplan Fund and numerous local and international experts were involved in its design.

With the completion of the MCP, NI Stobi and BHF celebrate the 11th anniversary of their institutional collaboration. Since 2010 both institutions have partnered in the BHF international educational program: Balkan Heritage Field School. Annual field schools and workshops in archaeology and in conservation of mosaics, murals, pottery and glass for students and volunteers, have been organized within or in support of ongoing archaeological and conservation projects of NI Stobi. Over the years, the collaboration grew through the exchange of specialists, joint publications, conferences, team buildings, and public lectures.

1.2. GOALS OF THE MCP

The Master Conservation Plan is based on the present setting, character and needs of both the site and its managing institution, the National Institution Stobi. It outlines the vision, overall objective, guiding principles and strategies regarding the conservation and protection of the site, determining a sustainable approach by balancing the conservation of its cultural heritage and natural environment with the needs of its sustainable development including its infrastructure improvement and visitor

management. Generally, the plan aims to protect and preserve Stobi's outstanding universal value by suggesting favorable solutions, recommendations, and prioritization of development considerations necessary to protect and conserve the ancient city for the present and future generations. Thus, to serve as a basic tool for short- and long-term planning for present and future managers of Stobi and its professional team.

1.3. PHASES OF DEVELOPMENT OF THE MCP

The plan's preparation included three working phases, conducted in extensive consultation with foreign and local experts, the team of NI Stobi and representatives of the government and private sectors.

Phase 1 of the project consisted of research and assessment, followed by development of concept proposals for conservation and management of the site. The assessments were carried out mainly in 2019 with preliminary research and collection of information supplied by the former director of Stobi and founder of National Institution of Stobi: Dr. Silvana Blazhevsk. In undertaking and writing up the assessment, the emphasis was placed on the main Stobi features, its management, history, threats, current condition and visitor potential. Additionally, the professional staff (archaeologists and conservators) of NI Stobi was actively involved in the initial condition assessment and project proposal phase of the MCP's creation.

Based on the assessments coming out of Phase 1, initial concept proposals were developed in Phase 2 (2019-2020) by a team of international and local experts in conservation, archaeology, cultural management and seismology. They were presented to the team of NI Stobi for consideration and followed by revisions and further development in 2021.

The work process included two roundtables which took place in the summer and autumn of 2019 at Stobi, with the participation of the project team and the following experts: John Stewart (architectural conservator, senior building conservation advisor, Historic England, United Kingdom), Paola Pesaresi (architectural conservator, Herculaneum Conservation Project, Italy), Alessandro Lugari (stone and mosaics conservator, Soprintendenza Speciale per il Colosseo, il Museo Nazionale Romano e l'Area Archeologica di Roma, Italy), Dr Eleonora Petrova-Mitevsk (director of Directorate for Protection of Cultural Heritage until August 2019, Ministry of Culture, Republic of North Macedonia) Zoran Pavlov (head of Department for International Cooperation, Documentation and Digitalization of Cultural Heritage, Directorate for Protection of Cultural Heritage, Ministry of Culture, Republic of North Macedonia) and Prof. Predrag Gavrilovich (structural and seismic engineer, professor emeritus, Institute of Earthquake Engineering and Engineering Seismology, University Sts. Cyril and Methodius, Republic of North Macedonia).

During Phase 2 Dr. George Bevan and Kristen Jones, Queen's University, Canada were assigned to complete the documentation of several major monuments of Stobi: the Building with Arches, the House of Parthenius, Theodosian Palace and to improve the accuracy of the existing general plan of Stobi in regard to the future implementation of the MCP.

The opportunities for fundraising and resource development considering the site's diverse needs for conservation, publications, upgrade of the facilities, staff training etc. were listed and summarized by Buff Kavelman (president, Kavelman group, philanthropic advisors, United States of America) and Kristina Biceva (acting head of Division for International Cooperation, Directorate for Protection of Cultural Heritage, Ministry of Culture, Republic of North Macedonia).

In Phase 3, the final version of the document was completed, revised and expanded by taking into consideration the forwarded notes and comments on the drafts. The MCP was translated into Macedonian language.

1.4. STRUCTURE OF MCP

The Master Conservation Plan for Stobi contains six parts and 12 appendices.

Part 1 includes a list of the contributors, the plan's contents, a list of acronyms, forewords by the director of NI Stobi, Mr. Spase Perovski and the CEO of Balkan Heritage Foundation, Mr. Ivan Vasilev, and the institutions' summary of the partnering organizations (NI Stobi and BHF) and the executive summary of the plan.

Part 2 contains a summary with general geographic and legal information about the archaeological site of Stobi and its governing institution: NI Stobi.

Part 3 contains an introduction to the site's historical context and overview; a list and short description of the existing excavated ancient buildings and infrastructural facilities; history of archaeological excavations; conservation and site management; a summary of the site's significance in historical and cultural context (exceptional universal values: authenticity, integrity, diversity, uniqueness); a revalorization of the site (including regime of protection, core area and protective zones), a summary of the collections with movable finds (including inventoried finds made of ceramic, glass, metal, stone) and a summary of the existing documentation and documentary sources since the beginning of the investigations in Stobi until the present.

A proposal for priority interventions for the architectural monuments of Stobi based on their significance and state of preservation is developed in **Part 4**. There is also an explanation of the nature of their vulnerability/risk assessment from dynamic natural hazards (caused by seismic movement, flooding, animal nesting, atmospheric influences) and human activities (due to nearby military base at Krivolak, air pollution, looting and agriculture), other administrative, legal, shortage of professional staff etc. The condition of ancient features (stone masonry, pavement) has been described in the context of the current conservation practices, excavations vs conservation, current legislation, lack of professional training and skills. The extended recommendations concern: legislation changes, establishing routine conservation processes, establishing a protocol for interventions, maintenance and monitoring, defining new conservation policies with balance between archaeology and conservation, and conservation standards and guidance. Special consideration is given to the development of the disaster management plan, of the professional roles, capacity and research partnerships. Also, recommendations for improvement of the storage facilities and preservation of the movable finds (artifacts in store) have been given in this part of the MCP.

Part 5 of the MCP is focused on visitor management, interpretation and presentation of the site. Special consideration is given to its promotion with the help of different media, social networks and educational projects (NI Stobi website, published guidebooks, TripAdvisor, social media, Wikipedia, the Balkan Heritage Field School at Stobi, etc.) Developing a visitor management plan for the site, establishing partnerships with local cultural heritage sites, local communities, and the Ministry of Transport have been recommended in this part of the MCP, as well as creating interpretation and presentation policy (including guidance, presentation and interpretation of ancient buildings, design and building of a site museum, interpretation of inaccessible features, explanation of excavation and conservation, exploitation of shelters for interpretation, development of historic corners, promotion of local flora and fauna etc.). Suggestions on how to expand and enrich the visitor experience are also included here (e.g. creation of thematic visitor routes).

The final section, **Part 6** of the plan, is focused on fundraising and resource development. The current revenue and income sources of the site are presented here, followed by a listing of the site's needs (preventive protection measures, conservation projects and their implementation, building capacities and training, technical research, documentation and digitalization, archaeological excavation for the needs of the conservation activities, enhancement of the visitor experience, and marketing) and potential sources for their funding: governmental agencies, foreign museums and academic institutions, EU funds, foundations, corporations and businesses, and individual donors. General recommendations for setting up a fundraising strategy are also expressed here (including development of a fundraising team and creation of an action plan).

In conclusion, the present MCP does not propose ultimate solutions but provides a variety of recommendations which may suit the site best given different political, social and economic conditions. It is the first plan of its kind in the Republic of North Macedonia. However, it is designed to serve not only Stobi but also the broader circle of heritage management institutions in charge of similar sites and operating under similar conditions in the region of Southeastern Europe. The team who designed the MCP will consider its mission as successfully accomplished if the document inspires more stakeholders to develop plans for even more sites across the region and enhances the collaboration among managers, politicians, specialists and businesses in benefit of cultural heritage and local communities.

1.5. ACKNOWLEDGMENTS

NI Stobi and the BHF would like to express their gratitude and appreciation to all contributors and those who organized and participated in the MCP's related activities, and to the J. M. Kaplan Fund for their inspiration and support.



Visit of Kaplan family to Stobi in 2018



ARCHAEOLOGICAL SITE STOBI

- GENERAL INFORMATION

This section gives the general information for the archaeological site of Stobi, and its legal status according to the Statute of NI Stobi and law regulations in the Republic of North Macedonia.

2.1. GENERAL INFORMATION

Name: Archaeological site Stobi

Address: Archaeological site Stobi, 1420 Gradsko, Republic of North Macedonia

a

Location: (Figs.1, 2) The archaeological site of Stobi is located in central part of the Republic of North Macedonia, at the confluence of Crna River (ancient Erigon) into the Vardar River (ancient Axios), at 80 km from the capital city of Skopje and 85 km from the Macedonian-Greek border. It is easily accessible from corridor E-75 on the international highway Thessaloniki - Skopje - Belgrade and from the regional road Gradsko - Negotino. At Stobi, there is a train stop from the railway line Skopje - Gevgelija. The site is within the municipality of Gradsko, exactly at the border with two neighboring municipalities of Negotino and Rosoman. The closest towns are Gradsko at a distance of 4.5 km to the north, Negotino at 13 km to the south and the village of Palikura at 2.5 km to the southwest of the site. The site is located in the rural regions of Middle Vardar Valley and Tikvesh, where agriculture is the main economic activity. The area also has a rich cultural heritage: archaeological sites, medieval churches and monasteries, museums and exceptional natural landmarks, including the reserve for rare birds at Tikvesh Lake. Both regions are especially famous for the viticulture and the numerous wine cellars that have been successful in developing wine tourism.

Map reference: (Fig. 3) The archaeological site of Stobi is located in the municipality of Gradsko, Property act no. 379, CP 844, 845, 846, 847, 848, 849, 850 and 865 with a total surface of the fenced area of 26.5 hectares.

• latitude: X 21° 58' 57" E; longitude: Y 41° 33' 29" E; elevation: 130-145 m above the sea.

Type of monument: The archaeological site of Stobi is a complex monumental ensemble with combined architectural and archaeological cultural heritage. It represents the excavated remains of an ancient urban center with public buildings of secular and religious character and residential buildings with rich architectural decoration, necropolises and a large collection of movable cultural heritage. According to the National classification of cultural heritage,¹ the site is classified as an ancient city (class. no. 1.2.1.1.4).

¹ Official Gazette of RM no. 37/06.

Periods of occupation: the majority of excavated structures date to the 2nd through the early 7th century CE (Roman period and Late Antiquity). The finds discovered out of original context point to occupation in the periods of Prehistory and Early Antiquity (Chalcolithic, Late Bronze Age / Iron Age, Classical and Hellenistic periods); there are also structures and finds from the Medieval period (11th – 14th centuries).

2.2. LEGAL INFORMATION:

Ownership: The archaeological site of Stobi is property of the Republic of North Macedonia.

User: National Institution for Management of the Archaeological Site Stobi by a Decision of the Government of the Republic of Macedonia no. 19-893/1 of 28.02.2009.²

Responsible authority: The National Institution for Management of the Archaeological Site of Stobi (short names: National Institution Stobi / NI Stobi) established by a Decision of the Government of the Republic of Macedonia no. 19-3992/1 of 26.08.2008.³

Location and address: Archaeological site Stobi, 1420 Gradsko, Republic of North Macedonia.

Activities:⁴

- g1.03 – protection of historic sites and buildings and similar sites for visitors
- g1.02 - activities of the museums
- Activities defined in the Decision of the Government refer to excavation, conservation, restoration, presentation, popularization, rehabilitation, maintenance and overall management of the site.

Usage: scientific and tourist presentation and utilization of the cultural heritage of Stobi.

Status of protection: The archaeological site of Stobi is declared a first category cultural monument of national importance by a Decision no. 1038 of 27.07.1950, adopted by the Central Institute for Protection of Monuments of Culture of the People's Republic of Macedonia and Decision no. 01-134/1 of 21.01.1976, adopted by the Republic's Institute for Protection of Monuments of Culture, later National Conservation Center (NCC). The Document for re-valorization of the archaeological site Stobi no. 09-105/3 from 11.04.2016 (revised version no. 09-399/1 of 18.12.2019) as well as the Proposal Act to declare the site as an exceptional cultural heritage, subcategory-great, is pending adoption by the National Committee for Cultural Heritage and the Government.

Permits and constraints according to the Law: For all activities related to archaeological research and conservation works according to the Law for protection of the cultural heritage,⁵ National Institution Stobi is obligated to provide permits from the DPCH, a body within the Ministry of Culture. The constraints for any activities without prior permission by the National Institution Stobi and the DPCH refer to the fenced area of the site. The proposed constraints and protection regime will be applied on the core area and buffer zone after the Document for re-valorization is adopted.

2 Official Gazette of RM, no. 33/09.

3 Official Gazette of RM, no.120/08.

4 According to the National Classification of Activities NKD Rev. 2.

5 Official Gazette of RM no. 20/04 ..20/19.



DESCRIPTION AND SIGNIFICANCE OF THE ARCHAEOLOGICAL SITE STOBI

This section gives a short summary of the history of the ancient city of Stobi, and short description of the site, the discovered architectural monuments, collections of moveable finds and existing infrastructural facilities. Summaries of the history of the excavation, conservation activities, responsible institutions for its management in the past 100 years and the existing documentation are valuable information to understand its present condition and its state of preservation. This chapter also includes the brief statement and explanation of the criteria for the significance of Stobi as a cultural heritage and the regime for its protection based on the Document for re-valorization of the site prepared in 2016

3.1. HISTORICAL SUMMARY

The archaeological site of Stobi is the largest and best-preserved ancient city from the Roman and Late Antique Periods on the territory of the Republic of North Macedonia (Figs. 4-8). It is of first grade national interest, with exceptional archaeological, historical, scientific, artistic, cultural and economic significance and huge potential for tourist presentation.

The old city of Stobi was the largest city in the northern part of the Roman province Macedonia, later capital of the province Macedonia Secunda and an important urban, administrative, trade and religious center during the Roman and Late Antique periods. Located on an exceptionally significant position, on the intersection of the two main roads – the Vardar-Morava road (Thessalonica-Stobi-Singidunum) and the diagonal road (Heraclea Lyncestis-Stobi-Serdica), the city possessed all preconditions for greater rise and development.

Hellenistic period (late 3rd - 1st century BCE): The first historical records of Stobi are found in Roman historian Livy, who recorded the Paionian urbs vetus Stobi (Liv. XXXIX, 53, 15-16), as a place close to the battleground where Philip V defeated the Dardanians in 197 BCE (Liv. XXXIII, 19, 3). In the period after 168 BCE, when the Romans conquered the Macedonian kingdom, Stobi entered the fourth meris, and became a trade center from where salt was distributed north to Dardania (Liv. XLV, 29, 13). When the Roman province of Macedonia was established in 147 BCE, Stobi remained the largest city in its northern part. There are no preserved buildings or structures from this period.

Roman period (1st - 3rd century CE): The salt trade and favorable position allowed Stobi to continually rise in importance during the following centuries of Roman rule. Pliny recorded Stobi as oppidum civium Romanorum (Plin. Nat. Hist. IV, 10, 34), a status gained during the time of Emperor Augustus, meaning that there must be a community (conventus) of Roman citizens who possessed ius Italicum, besides the local population and other foreigners. The citizens who enjoyed Roman civil rights belong to the tribes Aemilia and Tromentina. Stobi became a municipium, the status which appeared on the coins minted in Stobi by Vespasian in 72/73 CE, and on a few inscriptions dated in

the period 1st - 3rd century CE. The imperial mint at Stobi, with interruptions, lasted until the time of Caracalla (198-217 CE). The town suffered in the second half of the 3rd century from the invasion of the Goths and Herules in 267-69 CE, and around the year 300 CE, when the city was damaged in an earthquake. These events, along with the general crisis in the Roman Empire, caused the decline of Stobi's prosperity.

During the reign of Augustus, the early Roman fortification was built enclosing an area of 20 hectares. Extensive construction activity in the city occurred in the early 2nd century CE, defining the urban layout mainly on the lower and middle terraces. A few buildings from this period are partially uncovered, partially conserved and presented to the public. On the middle terrace are located: the Theatre and the House of Polycharmos with the northern part adapted to a Synagogue, while on the lower terrace are situated: the Temple of the Egyptian deities Isis and Serapis, the Building with Arches (the Library), and a partially uncovered urban villa named Casa Romana, located close to the Erigon River, which is not accessible to visitors. Their grandiose architectural solutions, the used materials and magnificent marble, stucco, painted and sculptural decoration are all testaments for the prosperity of the city.

Late Antiquity (4th - 6th/early 7th century CE): The large reconstruction of the city occurred during the 4th and even more so during the 5th century. Stobi became bishop's see in the early 4th century. Budios, the first recorded bishop in Stobi, participated at the First Ecumenical Council in Nicaea in 325 CE. Five other bishops are known from the historical sources or inscriptions. In 388 CE, Emperor Theodosius visited Stobi from where he issued two edicts for the religious issues (C.Th. 16.4.2, 16.5.15). In 447 CE the city suffered in the raids of the Huns and twice by the Theodoric and the Ostrogoths in 472 and 479 CE. Stobi became the capital of the newly formed province of Macedonia Secunda at least between 482 and 535 CE.

Most of the buildings and the visible fortifications at the site date from Late Antiquity and were erected in the 4th or 5th and renovated during the 6th century. A new inner fortification wall was built in the early 5th century on the eastern side, thus shortening the city's territory while the center was moved to the middle and upper terraces. Some of the existing houses were renovated (House of Polycharmos) and larger residences were built with many rooms lavishly decorated with mosaics and rich architectural marbles organized around the central inner courtyard with fountains and pools: House of Parthenius, Theodosian Palace, House of Peristeria, the so-called Casino, Domus Fullonica, Episcopal Residence, as well as two public baths and the city fountain.

Christianity largely shaped the urban layout of the city. The Early Episcopal Basilica was built in the late 4th century and, renovated by Bishop Eustathios in the early 5th. In the late 5th century a new, larger Episcopal Basilica was built on an artificial terrace, 4.5 meters above the Early church. Three more basilicas within the city walls (North Basilica with the Baptistery, Civil Basilica, Central (Synagogue) Basilica) and three outside the fortification (the Cemetery Basilica, Basilica Extra Muros and Basilica Trans Erigon) are known from the second half of the 5th century. The ruins of the Palikura Basilica were discovered 2.5 km southeast of Stobi.

The buildings were divided by a network of streets, some of them paved and colonnaded, which probably follow the early Roman urban layout. The main commercial center with major shops and workshops in the city was transferred to the upper terrace, across the Episcopal Basilica, along the Via Sacra and the Semicircular Court. A large section of the Late Antique city, at the southwest area of the city excavated in 2009 and 2010 and named as Residential and Commercial Quarter, reveal modest dwellings which existed during the 6th century.

An earthquake in the early 6th century damaged the buildings which were repaired in the 520s. The incursions of the Slavs and Avars in the second half of the 6th century, the earthquakes, and the bubonic plague during Justinian's reign which caused depopulation and climate changes, were all reasons for the decline in the second half of the 6th century and the abandonment of the city in the first decades of the 7th century. The city was probably struck by another earthquake shortly before or after it was abandoned.

Medieval period (11th - 14th century CE): The last historical records mentioning the name of the town refer to the victory of the Byzantine Emperor Basil II over the military garrison stationed in Stobi in the year 1014. During the Medieval period, judging by the layers discovered on a limited area in the southeast part of the city, around the Temple of Isis and in the corridors of the abandoned Theatre,

a small settlement existed. The small cemetery was also found above the remains of the Civil and Central Basilica. In the following centuries Stobi vanished into oblivion until it was discovered in the second half of the 19th century.

3.2. SHORT DESCRIPTION OF THE SITE: DISCOVERED AND PRESENTED BUILDINGS AND OTHER FACILITIES

The archaeological site of Stobi is located on the three terraces that gradually slope toward the east, i.e. toward Crna River (Figs. 4-9). Twenty-three buildings dating from different periods are known within the city walls: the Theatre, Early Episcopal Basilica, Large Episcopal Basilica with the Baptistry, Semicircular Court, Residential and Commercial Quarter from the 6th century CE, the House with a Triclinium, the Domus Fullonica (also known as North Palace or Fuller's House), the Episcopal Residence, the so called Prison, the Theodosian Palace, the House of Parthenius, the House of Peristeria, the City Fountain, the Large Bath, the House of Polycharmos (also known as the House of Psalms), the Central Basilica on top of an older Synagogue, the Small Bath, the Civil Basilica, the North Basilica (also known as Basilica of St. John), the Building with Arches (or Library), the Casa Romana, the so-called Casino, and the Temple of Isis and Serapis with its surrounding complex. The names of most of the discovered buildings at Stobi, except those that refer to their function (ex. Theatre, Synagogue) were given by scholars during the excavations in the 20th century and are usually based on inscriptions or specific finds discovered within the buildings.

The visible fortification dates from Late Antiquity and is revealed from the northwest, south and southeast with the main gate Porta Heraclea, partially revealed from the east and a small segment on the north. A new city gate was discovered in 2010 in the southeastern part. The street network also belongs to the Late Antique period: Via Sacra, Via Principalis Superior, Via Principalis Inferior, Via Theodosia, Via Axia and a newly discovered street on the southwest part of the highest terrace which branches off Via Sacra and leads towards north.

Outside the city walls to the south and southeast are located the Cemetery Basilica and Basilica Extra Muros as well as the ruins of the Ottoman-era bridge on Crna River. The Palikura Basilica is situated 2.5 km to the southwest.

Stobi's cemeteries are located to the west, south and southeast of the city, around the Cemetery Basilica and towards the village of Palikura, as well as along the northwest and southeast fortification walls. There are few burial sites discovered within the city: a Hellenistic cemetery (3rd - 2nd century BCE) below the House of Peristeria and Domus Fullonica; a small Late Antique cemetery above the ruins of the Building with Arches, and a small medieval cemetery above the ruins of the Civil and Central Basilica.

The following buildings within the city are not accessible to visitors for several reasons (ongoing excavations, lack of conservation or they are outside of the established visitors path): the Residential and Commercial Quarter from the 6th century, the House with a Triclinium, and both phases of the Synagogue and Casa Romana. Outside the city, the Cemetery Basilica, the Basilica Extra Muros, the Palikura Basilica and the Ottoman-era bridge are not open to the public, while the remains of the Basilica Trans Erigon are not visible today.

Entrances, visitors paths and parking areas: (Fig. 9) The archaeological site Stobi is accessible from the south and north sides. On the south side, an exit of the international motorway E-75 leads directly to the parking area and the main entrance for visitors, which is not properly paved and signed for vehicles. At the parking area there are ticket and souvenir shops, toilets, an open cafeteria for hot and cold drinks with a few tables and benches, and metal stands for bicycles (Fig. 10). The entrance to the site is located on the damaged part of the fortification wall with a ramp for people with disabilities. A guard cabin is on the right, and to the left there is a large billboard showing the map of the site and the old ticket shop which is out of service.

The second entrance to the site is on the north side, from the regional road Gradsko-Negotino. The parking area is paved with asphalt but is not properly signed for vehicles. At the parking area there is an old restaurant which is private property, used periodically by the owner for storage. There are two gates, one leads directly to the administrative cabins and the other to the guard house and earthen path for visitors. On the right side there are the Old Train Station (former museum, now closed) and improvised storage facilities for moveable finds.

The visitors path starts from the main entrance on the south side and leads through the middle of the site, between the middle and lower terraces, while the rest of the paths are mostly along the actual Late Antique streets. The visitors paths are earthen or covered with grass, while most of the presented buildings are surrounded by metal chains attached on low metal posts. The borders along Via Principalis Superior and Via Principalis Inferior are delineated with concrete slabs. For those visitors who decide to walk through the site without a guide, the paths and directions are clearly marked on the information leaflet given with the ticket. Alternatively, they can follow the directions and information on Stobi's history and presented buildings on the audio guide for mobile phones available in two languages: Macedonian and English.

3.3. SUMMARY OF EXCAVATION, CONSERVATION AND SITE MANAGEMENT

The archaeological site of Stobi attracted scholarly interest in the middle of the 19th century when French historian and archaeologist Leon Heuzey first located the city at the confluence of the rivers Crna and Vardar, followed by Austrian philologist and diplomat J.G. von Hann. Later A. von Premenstein and N. Vulić recorded many inscriptions and monuments in its vicinity. The first excavations were performed by the German army stationed in Stobi during World War I, and they are still ongoing. Many scholars and institutions have been involved in the process of understanding its complex history and the preservation of its heritage for the future generations.

SUMMARY OF THE ARCHAEOLOGICAL EXCAVATIONS:

- **1917-1918:** Dr. Hald who served as an officer in the German army commenced the first excavations unearthing the Palikura Basilica and the remains of the Episcopal and Cemetery Basilicas. The German architect F. Krischen, member of the Mazedonische Landeskundliche Kommission, conducted the excavations on the Cemetery and Episcopal Basilicas. The finds and the documentation are lost.
- **1924-1941:** the People's Museum of Belgrade (Museum of Prince Paul) (Figs. 11-12). Many scholars excavated the site under the auspices of the Museum in Belgrade: B. Saria (Ljubljana), R. Egger (Vienna), Dj. Mano-Zissi, J. Petrović, V. Petković, Čiro Truhelka and architects E. Dyggve (Copenhagen), J. Staudinger (Munich), Magerle (Ljubljana), B. Nestorović and Gj. Bošković (Belgrade). They revealed: the Episcopal Basilica, Episcopal Residence, Via Sacra and Porta Heraclea, the Theatre, Domus Fullonica, Central (Synagogue) Basilica, the North Basilica, both baths, the Prison, the Theodosian Palace, the House of Parthenius, the House of Peristeria and the Casino. The material and documentation were lost during World War II, though parts of it possibly still exist in the Belgrade Museum.
- **1955-1970:** The Archaeological Museum in Skopje and the Republic Institute for Protection of Monuments of Culture (later NCC), excavated in the following buildings: North Basilica, Civil Basilica, House of Polycharmos, House of Peristeria and the Theatre. Documentation and finds which were kept in the Archaeological Museum in Skopje were destroyed in the earthquake in 1963.
- **1970-1981:** The American-Yugoslav project involving the University of Texas at Austin, later Boston University, the People's Museum of Veles, the University of Belgrade under the auspices of the Smithsonian Institute funded through the U.S. Foreign Currency Program, Ford Foundation and many others. The project was led by Dj. Mano-Zissi and J. Wiseman and J. Wiseman and B. Aleksova. The team excavated the already known buildings: the Theatre, Episcopal Basilica,

Central (Synagogue) Basilica, Domus Fullonica. Newly discovered structures were sections of Inner East Fortification, the Building with Arches (Library), Casa Romana, the Baptistry of the Large Episcopal Basilica and Early Episcopal Basilica, part of the West Cemetery (Figs. 13-14). Part of the documentation is at NI Stobi, the National Conservation Centre and Boston University (copies), while finds are primarily stored at the NI Stobi depot. Some are exhibited in the Archaeological Museum of Macedonia.

- **1981-2001:** Museum of Macedonia, People's Museum of Veles and Republic Institute for Protection of Monuments of Culture (NCC). During the 1980s Blaga Aleksova revealed the Early Episcopal Basilica. Part of the documentation and finds are at NI Stobi.

In 1992 and 1995, large-scale rescue excavations were conducted by the Republic Institute for Protection of Monuments of Culture (NCC) and Museum of Macedonia (directors of the excavations: M. Ivanovski and V. Sanjev and Ž. Vinčić and Z. Georgiev) at the West Cemetery because of the construction of the international motorway E-75. A total of 1501 graves, parts of the Late Antique suburb and the Basilica Extra Muros were discovered (Figs. 15-17). Parts of the documentation are at NI Stobi and the NCC, finds are at NI Stobi, and some finds are in the Archaeological Museum of Macedonia. In 2000 Dr. Eleonora Petrova with a large team from the Museum of Macedonia, began the project "Pre-Roman Stobi", excavating in the Episcopal Residence, Domus Fullonica, the House of Peristeria, the Civil Basilica and in few trenches on the northwest part of the highest terrace.

- **2001-2009:** The National Conservation Centre (NCC). They conducted excavations in the Casino, Semicircular Court, House of Peristeria, Episcopal Basilica and the Theatre. Excavations were conducted by Z. Georgiev, V. Kaleova, M. Velčovski, M. Ivanovski, V. Malenko and others. Parts of the documentation are at NI Stobi and the NCC, and finds are at NI Stobi. Between 2003 and 2008 the Museum of Macedonia supported by NGO CISS from Palermo, Italy undertook a systematic excavation of the Building with Arches (Library) within the project named "Roman Forum", conducted by Dr. E. Petrova and M. Šurbanovska (Figs. 18-19). Parts of the documentation are at NI Stobi and the Archaeological Museum of Macedonia, and finds are at NI Stobi, with some finds in the Archaeological Museum of Macedonia. In 2008, Museum of Macedonia conducted systematic excavation in the southeast part of the city revealing the Temple of Isis and a section of the Inner East Fortification, conducted by S. Blazhevskaja. Finds and documentation are at NI Stobi.

- **2009-present:** National Institution for Management of the Archaeological Site Stobi (NI Stobi). Large scale systematic excavations conducted by S. Blazhevskaja and a large team of archaeologists were undertaken in the Theatre, Episcopal Basilica, House of Peristeria, Semicircular Court, Building with Arches (Library) and West Cemetery (Figs. 20-21). Newly excavated structures are: 325 m of the northwest fortification wall with five towers and the 280 graves along the wall, the Residential and Commercial Quarter from the 6th century including the House with a Triclinium, uncovered on more than 7000 sq. m., the Temple of Isis and Serapis and its surrounding complex spanning 2000 sq. m., continuation of the southeast fortification wall and a new gate. The area between the Theodosian Palace and the Prison was excavated within the international field school and in cooperation with Balkan Heritage Foundation (Stara Zagora, Bulgaria) (Figs. 22-23). The excavations of the Theatre since 2014 have been conducted by G. Pavlovski, the Temple area since 2018 by J. Radnjanski and the area between the Theodosian Palace and the Prison in 2018 by Z. Kovancaliev. Finds and documentation are at NI Stobi, except a few finds which are permanently exhibited in the Archaeological Museum of Macedonia.

SUMMARY OF THE CONSERVATION ACTIVITIES:

- **1930s-1940s:** The first conservation activities on the discovered buildings occurred in the 1930s, when the tops of the walls were covered with cement capping, and the mosaics with tar paper and sand. There are no preserved reports.

- **1950s:** The earliest record of conservation activities at Stobi is a report from 1955 about the treatment of frescoes in the Episcopal Basilica and the House of Parthenius. The two conservators did conservation in situ by injecting the frescoes with casein milk mixed with sand and marble powder.

- **1960s:** During the 1960s conservation was conducted on the walls and floor levels of the Large Bath, the City Fountain, the Small Bath, the Central (Synagogue) Basilica and the House of Polycharmos. The sandstones were replaced with similar local sandstones, new bricks were used, and the new mortar contained grey cement. The mosaic in the triclinium of the House of Polycharmos was also conserved in the 1960s.

- **1970s:** During the American-Yugoslav Project, multiple conservation activities were carried out in 1972, including condition assessments of all mosaics and conservation of frescoes from the Domus Fullonica and the stucco from Casa Romana. The treatment of the fresco decoration involved casein milk, lime, sand and marble powder. The fragments of wall paintings of the Casa Romana were reattached to the walls and then the entire wall decoration was removed and stored in the facilities at the site in 1974. The pieces were conserved in 1975 with the usage of casein milk, lime, sand and Polyvinyl acetate and were attached on canvas placed on wooden carriers. Until 1980, remedial conservation was conducted on the discovered fresco decoration, mainly from the Baptistery and the Episcopal Basilica, and to the discovered pieces from the Synagogue, the Domus Fullonica and the Civil Basilica.

During the 1970s most of the mosaics at Stobi received conservation treatment including the mosaics from the Episcopal Basilica and the Baptistery, the Synagogue, the Theodosian Palace, the House of Parthenius, the House of Peristeria, the Building with Arches (Library), the Casino and the North Basilica. The mosaic floors from the south aisle of the Episcopal Basilica, the mosaic from the Building with Arches (Library) east of the fortification wall and the Synagogue were removed from their original positions. The other mosaic floors were the subject of remedial conservation that involved application of mortar on the edges, affixation of tesserae and mortar fill in damaged areas. The composition of the mortar is unknown. The mosaics from the south aisle of the Episcopal Basilica and the Synagogue were applied on a cement base and placed near the guard cabin on the north side.

In the 1970s, conservation of the buildings was conducted by the Republic Institute for Protection of Monuments of Culture and included interventions on the Inner East Fortification wall, the north wall of the Building with Arches (Library), the east outer wall of the House of Peristeria and the walls of the Episcopal Basilica. The visible segment of the fortification wall was conserved and restored with local sandstone as authentic material and mortar with the composition of cement, lime and sand in proportions of 1:2:3. The mortar in the Episcopal Basilica was composed of cement, lime and sand in 1:1:4 proportions, and the mortar for the joints around the stones was composed of cement, sand and crushed brick in proportion of 1:1:1.

- **1980s:** Conservation activities were carried out by the Republic Institute for Protection of Monuments of Culture and the National Museum of Veles. The restoration of the walls of the Domus Fullonica was finished over several seasons from 1980 until 1985 using authentic sandstone from the site and new mortar composed of cement, lime and sand in 1:2:5 proportions. In 1983, there was remedial conservation of the south wall of the House of Peristeria with an unknown composition of the mortar. Remedial conservation was conducted on the walls of the Episcopal Basilica and the Casino. In 1986 and 1987, the walls of the narthex and the atrium of the Central (Synagogue) Basilica were conserved with local sandstone from the site and new mortar composed of cement, lime and sand in 1:2:3 proportions. Remedial conservation was conducted on the mosaic floors of the Theodosian Palace, the House of Polycharmos, the Episcopal Basilica and the Synagogue. No details were provided about the activities. Remedial conservation was also applied to the frescoes from the Old Episcopal Basilica. A large protective construction was built over the Episcopal Basilica in 1984 and 1985.

- **1990s:** Conservation activities were carried out by the Republic Institute for Protection of Monuments of Culture. The conservation of the Central (Synagogue) Basilica continued in 1990, 1991 and 1994 with no particular changes in the project activities. In 1996 and 1998, there were conservation activities at the Theatre that involved restoration of the back wall of the scene building from the third phase and the walls of the three central rooms of the scene building. The restoration was done with local sandstone and mortar composed of cement, lime and sand in proportions of 1:2:6 for the back wall and 1:1:4 for the walls of the rooms. At the same time, the damaged parts of the walls in the west radial corridor were covered with cement, and similar treatment was applied to the vault. The slanted segment of the vault was reinforced with a

cement support. The arch in circular wall III at this location was restored, while the top side of the vaults was covered with a protective layer of cement.

Remedial conservation (affixation of the tesserae) and removal of the mosaic from the nave of the Early Episcopal Basilica were conducted in 1992. The work on the mosaic was continued in 1998 when the reverse side of the different fragments was cleaned from the old mortar. In 1999 and 2000, there was new remedial conservation of the frescoes from the north wall of the Early Episcopal Basilica. The conservation involved removal of fills from past conservation, physical and chemical cleaning, injecting, new mortar edges and affixation of color.

- **2000s:** Conservation activities were carried out by the Republic Institute for Protection of Monuments of Culture. The fresco decoration in the Early Episcopal Basilica was detached and placed in storage between 2002 and 2004 (Fig. 24). The discovered fragments of fresco decoration from the Extra Muros Basilica were conserved and placed on wooden carriers. In 2004 and 2005 there was a large conservation campaign at Stobi where the walls of multiple buildings were conserved including the Episcopal Residence, the Semicircular Court, the Theodosian Palace, the House of Peristeria, the Central (Synagogue) Basilica, the Casino and the Civil Basilica. The conservation and restoration of the walls involved usage of local sandstone and unknown cement-based mortar. Some of the conserved walls that had mud as a bonding material were restored with pink mortar joints. The documentation of this conservation campaign is kept at the NCC and there is no copy at NI Stobi. During the project for excavation of the Building with Arches there was remedial conservation on the wall decoration preserved in situ, and conservation of the mosaic from the second phase of the building, west of the fortification wall. The mosaic was detached, cleaned from the old mortar and placed back in original position on new bedding. The activities and the used materials are described in the publication *Forum Romanum Stobis II* published in 2010.

- **2009-present:** The conservation projects from 2009 up until today were conducted by the NI Stobi. Over the past 12 years there have been various projects for conservation of architecture, wall decoration and mosaics. The conservation of architecture was conducted at the House with a Triclinium in 2011 (Fig. 25), Temple of Isis in 2012, the Theatre every season since 2013 and the Semicircular Court since 2018. The walls of the Temple and the House with a Triclinium were restored with local sandstone and mortar with grey cement and pigments. The vault of the subterranean chambers of the Temple was conserved with grey cement and ceramic tile adhesive. The conservation of the Theatre was conducted with local sandstone and mortar composed of white cement, lime and sand in 1:1:3 proportions. Two parts of two different vaults were injected with lime mortar and reinforced with carbon fiber wrap on the upper side (Fig. 26). The restoration of the walls of the Semicircular Court was done with local sandstone and mortar with grey cement and pigments.

The conservation of the wall paintings of the Early Episcopal Basilica took place between 2010 and 2012 (Fig. 27). The detached frescoes from 2004 were re-conserved and placed on aluminum honeycomb panels. The new discovered panels of fresco decoration from the south wall of the Early church were detached in 2019. Small fragments of fresco decoration, mainly from the Episcopal Basilica have been conserved during conservation workshops since 2011.

Multiple mosaic floors have been conserved since 2009. In 2009 and 2010 there was remedial conservation of the sectile pavement in the apsidal rooms of the Building with Arches (Library). The mosaic in the east triclinium of the House of Peristeria was detached in 2010, the reverse side was cleaned of the old mortar, new mortar was applied, and the pieces were set on aluminum honeycomb panels and returned back to the original position on new cement bedding in 2012. During this campaign, the fountain in the middle of the triclinium was reconstructed. In 2012 the mosaic in room 2 of the Theodosian Palace and a piece from the north corridor (Fig. 28) were detached, cleaned, set in new mortar and the fragments were applied on aluminum honeycomb panels and placed back in the room without joining. In 2012 and 2013, the fragments of the mosaic from the nave of the Early Episcopal Basilica removed in the 1990s, were placed in new mortar and applied to aluminum honeycomb panels. In 2014 the whole mosaic was reassembled in the nave and placed on a steel supportive construction. In 2012, the mosaic in the narthex of the Episcopal Basilica was detached and conserved and in 2016 (Fig. 29), placed back in its original position. The fragments were applied to aluminum honeycomb panels and

placed on lime mortar bedding. The same year, the preserved remains from the older phase were detached and stored. In 2017 and 2018 the mosaic in the Baptistry was conserved in situ and anastylosis of the conserved columns from the canopy over the piscina was performed (Figs. 30-31). The marble kantharos, conserved and restored in 2012, was also placed back in the piscina. In 2018, the fragments from both phases of the mosaic floor in the south aisle of the Episcopal Basilica were conserved, restored and applied on new mortar bedding.

SUMMARY OF THE SITE'S MANAGEMENT:

- The earliest record of jurisdiction is from 1918 indicating that F. Krischen received official permission from Bogdan Filov, director of the National Museum in Sofia to commence the first systematic excavations at Stobi.
- During the interwar period (1918-1939), the People's Museum of Belgrade (Museum of Prince Paul) was responsible for excavation and remedial conservation on the walls and revealed mosaics at Stobi.
- After World War II, the municipality of Veles created the so-called "Board for Stobi" which made the most important decisions regarding the excavations and preservation of the site.
- From the 1970-2001 responsibility for the excavations, site maintenance and moveable finds was given to the People's Museum in Veles, while the conservation was responsibility of the Republic Institute for Protection of Monuments of Culture (NCC).
- From 2001-2009, the site was under the jurisdiction of the National Conservation Center (NCC). A manager was appointed to take care of Stobi, including maintenance and tourist presentation of the site, while excavations and conservation were controlled and managed by the NCC.
- 2009-present, site management and rights were transferred to the National Institution for Management of the Archaeological Site Stobi (NI Stobi) which is responsible for all aspects of management (excavation, conservation, maintenance, preservation and presentation of the site).

3.4. SUMMARY STATEMENT OF SIGNIFICANCE/HISTORICAL AND HERITAGE IMPORTANCE

Significance/Values: The archaeological site of Stobi has exceptional scientific, social and symbolic significance for the cultural history and identity of the populations that inhabited the territory of the Republic of North Macedonia in the past. The ancient city of Stobi is of great historical, scientific, social, aesthetic and spiritual values for past, present and future generations. A large number of diverse buildings and objects, their relatively good state of preservation and especially the contextual approach in the research, offer excellent opportunities to study, understand and present the history, architecture, arts, crafts, religion, urban development, economy and trade relations, burial rituals, housing and everyday life of the people in the past. The architecture of some of the buildings and their sculptural decoration are masterpieces in terms of execution and art, while the employed styles show that Stobi was a town that linked the eastern and western traditions of the Roman and early Byzantine Empire, thus creating a unique cohesion.

The preservation of the archaeological site of Stobi in its natural environment and surroundings and the appropriate presentation is of great social significance for the presentation of Macedonian cultural heritage. The site contributes to the development of cultural tourism and reflects the economic development in the country and especially surrounding local communities and municipalities. The diverse and rich heritage of the ancient city, its location and accessibility provide a solid base for its sustainable development. The site has an important role in the education of citizens, especially the younger generations, of their own history and culture, and in raising awareness about the ways they can contribute to its preservation for the future generations.

The archaeological site of Stobi fulfills the following criteria to be declared as exceptional cultural heritage, subcategory - great importance as it is proposed in the submitted Document for revalorization of the site. The evaluation of the archaeological site of Stobi on a national level will open the path towards its candidacy for the tentative list of UNESCO World Heritage Sites.

Authenticity: Most of the discovered buildings at the archeological site of Stobi have preserved the authentic features of their original shapes and concept since their discovery. Conservation and restoration activities undertaken on some of the buildings disturb the authenticity of the original remains, used materials, masonry technique and the floor decoration, due to the large percent of cement used in the conservation mortar.

Integrity: Despite the fact that the various buildings of public and residential character separated by a network of streets and enclosed with the massive fortification walls can be dated across a period of almost six centuries, they represent a unified and well-connected assembly of monuments. This provides an excellent opportunity to study and present the urban planning and development of the provincial cities during the Roman period and Late Antiquity. The site is well integrated within the surrounding natural landscape at the confluence of the two rivers. The area of the ancient city has not been inhabited since medieval times and the only modern structures that disturb the natural landscape are the motorway Skopje-Thessaloniki to the south and the local road and railroad to the north. On the other hand, these provide excellent accessibility for tourists, beneficial for the sustainable development of the site.

Diversity: The discovered architectural remains show diversity in the types of buildings and their functions, e.g. an entertainment venue (Theatre) as well as other structures of public character which attest to the diverse social life in the city: library, baths and religious shrines (the Temple of Isis, the Synagogue, and churches). The numerous private, richly decorated residences vary in their decoration styles, rather than architectural concept.

Rarity/Uniqueness: Some of the discovered buildings are unique because of the architectural and decorative solutions and their function. The Theatre combines architectural elements of the western and eastern types of theatres as well as from the amphitheaters in the early 2nd century CE. The Building with Arches (Library) is a unique structure of its kind in the wider region in its architectural concept, decoration, function and in the level of preservation of its original features. The Synagogue is the only religious structure belonging to the Jewish community of this period preserved on the territory of the Republic of North Macedonia. It was not built in the architectural style typical for ancient synagogues, but instead part of a private house was adapted to serve the purpose. The Temple of Isis is the only temple dedicated to Egyptian deities in the territory of the Republic of North Macedonia with the typical shape of the Roman temple and unique subterranean chambers. The Early Episcopal Basilica not only is the oldest Early Christian church discovered on the territory of the Republic of North Macedonia, but also preserves unique wall paintings.

3.5. SUMMARY OF THE SITE REVALORIZATION: CORE AREA AND PROTECTIVE ZONES, REGIME FOR PROTECTION

The Act for Protection of the Archaeological Site Stobi (Decision no. 01-134/1 from 1976) includes only known buildings at that time under protection by the Law, while the buffer zones and the regime for protection are not determined precisely.

The Property Act no. 379 (CM Gradsko) includes the following CP: 844, 845, 846, 847, 848, 849, 850 and 865, with a total surface of 26.5103 a. At the CP 844/1, 13 modern structures are placed (cabins and single-story stone buildings - guard cabin and Old Train Station (former museum) with a total surface of 636 m². Four cabins (storage and labs) were added later to the property of NI Stobi: Property Act no. 1308 (CM Gradsko) and Property Act no. 486 (CM Palikura).

CORE AREA AND BUFFER ZONES: (FROM THE EXISTING DOCUMENT FOR RE-VALORIZATION OF THE SITE, Fig. 32)

The **core area** of Stobi with the first level of protection regime includes the whole site within the fenced area and the Extra Muros and Cemetery Basilicas outside the city walls (marked in pink color on the plan). The boundaries of the core area are: Crna River on the east, regional road Gradsko-Negotino on the north; international motorway on the south and the junction between the international and regional road on the west. The total surface area of the core area is 266230 sq. m. The core area is state property and there are no legal issues or obstacles, except for a building (old restaurant-not functional now) on the north side, next to the entrance, which is private property and has legal problems to be solved. The core area is extended to provide maximum protection of the ancient city and the buildings within the city walls, as well as its natural landscape.

Two buffer zones are set around the core area with a third level of protection regime except for the Cemetery Basilica and the Basilica Extra Muros, which are under the first level of protection. Buffer zone 1 is surrounding the core area on three sides except from the east. It extends further to the south and southwest because of the extension of the cemetery. Buffer zone 2 is to the east of the core area and occupies the narrow line on the right bank of Crna River. The total surface of both buffer zones is 389184 sq. m. The borders of the buffer zones are placed in such a way as to preserve the integrity of the authentic historical environment and the natural environment and landscape around the site in its present appearance and also because of existing archaeological structures.

PROTECTION REGIME:

The first level of protection means preservation and protection of the site in accordance to its use for sustainable development by implementation of the following general protective measures: excavations and non-destructive methods of research, conservation, restoration, remedial protection, anastylosis, adaptation and revitalization in exceptional cases with the main goal to achieve better preservation and presentation of the site. The complete reconstruction of the uncovered buildings at the site is forbidden.

Conservation is allowed on every excavated building, restoration in exceptional cases where there are firm elements. Adaptation of usage and function of buildings is allowed only in the Episcopal Basilica, revitalization only in the Theatre. Permanent protective roofs are allowed in exceptional cases where necessary for protection of fragile decorative elements and only if they do not disrupt the natural landscape and view of the site. Temporary protective roofs are allowed on every building if necessary, during the implementation of projects, but no longer.

The other measures are focused on improvement of the presentation of the site or working conditions of the employees without damaging the heritage buildings or disrupting the landscape. The construction of new buildings is forbidden, except for the renovation and reconstruction of the existing infrastructural and administrative buildings without changes in their height.¹

The third level of protection in the buffer zones allows construction of residential buildings and other tourist facilities as well as facilities for promotion and tourist presentation of the site, but with limited height. The regime also gives restrictions regarding the agricultural activities in the buffer zone.

3.6. EXISTING INFRASTRUCTURAL FACILITIES (Fig. 9):

Administrative, accommodation, storage and lab facilities are located on the northeast side of the site, at the lower terrace close to Crna River:

¹ These measures require inclusion of the site in the state detailed urban and spatial planning, or creation of urban plan for the archaeological site of Stobi as a place of special national interest. The plan should be developed after the adaptation of the Document for re-valorization of the site.

- 2 administrative cabins: the first (built in 1992/1995, renovated in 2008, 85 sq. m.), which is closer to the entrance from the regional road Gradsko-Negotino contains offices for the documentation staff. The second cabin (built in 1963, renovated 2008, total surface with the basement of 155 sq. m.) contains the director's office, an office for administrative staff, three offices for archaeologists - curators, a library and Depot no. 2 in the basement where small inventoried finds are stored.
- 3 accommodation cabins (Fig. 33) each with 4 rooms and 2 bathrooms (built in 1970s, renovated in 2008) for accommodation of the team members during implementation of the projects (98 sq. m. each).
- 1 dining room, 1 kitchen and auxiliary rooms (built in the 1990s, partly renovated between 2010 and 2018).
- 1 accommodation cabin, with 4 rooms and a bathroom (built in 1992/1995, renovated in 2020).
- 1 cabin with 4 rooms and a bathroom (built in 1992/1995, renovated in 2020) which serve as offices and labs for the ceramic and glass conservator, metal conservator, stone conservator and mosaic conservator.
- 2 storage cabins (built in 1992/1995, not renovated). Three of the rooms in the first cabin (472 sq. m.) are used for storage of frescoes and stone artifacts, and the fourth, larger room serves as a lab and working space during implementation of the projects. The second storage cabin (536 sq. m.) consists of 29 rooms and serves as a storage facility.
- 1 cabin (built in 2010, not renovated) is used for storage of the tools and a lab for fresco and mosaic conservation.

Other infrastructural facilities are located on the north side, close to the regional road Gradsko-Negotino:

- Guard cabin (no information is available regarding the time of construction).
- Old Train Station (built in 1920s), with two rooms on the ground floor (150 sq. m). The small room was used as an exhibition room (small museum from 1972 to 2009) while the larger room served as storage for finds. On the south side, there are improvised storage facilities (one larger hangar made of tin and a fenced storage facility).

3.7. SUMMARY OF THE COLLECTIONS OF MOVEABLE FINDS

Moveable finds collected during the archaeological excavations are divided and recorded in the field documentation in two categories: field inventory and study material. The field inventory contains completely preserved finds or fragmented finds which are significant for the stratigraphy and chronological determination of the deposit in which they are discovered, while the study material consists mainly of fragments.² Curators select finds for the museum inventory from the field inventoried finds, while the rest of the study material becomes museum material.³

Since the NI Stobi inherited the site without any museum inventory books (only filed inventory from the previous excavations which is incomplete), the inventory and recording of all the archaeological moveable finds is still in progress. According to the evidence in the official museum inventory documents up until December 31, 2019, the last recorded entry number is 41158. Each entry number refers to a basket of finds consisting of various numbers of whole objects or fragments (from 1 to 400). The total number of fragments of the study material is hard to estimate at the moment.

2 Law for protection of the cultural heritage (Official gazette no. 20/04...20/19); Rules for archaeological excavation (Official gazette no. 111/05).

3 Law for museums (Official gazette no. 66/04...39/16; Rules for museum documentation (Official gazette no. 72/06) and other rules related to the Law for museums.

Of these, 4625 are inventoried finds (museum inventory): ceramic, glass, various metal objects (bronze, copper, iron, silver, gold and other), stone (marble or other types of semi-precious and precious stones), bone and wood. They are divided into three main collections: Pre-Roman period (including finds from Prehistory), Roman period, and Late Antique period (including finds from Medieval period). There are also two separate collections: numismatics and a collection of stone monuments (sculpture, reliefs, inscriptions, architectural marble etc., including the detached frescoes and mosaics or fragments of frescoes and mosaics found during the excavations). They are stored in five cabins and other improvised structures which are used for storage. Except for the basement in the administrative cabin (named Depot no. 2), which is paved, furnished with more or less proper shelves and drawers and has security measures in place (video surveillance and humidity regulator), the other facilities are inappropriate for storage of the moveable archaeological finds.

Some of the finds received conservation treatment in the past (especially in the 1970s, during the American-Yugoslav Joint project for Stobi). The conservation of the various finds is an ongoing process since the establishment of the NI Stobi in 2009.

None of the moveable finds are exhibited and available to visitors due to the still pending project for adaptation of the Old Train Station into a Visitors Center, where an exhibit area is planned on the ground floor as well as a lapidarium for marble artifacts in the backyard. There is no project for a separate museum building at the site.

3.8. EXISTING DOCUMENTATION AND DOCUMENTARY SOURCES

- **1917-1918:** The archaeological material and complete documentation are lost.
- **1923-1941:** The documentation is lost during World War II; a part possibly still exists in the Belgrade Museum, but there is no available information on the quantity and quality. The only available information is published reports.
- **1955-1970:** Documentation kept in the Archaeological Museum in Skopje was lost in an earthquake in 1963. A small part of the documentation exists in Stobi (a few notebooks), while the rest of the information comes mainly from published reports.
- **1970-1980:** Parts of the documentation are at NI Stobi, NCC and Boston University (copies). Field journals, technical and photo-documentation and reports from the Yugoslav-American project for research of Stobi between 1970 and 1981, are kept at NI Stobi, but the documentation is incomplete. A part of the technical documentation (copies) and the original photo-documentation (negatives and slides) are kept at Boston University.
- **1981-1988:** Part of the documentation is at NI Stobi.
- **1992 and 1995:** Parts of the documentation are at NI Stobi and NCC.
- **2000:** Parts of the documentation are at NI Stobi and possibly in the Archaeological Museum of Macedonia.
- **2001-2009:** Parts of the documentation are at NI Stobi and NCC.
- e **2003-2008:** Parts of the documentation are at NI Stobi and NCC.
- **2008-2019:** Documentation is at NI Stobi. From the research and conservation works undertaken by NI Stobi in the period 2008-2018 there is vast descriptive, technical and photo-documentation, which is kept at NI Stobi. The scanned documentation is available on the server on the premises of the NI Stobi, while part of the technical documentation is digital.

Documentation at NI Stobi:

Descriptive documentation from the excavations and conservation activities:

- 254 field notebooks with description of the archaeological excavations and conservation activities from 1963 to 2010.
- 55 registers with contextual locus sheets from the excavations between 2008-2018.
- 9 registers with field notebooks, programs and reports from 1962 to 1991 and 17 registers with conservation and restoration projects of buildings, mosaics, frescoes from 2010 to 2018.

Photo-documentation:

- 10 registers with photo-books, contact copies from 1970-1975 and 1980-1987, 194 roles of developed analogue camera films, 14 microfilms, and many camera films without info; 6 photo-books; 4 photo-albums; extensive digital photographs from 2008-2018 kept on server at NI Stobi.

Technical documentation:

- Extensive technical documentation exists at NI Stobi, mainly ground plans, cross-sections; vertical plans of the walls, which can partially be used in creation of the conservation and restoration projects proposals, especially for those buildings which were uncovered a long time ago. It should be noted that for each conservation project, the technical documentation must present the actual state of the preservation as well as any damage to the building and its elements. Therefore, the technical documentation created a long time ago can be used in the conservation project proposal only if there are no changes in the actual state of preservation of the building.
- GIS database was created in 2008, updated in 2010. No work or update has been done since.

Documentation at National Conservation center:

- 14 projects conservation proposals for different buildings or their elements and 5 field notebooks from excavations, extensive technical and photo-documentation from the excavations and previous conservation.

Documentation in the Archaeological Museum of North Macedonia:

- A Few reports and field notebooks from the excavations and photo-documentation and conservation reports from 1955-1963.

Documentation in People's Museum in Veles: unknown

Documentation in National Museum in Belgrade: unknown

Documentation in Boston University: unknown

Prepared conservation and restoration proposals in the period 2010-2019, pending funds for implementation:

- a Scene building of the Theatre (prepared in 2015, funds for partial implementation secured for 2020);
- a Semicircular Court (prepared in 2013, partially implemented in 2018, pending funds for continuation);
- a 25 m of the Northwest fortification wall and five towers (prepared in 2012, pending funds).
- a East half of the summa cavea at the Theatre (prepared in 2020, funds partially secured for 2020)
- There are no significant changes to the actual state of preservation of the aforementioned

buildings which would require updates of the technical documentation and changes of the prepared conservation projects proposals.

Partially prepared conservation and restoration project proposals:

- The technical documentation of the actual state of preservation and damages is ready for the following buildings:
 - Shops and workshops along Via Sacra (architecture)
 - Theodosian Palace and House of Parthenius (architecture - to be completed in 2020)
 - Building with Arches (architecture - to be completed in 2020)
- Adopted proposal for new protective roof above the Episcopal Basilica (pending funds for developing of the project proposal)

Infrastructural projects:

- Complete project proposal for restoration and adaptation of the Old Train Station into a Visitors Center and lapidarium, as well as cafeteria and toilets (pending funds).
- Complete project for reinforcement of the left bank of Crna River along the archaeological site of Stobi (pending funds).

Other documentation:

- Preliminary Technical Assessment (PTA) for the archaeological site Stobi MK_02 for Ljubljana Process II, Rehabilitation of our common heritage, Council of Europe, with determined priorities for intervention on the Building with Arches, the Theatre, Episcopal Basilica and Visitors Center. (PTA carried out by Silvana Blazhevskaja, NI Stobi and Kristina Biceva, DPCH in 2013).
- Climate Change and Cultural Heritage, Findings of a Rapid Vulnerability Assessment of Cultural Heritage in the Republic of Macedonia and Recommendations towards National Strategies for Cultural Heritage Protection in the Context of Climate Change, created by Institute for Heritage Management GmbH (authors: Mischael Schmidt and Britta Rudolff, assistance and commentary Silvana Blazhevskaja, September 2013).
- Document for re-valorization of the archaeological site Stobi and Proposal act for declaring the site an exceptional cultural heritage, subcategory-great in 2016. The document was updated in 2020 and is pending the approval of the National Committee for Cultural Heritage.

An aerial photograph of an ancient archaeological site, showing a complex of stone walls and foundations. The site is laid out in a grid-like pattern with several rectangular enclosures. In the center, there is a large, open rectangular area. To the right of this central area, there is a long, narrow structure with a series of small, rectangular compartments. The walls are made of light-colored stone or brick. The surrounding area is flat and appears to be a dry lake bed or a cleared field. The text "FIGURES FOR CHAPTERS 2 AND 3" is overlaid on the lower right portion of the image.

FIGURES
FOR CHAPTERS
2 AND 3



Fig. 1. Map of the Balkans

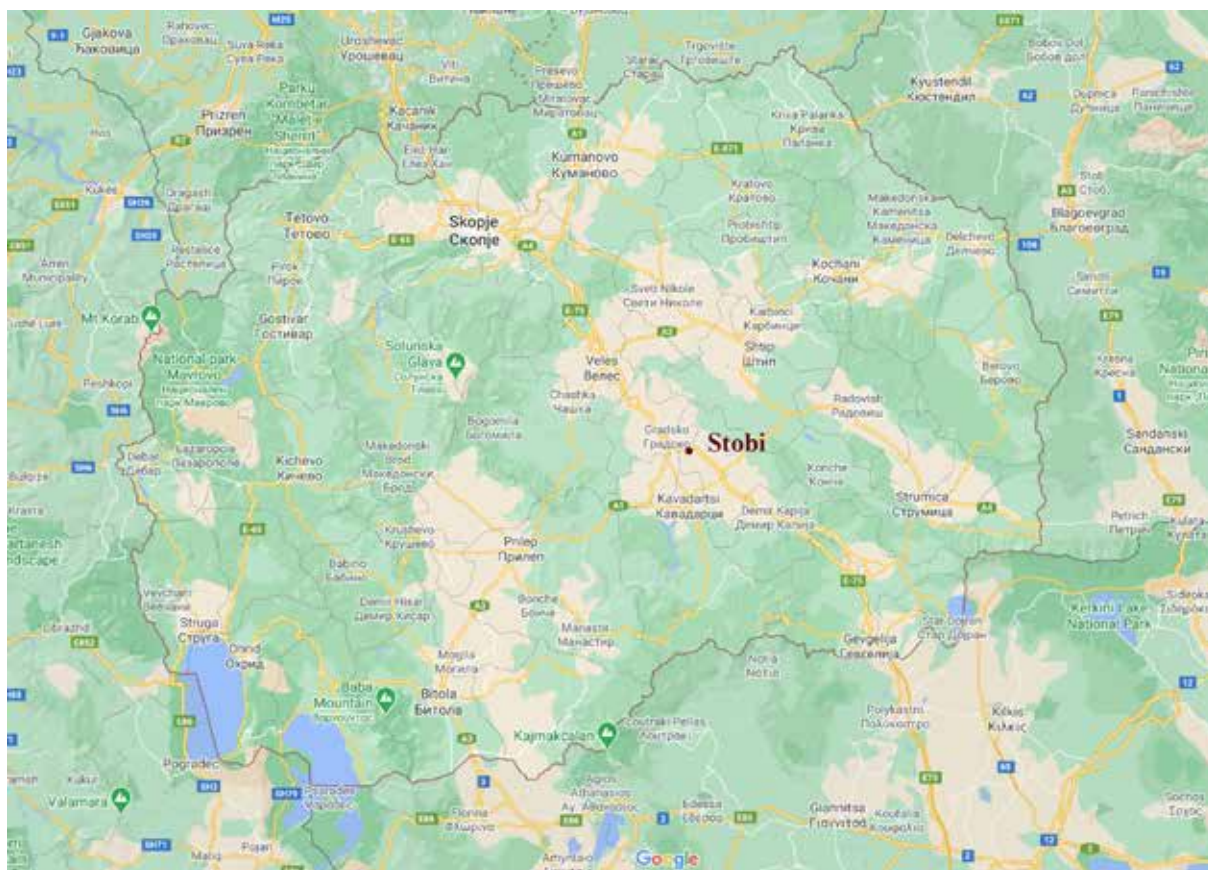


Fig. 2. Map of the Republic of North Macedonia



Fig. 3. Archaeological site Stobi on Google Earth

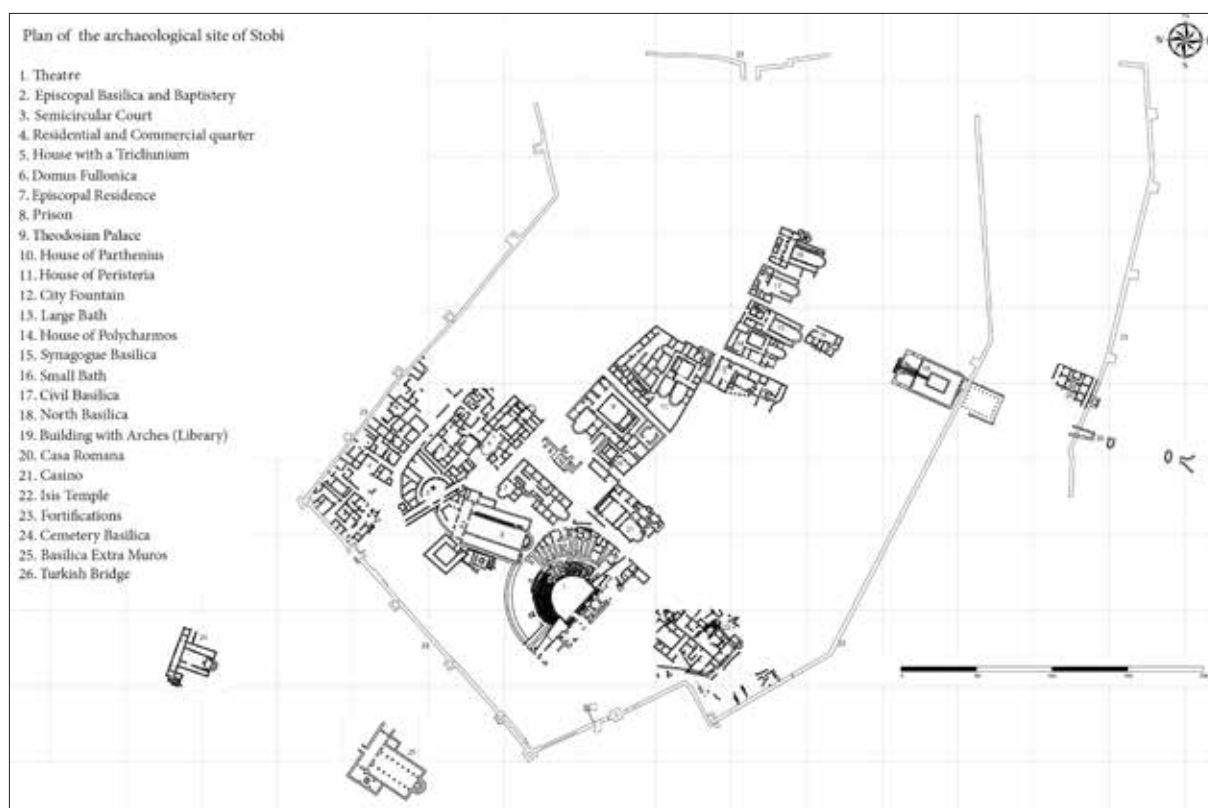


Fig. 4. Archaeological site Stobi, ground plan



Fig. 5. Archaeological site Stobi, aerial view from SW, 2009



Fig. 6. Archaeological site Stobi, aerial view from SW, 2019



Fig. 7. Archaeological site Stobi, aerial view from NE, 2008



Fig. 8. Archaeological site Stobi, aerial view from N, 2009

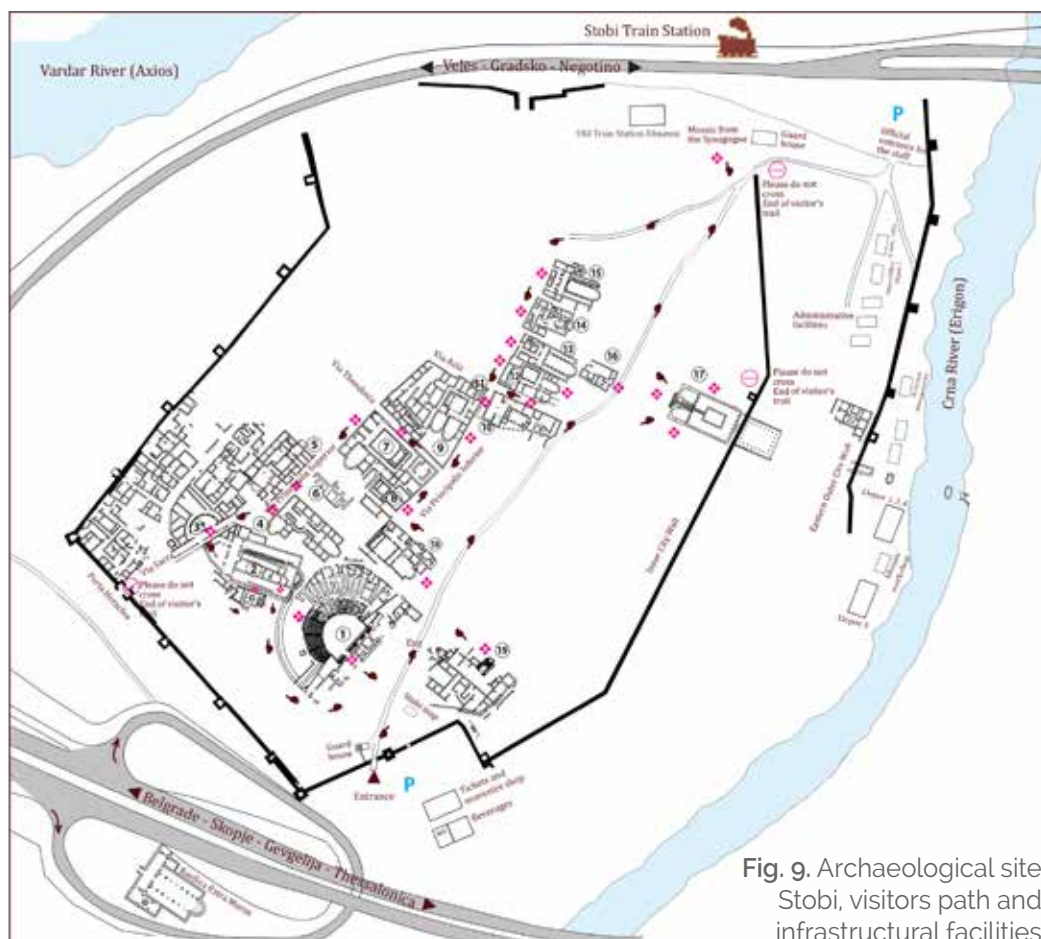


Fig. 9. Archaeological site Stobi, visitors path and infrastructural facilities



Fig. 10. Parking area and souvenir shop at the entrance



Fig. 11. Aerial photo of Stobi, 1930s



Fig. 12.
Excavations of
the Theatre in
the 1930s

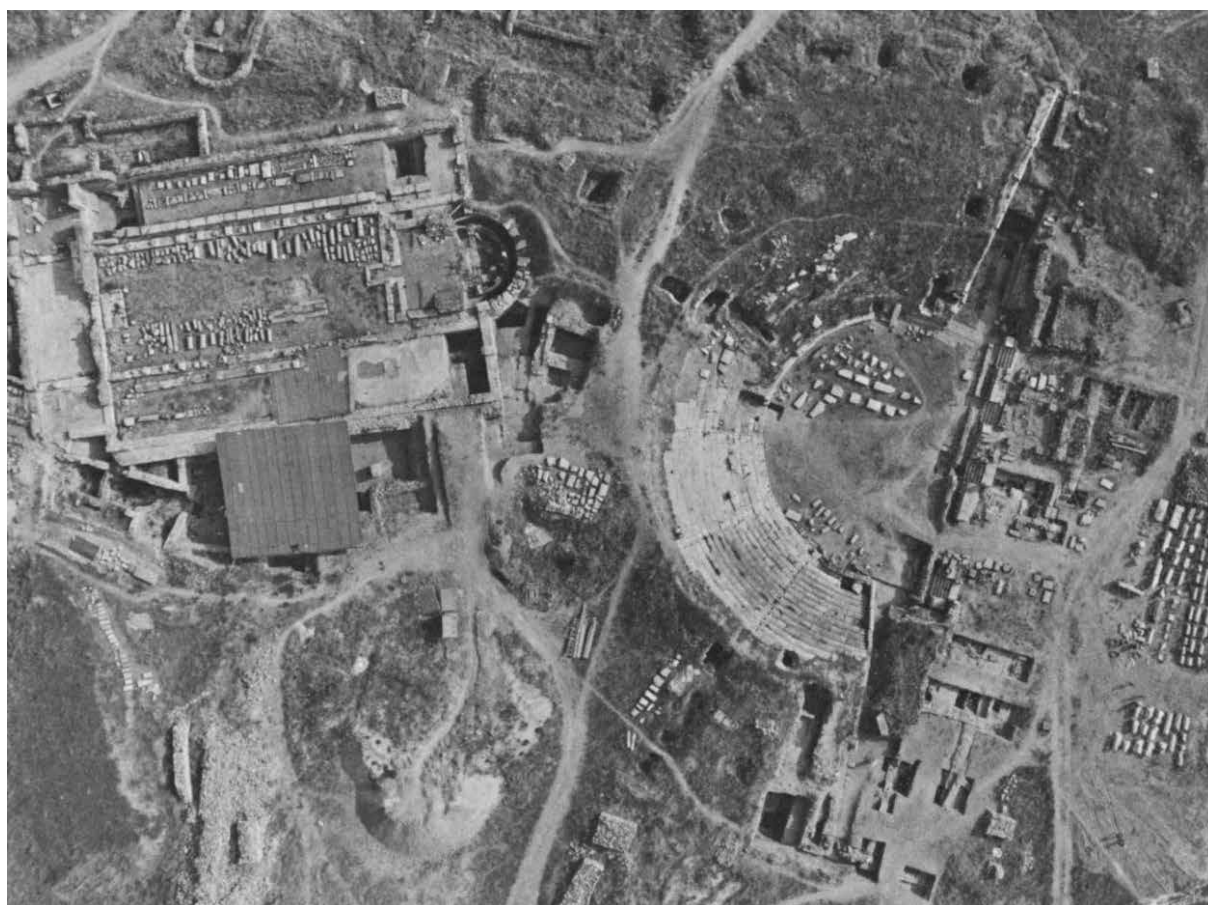


Fig. 13. Aerial photograph of the Episcopal Basilica and the Theatre, 1970s



Fig. 14. Professor E. Gebhard on the excavations of the Theatre in 1970s



Fig. 15. Stobi in the late 1980s, view from SE



Fig. 16. Rescue excavations at the West Cemetery and Late Antique suburb of Stobi, 1992

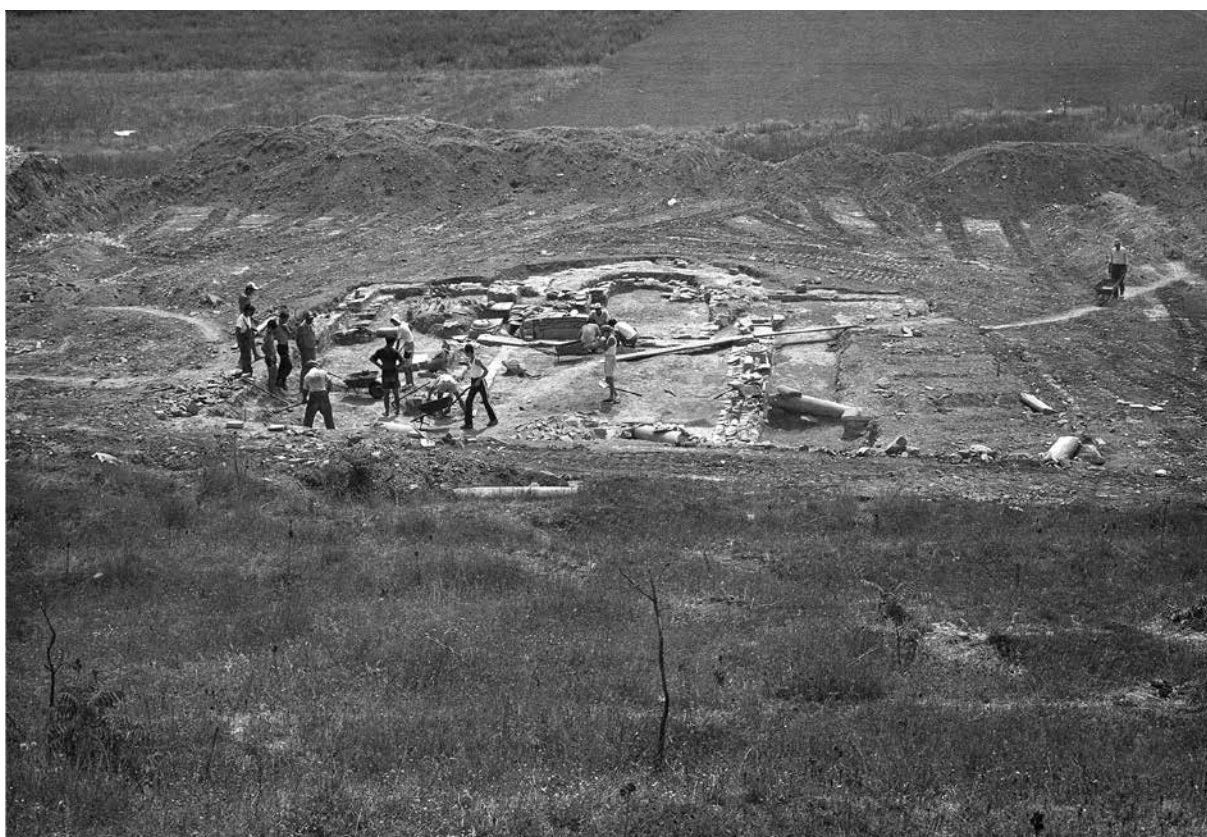


Fig. 17. Excavations of the Basilica Extra Muros, 1990s



Fig. 18. Aerial view of Stobi, 2000-2001, view from SE



Fig. 19. Excavation of the Building with Arches, 2000s



Fig. 20. Large scale systematic excavations at Stobi in 2009, view from E



Fig. 21. Excavations of the Residential and Commercial Quarter in 2009



Fig. 22. Balkan Heritage Field School: excavations on the area between the Theodosian Palace and the Prison in 2017



Fig. 23. Participants in the Balkan Heritage Field School at the Theatre at Stobi, 2014



Fig. 24. Conservation of the wall paintings in the Early Episcopal Basilica, 2004



Fig. 25. Conservation of the House with a Triclinium in 2011



Fig. 26. Conservation of the Theatre, 2016



Fig. 27. Conservation of the wall painting of the Early Episcopal Basilica, 2010



Fig. 28. Participants in the Balkan Heritage mosaic conservation workshop in the Theodosian Palace in 2013



Fig. 29. Participants in the Balkan Heritage mosaic conservation workshop, narthex of the Episcopal Basilica



Fig. 30. Conservation of the mosaic in the Baptistery, 2017



Fig. 31. Conservation of the mosaic in the Baptistery, 2017

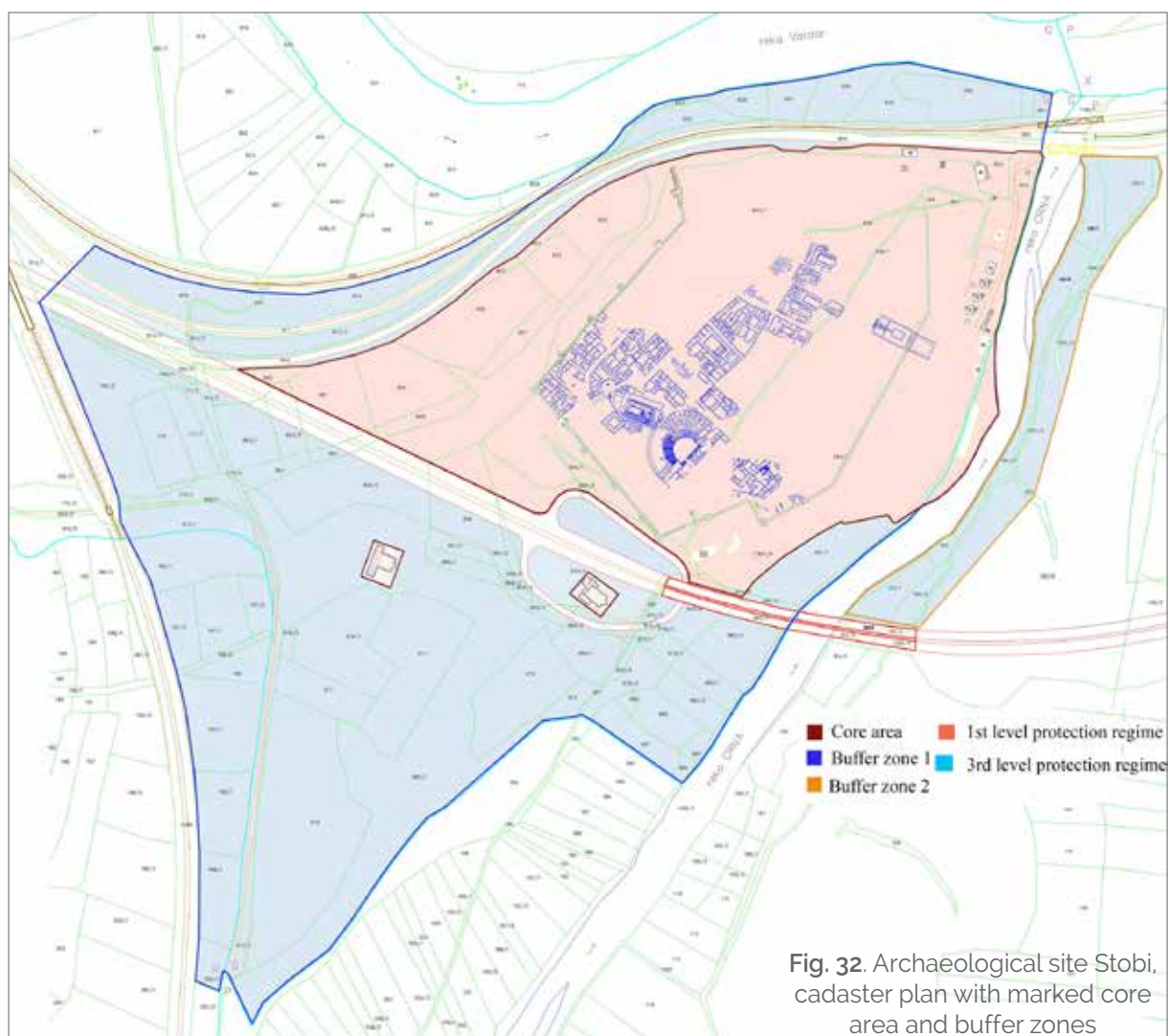


Fig. 33. Accommodation facilities at Stobi



CONSERVATION POLICIES AND PRACTICE

This section describes the conservation issues and challenges at Stobi. It proposes routine processes and special procedures to address them. And finally, it identifies standards and research projects and initiatives that are needed to inform these processes.

The many initiatives recommended in this section will take years to implement and require a phased approach. Considered of the highest priority is the establishment of routine conservation processes. Many of the other initiatives would naturally evolve from the establishment of these processes.

4.1. ARCHITECTURAL MONUMENTS OF STOBI: PRIORITY INTERVENTION

Priorities: Based on the significance and the state of preservation of the buildings at the archaeological site of Stobi, priority interventions are categorized as:

Group 1: low priority: Buildings in this group are sufficiently excavated and conserved for the purpose of presentation; small scale excavations and conservation are required, cleaning of the lichens, replacement of the deteriorated sandstone; maintenance and preventive protection:

North Basilica, Civil Basilica, House of Polycharmos, Small Bath, Large Bath, City Fountain, Domus Fullonica, House with a Triclinium (within the 6th century Residential and Commercial Quarter), Extra Muros Basilica, Temple of Isis.

Group 2: medium priority: Buildings in this group are partially conserved; further excavations for the purpose of conservation and presentation, conservation of the non-conserved parts, re-conservation (cleaning lichens and replacement of deteriorated sandstones are required in certain places); maintenance:

Synagogue Basilica, House of Peristeria, House of Parthenius, Theodosian Palace, Casino, Episcopal Residence, Semicircular Court and shops along Via Sacra.

Group 3: high priority: Buildings in this group are not sufficiently excavated or conserved and they have high priority due to their significance, size, decorative elements and the potential risks for them being damaged in any way, require further excavation, conservation and maintenance:

Episcopal Basilica and the Baptistry (shelter needed), Theatre, Building with Arches (shelter needed), the complex around the Temple of Isis, Casa Romana, Prison, northwest and southeast segments of the fortification walls, Cemetery Basilica, 6th century Residential and Commercial Quarter.

For detailed description of all the monuments see Appendix 9.

4.2. VULNERABILITY/RISK ASSESSMENT FROM DYNAMIC NATURAL HAZARDS AND HUMAN ACTIVITIES

4.2.1. NATURAL DISASTERS AND HAZARDS

a

Seismic risk: The seismic zoning maps of Macedonia, as well as the list of historical earthquakes, show that the entire territory of the Republic of North Macedonia is an active seismic area. (Fig. 34 and Table 1). According to the seismicity map, there is a return period of earthquakes of 500 years; this is the main reference used for building regulations in the construction of structures in seismically prone areas. Stobi is situated in the zone of 8 degrees on the Mercalli scale. Considering its seismo-tectonic position (Figs. 35-37), there is a large potential for seismic activity from the faults in the immediate vicinity of the Stobi. This official data is relevant for standard locations and structures, like residential and other buildings. In contrast, Stobi is an archaeological site at stake, with monuments of an extraordinary nature and importance. The city of Stobi was devastated by earthquakes during different periods. The archaeological evidence shows that earthquakes struck the city in 300 CE or slightly later, in the early 6th century and in the late 6th or early 7th century.

Risks from flooding: Erosion of the banks of the Crna River along the archaeological site of Stobi can damage the buttresses of the Ottoman-era bridge and is especially dangerous for the depots near the river and the deposited archaeological material. Construction of the dam on the Crna River and creation of the artificial Tikveš Lake in 1968 reduced this threat. The water from Lake Tikveš is used for irrigation and for electricity. The irrigation is done through the Tikveš hydro system, and the Tikveš Hydro Power Plant is constructed near the dam. Construction of the Tikveš dam and hydroelectric power plant on the Crna River with its two aggregates was completed in 1968 while the other two units were put into operation in 1981. The rise of the water level in the river and in the lake in 2014 due to large quantities of rain caused the opening of all four units of the dam, which caused a collapse of the riverbank adjacent to the artifact store (Figs. 38, 39). Considering the position and the risk of flooding, a project for reinforcement of the left bank of the Crna River along the archaeological site of Stobi was designed, based on geo-hydrological research in 2015 but still awaits implementation. The eastern side of the site, adjacent to the Crna River, is a natural flood plain. This prompted construction of flood defenses in antiquity. The raised water levels in both the Vardar River and the Crna River can provoke the rising of the subterranean waters especially on the lowest east terrace and flooding of the discovered structures, such was the case in 2010 with the Building with Arches (Fig. 40).

Risks from atmospheric influences: Climate changes, temperature differences throughout the year (and even between day and night), the atmospheric water which causes degradation and salts on conserved as well as on newly discovered buildings without conservation (Figs. 41-42), subterranean water at the lower terrace (Fig. 40), and the vegetation (grass, moss, lichen) (Figs. 43-48) are among the main risk factors which contribute to the continuing damage to the site. The buildings in Stobi are mainly built of poor-quality sandstone, a soft stone, and are subjected to fast degradation not resistant to atmospheric influences and vegetation (Figs. 49-51).

Risk from animals' nests: The archaeological site of Stobi is the natural environment of many animals and birds. Some of them can cause damage mainly on the stratigraphic layers and sometimes on the architectural remains by building nests or digging holes below ground.

4.2.2. HAZARDS FROM HUMAN ACTIVITIES

Risk from military activities at Krivolak: The military complex at Krivolak located opposite of the site, on the right bank of the Vardar River produces strong ground vibrations through controlled explosions during the military exercises which represent a potential danger to individual structures on the archaeological site. The destruction of military weapons at Krivolak also represents a potential risk for the human health and environment.

Risks from air pollution: Extraction and refining of iron and nickel ore at 21 km and a stone quarry at 15 km to the southwest of the site both cause noticeable air pollution. This is also evident in pink chemical precipitates in some ancient stone basins on the site. The actual damage to masonry at Stobi has not yet been determined. Although the ferronickel factory "Fe-Ni" is at a distance of 21 km from the site, its harmful influence is visible especially on the marble elements. The exhaust gases, dust and iron particles are deposited with rain and wind. Air pollution also comes from gases from the vehicles on the highway (Figs. 52, 53) The Skopje-Thessaloniki motorway was constructed within and over the archaeological site of Stobi in 1995 (Figs. 3 and 5). Traffic vibrations affect this area, but the Theatre, Episcopal Basilica and its Baptistery may be at particularly high risk. While the proximity of the motorway Skopje-Thessaloniki is advantageous for attracting tourist to the site, the exhaust gases and the vibrations from the large trucks and vehicles on the bridge are damaging the buildings nearby.

Risk from theft: Although the site is fenced and has 24 hour guard service, there is always a risk of potential theft of smaller architectural elements on the site, or moveable finds stored in the improvised storage facilities.

Agriculture: Use of land around the site for agriculture, especially to the southwest, south and southeast of the town, where the necropolises and the two basilicas extra muros are located.

4.2.3. OTHER DIRECT OR INDIRECT RISKS WHICH AFFECT OR DAMAGE THE SITE OR SLOW DOWN THE PRESERVATION PROCESSES (LEGAL ISSUES AND PROCEDURES)

a

- Lack of maintenance (Fig. 54) and monitoring of the site in the past, due to lack of finances, equipment and human resources.
- Incomplete archaeological excavations and documentation.
- Lack of final conservation and restoration works on the excavated buildings (Figs. 55-58).
- The early conservation works made with inappropriate materials, especially remedial ones on walls (Fig. 59-62) that have not been renewed, inappropriate adhesives for restoration and anastylosis of marble elements and mosaics.
- The shelter above the Episcopal Basilica that is significantly damaged and a danger to the building and its visitors. The roof is leaking which is causing damage to the conserved mosaic floor.

a Lack of coordination between the archaeological research and conservation works, i.e. postponed conservation activities most often as a result of insufficient funding.

a Pending document for re-valorization of the archaeological site of Stobi and unimplemented rules for protection in the core area and buffer zones (see pp. 16, 26-27).

a Lack of documentation for urban planning, necessary for infrastructural projects and others that require a construction license according to law.

- Long and complicated procedures and legal regulations.

a Lack of serious studies and understanding of conservation principles and of the use of conservation materials that consider all factors for survival of the buildings: their cultural and historical significance, original materials and especially the possibility of maintaining them in present-day conditions, the exposure of the buildings to climatic conditions characteristic for the region and the possibilities for their survival without shelters which cannot be used in all cases; and, the ideas for revitalization and re-use of the ancient and modern buildings in the future.

a Lack of trained professionals, especially in the field of conservation.

- Lack of awareness among the stakeholders and decision-makers to foresee the overall conditions in which the buildings and their elements should survive as an entity, and selective attention due to personal interests.

- lack of proper protective fencing around the presented buildings that would protect them from reckless visitors. Lack of guides, guards and video surveillance.
- Lack of strong awareness of the significance and protection of cultural heritage among the visitors.
- Use of buildings for festivals and other cultural events, especially if the building has not been conserved and protected. Additional damage to the marble seats of the Theatre, due to many years of usage without prior conservation has been observed.
- Inconsistency in the general policy and lack of continuity in the protection of the cultural heritage, lack of a solid permanent system for implementing the strategies and action plans for protection of cultural heritage.

4.3. CONDITION OF ANCIENT FEATURES

a

Stone masonry

Most masonry at Stobi is formed of Tertiary flysch sandstone rubble in ancient (lime or lime-earth) mortar, or in some cases restored with modern cement mortar. Much of this stone is inherently unstable, being composed of alternating beds of sandstone and shale (with illitic and montmorillonitic clay) and subject to fracturing, probably due to water-soluble clay content. With the progressive disintegration of stone, the structural integrity of walls is threatened if the stone is not replaced. Some Late Antique walls are also very fragile as they consist of a weak, earthy, lime mortar.

All stone, including marble architectural features, is subject to very heavy colonization of lichens. This clearly causes pitting of the stone due to secretion of acids. On decorative stone, as in inscriptions, this threatens their very significance.

Industrial pollution from nearby mineral industries may impact stone as well, but this has to be corroborated with targeted analysis.

Conservation interventions have varied over time, such as the design of mortar wall capping, with some being very poor in performance and condition. Of the buildings that have been heavily restored in the past, many are in very serious condition, as a result of lack of subsequent maintenance. Some modern mortar repairs have failed, either due to preparation of the lime and/or poor work practices. Much current conservation work, in terms of pointing and capping, is crude and completely destroys the archaeological aesthetic of the buildings so treated. It appears that excessively strong cement based mortars have been used.

There is no comprehensive condition survey of the buildings on site, so the scale of the gravity of the problem has not yet been quantified. Lack of documentation and monitoring of past repairs also impedes the understanding of the causes and rate of deterioration.

Pavements and other features

In general, mosaics and opus sectile pavements are in good condition, partly due to winter protection under sand and waterproof and breathable fabric. This practice is clearly labor-intensive. However, long-term results are not easily predictable. Annual spring exposure exposes mosaics to repeated environmental stress, with potential for sustaining damage in the long-term.

Three mosaics have been lifted, re-laid on honeycomb panels with epoxy adhesive plus a small percentage of white cement and reinstated on site. This technique was developed for mosaics kept indoors. In time, the mounting is likely to fail in unstable external conditions, due to degradation of epoxy, and severe stresses of expansion and contraction. This will result in widespread failure of large areas of mosaics in the future.

Simple, undecorated pavements of clay tiles or sandstone slabs receive no special attention, so are at risk from intense biological growth and winter freeze - thaw action. Similarly, ancient water basins, some lined with plaster, suffer severe degradation from water ponding and freeze-thaw action.

4.4. CURRENT CONSERVATION PRACTICES AND ISSUES

According to the Rules for conservation projects, the research and conservation project should be done by a team of professionals of various expertise depending on the type of the cultural heritage. Only licenced conservators can sign the conservation project, while members of the team prepare and sign their contributions. For example, for architectural heritage the team consists of an archaeologist who conducts the excavations of the building and has knowledge of the construction phases, stratigraphy, chronology etc., a senior architectural conservator, a structural engineer, chemists, and a stone conservator if there are architectural sculptures or other elements included, etc. Prior to the completion of the conservation project they are obliged to perform research on the original construction materials, type of masonry, types of stones, etc. The procedure is the same for movable finds.

Prepared conservation projects are subject to two control mechanisms before the actual licence is issued by the Directorate for Protection of Cultural Heritage (DPCH). The first is the committee, usually consisting of three senior and experienced conservators, formed by the NCC (or NI Archaeological Museum if the conservation project refers to movable finds) for each project separately. The committee evaluates the project itself, its justification, content, the way of preparation according to the regulations, technical documentation, and the explanation of the conservation processes and conservation materials. The second is the Department for Architectural Cultural Heritage within DPCH. After the licence is issued, a senior conservator assigned by NCC (NI Archaeological Museum if the conservation project refers to movable finds) and an inspector from DPCH control the implementation of the project.

Stobi has licensed conservators of mosaics and stone, ceramic and glass artifacts, but no architectural conservator. For architectural conservation, licenced conservators are engaged from the NCC. Some of the employed archaeologists are trained to prepare and oversee the architectural conservation projects with the assistance of a licenced architectural conservator. Preventive conservation is limited by the law to a few actions.

Excavation and conservation

There is a severe backlog of conservation at Stobi, due to an imbalance between excavation and conservation. Many walls around the site are at risk of complete collapse. There are also a great number of excavated trenches in progressive collapse, or deep trenches undermining adjacent ancient walls.

The imbalance between excavation and conservation is due to many factors in the past and present: legislation, general policy for the annually approved projects and budget of the Ministry of Culture, frequent changes in the priorities of past and present management, human resources and capacities. The national legislation requires a sufficiently excavated area of the building and clear understanding of the construction phases, as well as projects prepared for any conservation work where use of modern materials for conservation is necessary, including re-pointing and capping of the architectural remains or any chemical substances used for cleaning. Preventive conservation refers to limited activities which can be undertaken to prevent further deterioration until the project for actual conservation is prepared (covering, temporary supports for architectural remains, affixation of the edges of the mosaic floors and frescoes, removal of the marble elements and temporary shelter where possible). Preventive conservation is allowed only during the excavations if a senior, adviser or licenced conservator is included in the team.¹ Maintenance refers to permanent cleaning of the buildings from vegetation. This puts the authenticity and very survival of the site at risk, which would be a huge loss to the nation and future generations.

¹ Possible activities of preventive conservation were included in the Law for protection of cultural heritage in 2015.

Current legislation

The existing national legislation regarding cultural heritage consists of two specialized Laws (for protection of cultural heritage² and for museums³ and many regulations⁴ for different aspects of the work). Both are closely connected with other law regulations which refer to the institutional organization (laws for culture and for public administration). The main issues in the implementation are long and complicated procedures, insufficient human resources and control mechanisms.

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Skills shortage and training

There are licensed conservators of mosaics and stone, ceramic and glass artifacts at Stobi, but without formal education.⁵ There is no permanently employed architectural conservator at Stobi.⁶ To implement conservation projects, a senior/adviser or licenced architectural conservator is engaged from the National Conservation Center or other institutions.

4. 5. RECOMMENDATIONS

4.5.1. REVISE NATIONAL LEGISLATION

Changes in legislation that permit a more comprehensive and flexible approach to site maintenance and conservation are recommended, especially for preventive conservation or urgent measures for protection. Clarification of the terminology and compliance with the Law for construction and urban/physical planning. Changes should be applied for the procedures and regulations of the movable finds as well. Changes in the Law for museums are recommended for the definition of the museum object, museum material and study material, respectively for the regulations for their documentation, evaluation, treatment, storage and measures for protection. Examples of other European legislation could be consulted for potential good models.

4.5.2. ESTABLISH ROUTINE CONSERVATION PROCESSES

Undertake significance, condition and risk assessments

Standard condition and risk survey protocols need to be developed for all masonry and architectural features, elements of the site, for preliminary and detailed surveys. The preliminary surveys identify those elements / buildings that require more detailed surveys.

These should refer to archival records at NI Stobi and elsewhere, about past excavation, condition, and restoration, to understand the cause and rate of deterioration of ancient buildings and features.

A GIS methodology is essential to best manage these assessments and update them. It will also be useful for other objectives (such as planning maintenance, visitor studies, interpretation plans, etc.).

2 Law for protection of cultural heritage (Official gazette no. 20/04...11/18).

3 Law for museums (Official gazette no. 66/04...39/16).

4 For laws and regulations concerning cultural heritage see: <http://uzkn.gov.mk/mk/a>

5 Formal education for conservators exists at the Art Academy (mosaic, frescoes, icons, oil or other art techniques on canvas) and at the postgraduate studies of the Faculty of architecture for architectural conservators. Usually conservators receive practical training by senior or adviser conservators from conservation centers in the country during implementation of the projects. There are options for further specialised training abroad financed by the annual program of the Ministry of Culture, usually limited in funds. Engagement of foreign experts depends also on the funds for the projects. Serious gap in creating professional conservators in the conservation centers was created in the last 20-30 years due to the employment politics in the country.

6 The stone conservator can work on architectural marble elements at the site, but not on the stone and mortar structures for which an architectural conservator must be in charge.

Objectives are to:

- Establish common terminology:

- Establish theoretical references
- Establish glossaries

- Establish tools and equipment/software:

- GIS and other documentation systems
- Establish survey methodologies and protocols (e.g. recording formats)

- Evaluate and integrate assessments:

- Carry out assessments within a multidisciplinary team (as required)
- Integrate all types of assessment (significance, condition, risks) on one GIS database (See Appendix 3, section 2; See references in Appendix 4).

4.5.3 SPECIFY AND PROGRAM INTERVENTIONS

A protocol for implementation of conservation work needs to be created. Following assessments of significance, condition and risk, actual interventions need to be planned according to priorities identified in the preliminary and detailed condition surveys of all buildings/elements of the site. Responses should be prioritized according to risks to the significance of archaeological resources and human safety.

Decisions should be made according to the inner organization (human resources, their job description and responsibilities according to Laws and other regulations) and approved by the Director. Objectives are to:

- Establish protocols:

- Define typologies of interventions
- Define standards and guidelines (see Appendix 2)
- Define multidisciplinary roles/contributions

- Design interventions:

- Choose and design interventions
- Define outcomes and outputs
- Establish professional consensus
- Establish budget and other constraints
- Apply for approval for interventions with necessary budget request
- Tender work

- Program interventions:

- Identify priorities according for immediate, short- and medium- term interventions (based on previous assessments)
- Program conservation interventions
- Establish documentation protocols
- Define seasonal, short-, medium- and long-term implementation
- Organize work site and safety needs
- Organize supervision and interim control of the outcomes/outputs.

4.5.4. DOCUMENT CONSERVATION INTERVENTIONS

Documentation is not only crucial to consistently characterize archaeological structures and artifacts once they are discovered, but also to record the interventions carried out on them. This is especially important to allow researchers and specialists to distinguish ancient materials and construction from modern ones.

Any type of intervention should be fully recorded. Objectives are to:

- Establish protocols/standards and tools for documentation:

- Define goals and use of documentation
- Exploit existing documentation
- Establish the most efficient and cost-effective tools
- Define how and when to record the interventions

- Implement documentation:

- Describe the intervention, accompanied by technical sheets illustrating materials and methodologies applied
- Allow flexibility and adjustments
- Compare design stage products with actual interventions
- Swiftly record unforeseen conditions
- Use documentation results to address solutions

- Archive/manage documentation:

- Ensure long-term conservation of archives/database
- Use documentation of interventions to verify their long-term effectiveness.

4.5.5. MAINTAIN AND MONITOR

Conservation interventions are only supported and sustained if supported by routine maintenance operations. This means the need to develop a program of planned and reactive maintenance.

Major new interventions and maintenance need a systematic monitoring program to determine changes in condition. Monitoring can be very useful even without a previous intervention; it is effective in understanding the rate of deterioration and in defining the characteristics affecting the deterioration over time.

This is indispensable for planning scheduled maintenance cycles and any new conservation interventions. Monitoring should accompany maintenance cycles (daily, weekly, month, semiannually, annually). Objectives are to:

- Establish protocols and outcomes:

- Define personnel and material requirements and necessary budget
- Establish a multidisciplinary team
- Identify long-term goals to incrementally add all heritage features
- Monitor: on the basis of the assessments, establish monitoring needs and objectives
- Monitor: define resources and possible partnerships
- Maintenance: define typologies of maintenance (planned, reactive)
- Maintenance: define guidelines

- Design monitoring and maintenance:

- Organize a phased implementation of a planned maintenance and monitoring program

- Monitor: design cost- and time-effective methods related to needs and objectives
- Increase the frequency of maintenance to avoid project-based interventions
- Establish priorities, budget, human resources and constraints
- Include interventions on both ancient heritage and modern infrastructure
- Define timing of operations in relation to the seasons and visitor management

- Implement monitoring and maintenance:

- Document interventions
- Exploit results of monitoring in managing maintenance
- Review maintenance plan at regular intervals to ensure that it is effective (See Appendix 3, section 8).

4.5.6. DEFINE NEW CONSERVATION POLICIES

Balance archaeology and conservation

There needs to be a step change in site management in favor of conservation over excavation, to redress the current imbalance. The situation as described above, is completely unsustainable.

The changes in the Law and introduction of a more flexible policy of protection of artifacts and structures during excavation is urgent, to ensure that future excavation is sustainable, with appropriate resources allocated to conservation (See proposed guidelines, Appendix 2, section 1).

Define philosophical intervention policy

Policies for the treatment of archaeological structures are undoubtedly defined in national legislation. However, NI Stobi benefits from considerable independence in decision-making, so this should be capitalized on to formalize policy for the site. This is to ensure: maximum preservation of significance of each feature/building for the future; highest standards of interventions; consistency in decision making; consistency in defined priorities for intervention in accordance with the type and degree of their significance and plan for preservation of different historic periods which are part of the life and evolution of the site.

The policy should define:

- General philosophy of preventive and remedial intervention
- When anastylosis/restoration/reconstruction are admissible (in accordance with the Law and regime for protection of the site implemented in the document for re-evaluation)
- Decision-makers and the process of decision-making for each conservation project.

Define conservation standards and guidelines⁷

To ensure the optimal preservation of all parts of the site of Stobi, the development of conservation standards and guidelines is essential. Standards define the quality of different conservation treatments (e.g. repointing, stone replacement, etc.) and guidelines describe the procedures and materials to achieve them. They help to guarantee consistency between the work of different contractors, ensure continuity of managers over time, and produce a uniform aesthetic approach to the presentation of the site. Standards and guidelines can be developed from the research recommended below (Appendix 1) and experience gained at Stobi in different forms of intervention. Establishing standards will also help up-skill staff at NI of Stobi.

Initial priorities identified for the production of standards and guidelines are as follows (see Appendix 1):

- Preventive conservation during excavation

⁷ Conservation standards are defined in the Rules for conservation projects (Official gazette no. 44/06), and especially in Chapter III: "Special standards and normatives for conservation projects".

- Wall capping design and materials
- Shelter design parameters
- Reburial design parameters
- Storage design parameters
- Water management.

Define the role of reburial

Mosaics are currently reburied on a seasonal basis, and this appears to be beneficial. However, other sensitive architectural elements and features could also be protected (other types of pavements, basins with render that are at risk from water ponding and freeze - thaw).

However, reburial should be extended to some features for a longer period (e.g. years), if the feature is not visible from the path of visitors. Some mosaics, undecorated pavements and certainly many basins are in this category. This ensures their preservation, reduces work for seasonal burial/re-exposure, and saves resources. Of course, long-term reburial requires good design and materials for reburial stratigraphy, and subsequent maintenance (see references Appendix 4).

A new policy on reburial should define (subject to research, see Appendix 1, Section 3):

- ~~W~~here seasonal burial is appropriate
- ~~a~~Where short-, medium-, and long-term reburial is appropriate (See Appendix 2, Section 4).

Define the role of shelters

Shelters, like reburial, are an essential conservation intervention to protect significant and vulnerable features on an archaeological site. Overall sustainability of the site's significance should encompass not only the physical (and virtual) protection of the archaeological site, but also of its landscape, which represents a remarkable combination of archaeological remains and natural environment. The landscape setting is a major part of the site's historic and aesthetic significance and requires careful management and interpretation. The visual interaction with the landscape is also of very high priority at Stobi.

In this respect, shelters can have both a positive and negative contribution. They should protect archaeological structures in the first instance, and also enhance the visitor experience of the site (building). Secondly, their design should not impair the visual effect of the surrounding landscape to the site, nor dominate in the whole environment.

The need for new shelters at Stobi must be carefully determined, taking into account all aspects that may adversely affect the ambient values of the archaeological site itself.

Temporary shelters may also be installed to protect certain buildings, but they should provide adequate protection from the elements, be easily removable when needed, have a designed duration (bearing in mind that temporary shelters tend to become permanent), with cyclical and reactive maintenance.

A clear policy expressed in practical guidelines is needed to guide the decision-making process with respect to shelters at Stobi:

- ~~S~~helters should be considered in the context of the general strategy for site conservation and presentation, including their impact on the landscape
- ~~T~~heir design should follow the creation of a design brief that prioritizes performance (protection) over aesthetic criteria
- ~~a~~ The design process should be managed by a multidisciplinary team including a project manager (architect), archaeologist, architectural conservator and other specialists as needed
- ~~a~~ They should be planned and implemented in a larger framework of drainage and water management activities (See Appendix 2, Section 3).

4.5.7. DEVELOP A DISASTER MANAGEMENT PLAN

The archaeological site of Stobi is located in an area subject to several risks (see section 4.2):

- Active seismic risk of local geography (rare risk)
- Flooding from the Crna River (sporadic risk)
- Vibrations from the motorway (constant risk)
- Atmospheric pollution from mining activities (constant risk)

Disaster risks and actual disasters are an unavoidable factor that can damage or destroy the values of an archaeological site. A Disaster Management Plan needs to be developed. The main objectives are: disaster prevention and management; risks mitigation plans; and emergency preparedness before, during and after a disaster. The types and sources of risk that may affect the site should be defined, and be periodically reviewed and revised, in order to adopt new measures in response to events, and future needs for site protection.

4.5.8. DEVELOP PROFESSIONAL ROLES & CAPACITY

There is a clear lack of architectural conservation expertise on the site. Some archaeologists have, by necessity, developed some experience in the area of conservation. As excavators of certain buildings they are involved in conservation projects as part of the team for research projects, creation of the conservation projects or their implementation as explained above. There is a permanently employed technician for immovable heritage whose job description is to work on the documentation.

Proposed measures are to:

- Employ an architectural conservator
 - Train the professional staff at Stobi to respond to the critical conservation needs: undertake condition surveys; specify the type of conservation repairs and oversee interventions; and manage research projects (in conjunction with academic partners)
 - Appoint an expert as consultant, to advise on conservation issues, training programs and assist in upskilling staff
- Identify regional training opportunities in relative subjects
 - Create a training fund to support NI Stobi staff to attend such training elsewhere
 - Create a reference library of supportive publications

Stobi also has huge potential for increased training opportunities which will additionally raise conservation standards at a national level.

- Plan and establish a summer field school in architectural conservation in collaboration with the Faculty for architecture, Skopje University, to raise interest among the students of architecture and build capacity not just for Stobi, but for other conservation centers as well.
- Develop a long-term curriculum that could lead to a full professional qualification,⁸ in conjunction with the Faculty of architecture
- Offer graduates of architectural conservation from local and foreign universities internships and opportunities to participate in the ongoing projects
- Create a reference library of supportive publications (see Appendix 4).

8 As a model see West Dean College Professional Development Diploma in Historic Building Conservation <https://www.westdean.org.uk/study/degrees-and-diplomas/courses/professional-development-diploma-in-historic-building-conservation-and-repair>.

4.5.9. ESTABLISH RESEARCH PARTNERSHIPS

Various research partnerships are proposed in Appendix 1. These can be extremely beneficial in addressing long-term conservation problems at Stobi. Research partnerships should be limited in number and the scope of the research precisely identified; managing research partners is time consuming and resources should be allocated for this purpose:

- Define strategic research programs internally
- Articulate advantages for the site, deliverables and timing.

4.5.10. UNDERTAKE TECHNICAL CONSERVATION RESEARCH

Creation of good conservation practices at Stobi requires several strands of technical research, in order to define the best materials and methods of treatment. Some of these can be done by existing staff, whilst others require collaboration with academics and their students. Research would help define standards and guidelines for conservation (see section 4.5.6 in this chapter; see Appendix 2).

Recommended research priorities are as follows:

- Stone deterioration and conservation
- Mortars for conservation
- a Protection of pavements and other features
- Monitoring and assessment of dynamic risks (see Appendix 1 for full details).

4.6. CONDITION AND RECOMMENDATIONS FOR THE STORAGE FACILITIES AND PRESERVATION OF MOVEABLE FINDS

4.6.1. ARTIFACTS IN STORAGE

Until 2019, 4625 finds made of various material were inventoried: ceramic, glass, various metal objects (bronze, copper, iron, silver, gold and other), stone (marble or other types of semi-precious and precious stones), bone and wood. They are divided into three main collections: Pre-Roman period (including finds from Prehistory), Roman period, and Late Antique period. There are two additional collections: numismatics and a collection of stone monuments (sculpture, reliefs, inscriptions, architectural marble etc., including the detached frescoes and mosaics or fragments of frescoes and mosaics found during the excavations). They are stored in four cabins and other improvised structures which are used for storage. There is a large number of architectural marble decorations deposited near the buildings where they were found.

The condition of ceramic and stone objects in the storages is generally stable. The condition of conserved glass, bone and metal objects is stable.

The condition of metal objects that are not conserved is alarming. The condition of objects made of sandstone is critical. The condition of marble architectural elements in open air is critical mostly because of lichens, moss and pollution. The condition of conserved frescoes is stable, but it is critical for those which are not conserved. (See Appendix 11).

Urgent conservation and protection are necessary for the unconserved metal, marble elements in the open air and for the frescoes. Proper storage facilities, shelves, storage boxes and conditions are required for all moveable finds.

4.6.2. STORAGE FACILITIES

There are four storage facilities for moveable finds: two wooden cabins near the Crna River (Depots 1, 3, 4, 5), a tin hangar near the old entrance to the site and a room (Depot 2) in the main office

(see Appendix 10 for detailed description). Except for the hangar built in the 1970s for storage of archaeological finds, the rest were not built to serve as storage, but have been adapted for the purpose. Only one (Depot 2 in the main office) is completely renovated (interior and exterior walls and floor). Existing metal and wooden shelves and wooden cabinets were reused, except for one made recently. Small inventoried finds are stored in the room (objects made of ceramic, metal, glass, and bone) along with museum documentation and excavation documentation. Inventoried finds are organized by the type of material and inventory number. Objects made of ceramic are on the metal shelves and two wooden shelves. A few large ceramic vessels are placed on the floor. Metal finds are in the wooden cabinets, except for the coins collection which is in metal and wooden cabinets. There are metal objects which are not conserved and are deteriorating. The glass and bone objects are in wooden cabinets. Objects are not placed in separate small storage boxes in the drawers, except coins. Each coin is in paper or plastic bags. The room is equipped with video surveillance, alarm, and climate control equipment. Portable fire extinguishers are placed in the main office on the upper floor. The door has an electronic lock and access in the room is restricted to the archaeologists, curators responsible for the collections and one archaeologist-documenter. There is a potential risk for the ceramic vessels on the metal shelves in case of seismic activity and risk of flooding because of the water pipes passing through the room.

The wooden cabin near Crna River (Depot 1, 3, 4) consists of two larger and two smaller rooms. The first large room (Depot 1) is a room for finds processing during excavations. It has a separate entrance and has no direct access to the other three rooms. Access to the large room (Depot 1) is available to the excavation teams. The other three rooms (Depots 3 and 4) are used for storage of marble finds (sculptures, inscriptions and architectural elements) and fresco and stucco decoration. Marble finds are placed on the floor and on the metal shelves along the walls. Fresco fragments are in wooden boxes, while fresco panels (conserved and placed on aluminum honeycomb carriers) from the Early Episcopal Basilica are leaned against the walls and separated in between with pieces of styrofoam. Access to Depots 3 and 4 is restricted to the curators only, however Depot 3 is not well secured (the entrance door needs to be replaced). The cabin has an alarm system. The walls and ceiling are in bad condition and objects are exposed to various pests and humidity.

The other wooden cabin near Crna River (Depot 5) consists of 29 rooms, of which more than half are used for storage of the so-called study (mass) material (pottery, glass, stone, marble, metal, animal bones, frescoes fragments and anthropological material) and the rest for tools. There is a single main entrance to the cabin, and each room where objects are kept has iron locks. The access to the rooms with the objects is restricted to curators and documentors only. The archaeological material from the excavation of different buildings is stored in different rooms. Fragments of pottery, glass, metal etc. are in plastic bags (baskets according to the archaeological documentation) and placed in plastic crates, placed one on top of each other on the floor, or in cardboard boxes. The stone and large ceramic objects are placed on the floor. One room holds ceramic fragments (special finds with field inventory numbers, not museum inventory numbers), placed on metal shelves. The anthropological material is well organized in cardboard boxes and placed on metal shelves. The fresco fragments are in cardboard boxes and placed on metal shelves and on the floor. The room at the northern end was recently adopted for storage of mosaic fragments with a separate entrance from the rest of the cabin. Mosaic fragments are stored on metal shelves. The walls and ceiling are in bad condition and objects are exposed to various pests and humidity.

Materials in the two stores adjacent to the Crna River appear stable, but the buildings and collections are at risk should the bank of the river collapse.

The tin hangar near the old entrance was built in the 1970s to store the archaeological material from the excavations: plastic bags with various study materials (ceramic, metal, glass, and bone) fresco and mosaic fragments and wall paintings and stucco from Casa Romana. Part of the stucco is temporarily removed in Depot 5. Some is on the floor, some on the metal or wooden shelves. The store is exposed to various hazards: pests, animals, humidity etc. The situation in the hangar is disastrous. The structure was built with unsuitable materials and is currently very dilapidated. It is virtually abandoned, with water seeping through the roof and overall a very poor condition of the interior. Many shelves have collapsed, and with them the boxes containing the archaeological finds. In recent years the staff have begun moving a large part of the mosaics to storage places with better conditions.

Despite occasional small scale repairs, the condition of the two cabins near Crna River and the tin hangar is terrible. The declaration of the archaeological site Stobi as monument of culture of first degree and its proposed re-evaluation as exceptional cultural heritage, subcategory - great importance, according to the law regulations requires a regime for protection in the core area which forbids construction of new facilities. Therefore, the storage facilities can be reconstructed in the same place and with the same size, except for the tin hangar which has to be removed. The reconstruction of the cabins will help the reorganization of the whole archaeological material and proper storage facilities.

4.6.3. RECOMMENDATIONS

A new permanent storage facility is needed to provide up to standard conservation conditions. To improve these and access to the collection in the short- and medium-term, an action plan needs to be developed.

The possible solutions are:

- 1) renovation of the existing storage facilities (Depot 4 and 5)
- 2) Providing specially equipped storage containers.

A model for the action plan is provided by RE-ORG: A Method to Reorganize Museum Storage (see Appendix 4). It examines four main components of storage: management, collection, building and space, and furniture and small equipment.

The RE-ORG method is divided into four phases:

- Getting started
- Storage condition report
- Storage action plan
- Storage reorganization implementation.

RE-ORG provides user-friendly evaluation forms that allow non-specialists to undertake the survey. These cover the following topics:

- Storage evaluation diagnostic
- List of materials and tools for storage reorganization
- Room data and assessment of major threats to the collection
- Assessment of storage furniture and space
- Assessment of administrative framework and management
- Collection analysis
- Evaluation of the documentation system
- Assessment of small equipment
- Building survey.

At Stobi, storage containers could be used as an interim measure, pending construction of a new facility (see references in Appendix 4).

APPENDIX 1: PROPOSED RESEARCH PROJECTS

Routine conservation processes described above need to be informed and supported by strategic research, to determine the most appropriate treatments for Stobi (as identified in section 4.5.2 in this chapter). The following topics are considered of greatest importance.

1. STONE DETERIORATION AND CONSERVATION

- Definition of masonry typologies

As stone deterioration is the foremost conservation problem at Stobi, masonry typologies need to be classified, in order to determine appropriate repair specifications for each type of masonry:

• Study and classify all masonry on the site

• See advice in Appendix 3, section 1.

- Sandstone deterioration and quarry sources

Stobi sandstone is particularly sensitive to humidity and deterioration, given its clay content (see 4.2.1). Addressing sandstone deterioration at Stobi is critical to the survival of its ancient structures, and needs a much better understanding to inform conservation repairs and stone replacement:

• Engage an academic partner for research on stone deterioration

• Identify geological variations of sandstone and its deteriorogens, chronological use, and create a predictive risk model

• Study stone from current and old quarries to assess durability and potential use for stone conservation at Stobi

• See references in Appendix 4.

- Role of pollutants in stone deterioration

The risk of pollution at Stobi is currently unconfirmed, and assumptions are based on empirical observations. Forms of damage need to be confirmed, as well as the origin of any harmful pollutants:

• Engage an academic partner for research on the role of pollutants in stone deterioration

• Design the research project

• Determine composition and source of pollution

• Monitor pollution levels and composition

• Simultaneously monitor the condition of stone in trial areas

• See references in Appendix 4.

- Lichen research

Lichens are particularly aggressive on sandstone surfaces. Indirect interventions could greatly reduce bio-deterioration:

• Engage an academic partner for lichen research

• Identify the species of lichen at Stobi, their impact on building stone, mosaics, and decorative elements

• Identify significant architectural elements at risk

• Identify potential treatments (biocides and light exclusion)

• Design treatment trials

• Implement treatment trials with their assessment

• See advice in Appendix 3, section 5.

2. MORTARS FOR CONSERVATION

A thorough review of mortars in use at Stobi is urgently needed. This involves understanding of aesthetic issues, the nature of appropriate mortars for conservation, sourcing local materials, and building expertise in their use for different applications (pointing, wall cappings, etc.):

- Identify local natural limestone geology, commercial materials
 - Promote commercial production of lime putty
 - Analyze ancient mortars as needed (e.g. Late Antique earth-lime mortars)
- Identify appropriate mortar formulations for different applications (pointing, wall capping, and by wall typologies)
- Trial different mortar formulations
- See Appendix 3, section 6; Appendix 4.

3. PROTECTION OF PAVEMENTS AND OTHER FEATURES

Mosaics are protected through winter reburial; other features such as undecorated pavements and water basins should be similarly treated. Current methods are labor-intensive. They need to be assessed and others should be trialed and their efficacy monitored:

- Assess the efficacy of different cover materials and the impact of seasonal exposure
- Review impact of uncovering mosaics in the spring to reduce possible stresses (e.g. by unearthing during a damp, cloudy day)
- Monitoring mosaics' condition (micro-cracks, salts, etc.) to help understand how to improve the seasonal protection
- See advice in Appendix 3, section 4.

4. MONITORING AND ASSESEMENT OF DYNAMIC RISKS

The very poor construction and condition of many masonry structures makes them very vulnerable to dynamic vibrations (see 4.2.1). Managing their preservation in these conditions requires a full understanding of dynamic risks to them.

- General monitoring

To monitor their response to seismic events and human activities (traffic vibration and controlled military explosions), a permanent monitoring network needs to be installed to record data on the structures and on the site. This would include continuous recording the response of selected structures and structural elements (cracks, stress and deformations) within them. This monitoring project should be elaborated and designed as soon as possible, as a necessary precaution. It would serve as a basis for development of a corresponding methodology for structural stabilization of the monuments against possible damage.

To define risks from traffic vibrations, the Theatre and the Episcopal Basilica need particular attention. For explosion risk, information should be obtained from the Army, regarding the programming and the intensity of blasts, with corresponding measurements and monitoring at Stobi to appraise their effects.

- Seismic risk

In accordance with regulations, international criteria and engineering practice, the detailed parameters of seismic risk at Stobi need to be determined, in order to assess the expected vulnerability of its structures. In engineering terminology, this means defining detailed and precise seismic parameters for design and analysis of the structures of this site.

In addition to real-time monitoring described above, a research project should be carried out by a professional institution to study the seismic micro-locations of the site, through which its seismic parameters can be determined. The study should include the following investigations:

- **geotechnical surveys and investigations:** drilling at least three boreholes down to the depth of 30 meters, to determine local soil conditions and amplification of seismic waves; namely, the expected ground acceleration of seismic waves as an input parameter for analysis of the structures

- **geophysical surveys:** measurements at characteristic places of the site and structures, to define the seismic waves as a basis for: analysis of structures and buildings; definition of the seismic risk; and their vulnerability.

- Study of structural exemplars

The basis for structural conservation of monuments and archaeological sites is investigation and monitoring of the characteristics of materials and structural systems, as well as selection of appropriate materials and systems for structural repair. Ancient buildings at Stobi are characterized by a relatively small number of different masonry typologies (structural systems and construction materials) [see Appendix 3, section 1]. Therefore, it is proposed to select representative structures of different typologies and apply the entire conservation process to each one: from condition assessment, through specification of repair, to implementation. This would be useful not only for establishing conservation criteria of each building typology, but it would be beneficial for training initiatives.

APPENDIX 2: PROPOSED NEW STANDARDS & GUIDELINES

1. CONSERVATION DURING EXCAVATION

The policy of integrating conservation into the excavation process should be enhanced. In order to achieve this the following actions means are needed:

- **Plan** conservation measures and the excavations together
 - Immediately document the condition of newly-excavated building materials and their decorative features
- **Protect** by physical measures: temporary shelters, tents, etc.
- **Protect** by organizational measures: avoid hottest hours and periods; avoid partial excavations (as much as possible), in order to reduce the damage induced by the sudden change in environmental conditions
- **Prepare** materials and equipment on site that can be used for urgent interventions during the excavations
 - Ensure that the archaeologist is flanked by an archaeological conservator for the entire period of excavation
- **Plan** and implement provisional trench supports, protections and / or seasonal reburials between the excavation campaigns
 - Provide means of safe access to visit and monitor conditions within excavated sites (e.g. detect instability of walls and other structures, danger of collapse, etc.).

2. WALL CAPPING DESIGN AND MATERIALS

The main objective of capping is to avoid water penetration and the growth of vegetation in the core of the wall. At the same time capping can be a didactic form of presentation / interpretation of wall construction. Better forms of capping need to be designed and trialed, both for temporary (e.g. during excavation) and long-term protection:

- Temporary capping

- Define simple methods of protection
- See advice in Appendix 3, section 7.

- Long-term capping

- Study all existing wall capping designs across the site to identify their role in protection / deterioration of ancient walls and their aesthetic impact (positive or negative), to inform new design
- Define new capping designs and materials, and undertake trials
- See advice in Appendix 3, section 7.

3. SHELTER DESIGN PARAMETERS

New shelters are usually designed by architects, usually without experience in this building typology. As a result, their designs can be very problematic, creating additional environmental problems for ancient remains.

It is, therefore, important for the site management to produce guidelines for shelters and related interventions. A specific Project Brief should be carried out.

General guidelines can include the following actions, for example:

- The design should prioritize performance (e.g. protection), over aesthetic appearance
- The project should have a specialist team, headed by a Project Manager
- The specialist team should consist of specialists from NI Stobi and other specialists (architect and conservator, hydro-geologist, etc.), who create the design brief
- The architect engaged to design the shelter should follow the design brief as a matter of contractual obligation
- Relate shelter size and characteristics to respond to the causes of deterioration (especially water management / drainage issues as well as environmental changes)
- Relate shelter design to available resources both for its construction and for its long-term management and maintenance
- Consider the time span for which the shelter is needed (e.g. during the excavation, emergency/ short-term, long-term, etc.), seismic risk and locally available materials to ensure sustainability and maintenance of shelters
- Incorporate post-completion evaluation monitoring (see references in Appendix 4).

4. REBURIAL DESIGN PARAMETERS

Effective protection through reburial requires a designed stratigraphy (materials and configuration) for the intended duration (short-, medium-, long-term).

Numerous publications describe optimal methods and materials (see Appendix 5). These should be consulted to define a standard for reburial at Stobi. This should ensure:

- Water permeability all materials used in the reburial environment (and most importantly avoidance of impermeable separation membranes)
- Testing of materials before application
- Protection from erosion (e.g. peripheral drainage)
- Protection from vegetation and burrowing animals
- Monitoring of performance and maintenance

5. WATER MANAGEMENT

A strategy to manage natural and man-made water sources and systems will help guide new installations, by means of appropriate guidelines.

Random information has been collected in the past, along with some hydro-geological surveys. This needs to be complemented with an assessment of the entire site and added to a GIS platform. It should include:

- All known natural sources of water (exposed and subterranean)
- All known ancient and modern drainage systems
- Modern sources of water supply and distribution
- Known or suspected ancient hypogeal, from geophysical surveys
- Rain water ponding within ancient features
- Digital terrain modeling to understand surface water flow patterns, from topographical laser scans of the site
- Hydrological assessment of soils.

A general hydro-geological assessment of the site will help to define choices related to water management, drainage and other features, such as shelters.

APPENDIX 3: TECHNICAL ADVICE NOTES

The following are advisory notes for specific conservation applications at Stobi.

1. CLASSIFICATION OF MASONRY TYPOLOGIES

There are a variety of types of wall construction at Stobi. Their pattern of structural failure determines the types of repairs that are needed for each type of wall.

Wall typologies need to be: identified, formally characterized and labelled. This should be followed by a description of deterioration for each typology, risk to the structure, and appropriate methods of conservation. (Fig. 63)

2. INTEGRATED ASSESSMENTS OF SIGNIFICANCE, CONDITION AND RISK

The most effective means to prioritize interventions at Stobi is through integrated assessments of significance, condition and risk of individual buildings and their respective architectural features. One methodology developed for this purpose was at Bulla Regia, Tunisia. This consists of a numeric classification that enables the creation of priorities for conservation. The methodology can be applied to entire buildings as well as to individual architectural elements (Fig. 64).

To understand the type and potential magnitude of the risks to the site, they need to be understood in all contexts, including the complete inventory (on a layered GIS system) of:

- Monuments
- Structures
- Mobile elements
- Hypogea
- Other known, buried features
- Floor, wall, vault decorations by typologies (mosaics, frescos, opus sectili, stucco)

aArtifacts

- **A**rchival and historical documentation (drawings, photographs, excavation and conservation reports)
- **S**ervices (electricity, water)
- **W**ater management

aPublic access

- **S**ecurity measures (against theft and vandalism).⁹

The value assessments done for Herculaneum are also a potential model. For example, in each room of each building, archaeologists mapped their internal features (frescoes, special floors, furniture still present, etc.) and their significance. This was defined in a scale from 1-10, in consideration of its uniqueness within the site and in the Roman world. On the basis of this classification, each room has been given a total value, described with different colors. This is a very useful tool to prioritize interventions, especially when programming is done at a large scale and funds are limited (Figs. 65-66).

3. STABILISATION OF EXCAVATION TRENCHES

Between excavation seasons trenches and associated archaeological structures are at risk of collapse from rainwater and water runoff. Trenches can be easily stabilized during excavation, by protecting surfaces with geotextiles or dry masonry walls. The latter can be built with materials already present on site, such as fragmented tiles or loose stones.

Vegetation, possibly with vegetation mats (used for civil engineering) can also be applied to stabilize slopes, at little cost (see Appendix 4).

4. TRIALS OF ALTERNATIVE METHODS OF WINTER PROTECTION OF MOSAICS AND OTHER FEATURES

A research project to study covering mosaics in situ began in 1992. It experimented with many possible solutions.¹⁰

After twenty-five years the best material for temporary covering was found to be Gore-Tex™ fabric (being waterproof, breathable and UV resistant). The main problem is that it is very expensive (about €300 / m²). Other research sought a material with the same characteristics as Gore-Tex™, whilst being less expensive. Delta-Lite™, a material used for construction works (as waterproofing), has proven a satisfactory fabric after twelve years of trials. Delta-Lite™ has the same characteristics as Gore-Tex™, but only costs about €4 / m². It is easy to apply and to remove as a single sheet and it provides excellent protection to mosaic pavements. It is now used on many archaeological sites throughout Italy and other Mediterranean countries.

At Stobi, winter protection is placed over mosaics with waterproof and breathable fabric and loose sand. Its application is labor intensive, and sand is gradually contaminated by soil, leading to the growth of vegetation. Alternative methods of protection should be trialed, with monitoring the condition of mosaics (as with micro-photography of control areas). Sacks, bags, or duvets filled with appropriate materials are possible alternatives:

⁹ Roby, T. et al. 'Conservation planning for excavated mosaics at the site of Bulla Regia, Tunisia: A component of the MO-SAIKON initiative', *The Conservation and Presentation of Mosaics: At What Cost? Proceedings of the 12th Conference of the International Committee for the Conservation of Mosaics*, Sardinia, October 27–31, 2014 Edited by Jeanne Marie Teutonico, Leslie Friedman, Aicha Ben Abed, and Roberto Nardi, 2017, pp. 153-163.

http://www.getty.edu/conservation/publications_resources/books/conservation_presentation_mosaics.html

Priced publication: to order a photocopy, see ICCROM in Appendix 4

¹⁰ see R. Colombi, "Il progetto forum dell'ICCROM per la conservazione dei mosaici", in *AISCOM II*, Bordighera, 1995, pp. 223-228. To obtain a copy, see ICCROM in Appendix 5

Necessary characteristics and potential materials are as follows:

aSacks, bags, or duvets:

- Characteristics: waterproof, breathable, resistant to UV light and biodegradation, durable and reusable
- Materials: Delta-Lite™ or a comparable material (but not biodegradable hessian, or plastic sacks as used for food packing)

aFill materials:

- Characteristics: waterproof, breathable, resistant to biodegradation, durable
- Materials: salt-free sand, soil, vermiculite.

Other methods and materials should be considered to protect pools or basins that suffer rapid deterioration because of the stagnation of rainwater. Protection can be created over the winter, where such features are to be presented to the public, or for longer periods of time where they are not.

Here is an example of a temporary reburial with simple and swift methods done for a pool of a Roman Bath at the site of Sagalassos, Turkey (Fig. 67).

5. TRIALS OF LICHEN TREATMENT

Trials can identify appropriate treatments that can be used widely on stone structures and elements throughout the site. An expert lichenologist should be consulted for guidance.¹¹

Biocides can be trialed, but these are problematic: they are non-residual so have short term effect; and they contribute alien chemicals into ancient building materials.

Another more benign method worthy of investigation is light exclusion. Covering of lichen with a geotextile or possibly a Delta-Lite™ fabric deprives them of natural light required for their prorogation. This is evident on mosaics covered for winter protection at Stobi: lichen on the base of adjacent masonry, also covered, is clear of lichen. This should be trialed as a means of control. It could be done during the year as well, monitoring the time of covering, with photographic documentation of its effect.

6. SPECIFICATION OF LIME MORTARS

Mortars of non-hydraulic and natural hydraulic lime are most appropriate for the stabilization of ruins. Those based on modern Ordinary Portland cement are too strong and impermeable, trapping moisture within the wall, and contributing a wide range of problems to ancient masonry.

Non-hydraulic lime is made from pure limestone; natural hydraulic lime derives from limestone with clay impurities. Research into local geology will determine what materials are locally available (see Appendix 4). Local commercial production following correct traditional practice should be encouraged. Otherwise, lime materials can be sourced from neighboring countries.

Non-hydraulic lime putty is an ideal material. However, if only powdered lime is available, this can be improved by soaking in plastic bins, well covered to prevent air penetration, and left to convert to a thick putty for as long as possible.

In conditions of prolonged dampness or severe climatic exposure, natural hydraulic limes are needed. These are defined in European standards in EN459. If natural hydraulic lime cannot be sourced, a compromise is the use of 'gauged' mortars of non-hydraulic lime with Portland cement.

¹¹ Ornella Salvadori is an expert in this field in relation to stone deterioration:

https://www.researchgate.net/publication/301304508_The_Role_of_Fungi_and_Lichens_in_the_Biodeterioration_of_Stone_Monuments

White Portland cement may have fewer soluble salts than grey OPC cement, but it is stronger. To avoid problems associated with cement, its portions should be low:

- 1 : 3 : 12 (cement : lime : sand) for a weak hydraulic mix
- 1 : 2 : 9 (cement : lime : sand) for a strong hydraulic mix.

Higher proportions of cement should not be used.

In general, hydraulic lime mortar is needed for wall capping or areas subject to persistent dampness and severe climatic exposure, and for injection to stabilize wall cores. Non-hydraulic lime is appropriate for vertical pointing applications, except at the base of the wall that may be consistently damp.

Injection is only needed when structural problems are evident or whenever a support of a shelter is located on the existing walls; in this case, a proper structural investigation should be carried out (core-drilling and taking samples, chemical analysis, etc.).

Capping mortars can be done without previous analysis on the existing mortars. The design of pointing mortars can be informed by minimal analysis of ancient ones. These analyses can be easily done on site with basic equipment and training (see references Appendix 4). Results of analyses should be archived in a way that can be useful for improving knowledge of the site mortars. In this way comprehensive analysis (time and resource consuming) can be limited to the really necessary.

7. WALL CAPPING DESIGN

Capping of ancient walls should be carried out as a temporary or long-term protective measure. Long-term capping should effectively act as a sacrificial layer that can be renewed as needed.

Temporary capping

Temporary capping is useful to mitigate deterioration, pending further excavation, or awaiting completion of site interpretation. It can be achieved with simple materials available on site, such as: loose fragmented tiles or stones removed during excavation, alternated with compressed soil and geotextile. The latter can be secured with ropes fixed to stones at ground level.

Long-term capping

The design of the long-term capping should attempt to express the nature of core wall construction, in a way that blends with the ruinous aesthetic of the site. Most importantly, it needs the following performance characteristics:

-  slope downwards from the center to promote rainwater dispersal
-  high ratio of stone to mortar, to protect the mortar from erosion
-  Use of a hydraulic lime mortar, to withstand harsh winter conditions.

Wall heads should ideally be stabilized in the spring, to allow mortars to fully harden before the onset of hot summer and cold winter conditions. During application, mortars need very good protection from the elements (wind, sun and rain). If done in the autumn, winter protection will be needed, in the form of hessian 'duvets' filled with straw (to permit aeration), followed by old carpets, and then waterproof tarpaulins. These protective layers are held in place with ropes fixed to stone / brick on either side of the wall.¹²

8. ROUTINE MAINTENANCE AND MONITORING

Maintenance and monitoring have a symbiotic relationship, growing, evolving and maturing over time, if both are properly sustained.

¹² For a technical discussion of wall cappings, see: Ashurst, John. Conservation of ruins. Amsterdam & London: Elsevier/ Butterworth-Heinemann, 2007; Wall tops, pp. 93-108 Priced publication: to order a photocopy, see ICCROM in Appendix 5

Maintenance aims to preserve the significance of ancient features, by reducing loss of authentic form and materials, and reduce the cost and frequency of major conservation programs. It takes two forms:

- **planned maintenance:** performance of inspection and monitoring on a regular basis (daily, weekly, monthly, twice yearly, yearly, every five years)
- **reactive maintenance:** inspection and maintenance undertaken after storm events.

Regular planned maintenance tasks around the site estate, with monitoring requirements include:

- **Grounds and vegetation**
- **Drainage infrastructure**
- **Archaeological trenches**
- **Ancient structures and architectural fragments**
- **Shelters**
- **Modern storage buildings.**

The tables on Figs. 68-71 were developed for functioning buildings (from Conservation Basics. Practical Building Conservation, 2013). They can be applied to modern building infrastructure at Stobi and modified to deal with ruins on the site.

The objective of monitoring is to create a database of conditions that can be continuously updated. It also promotes a systematic and punctual understanding of each building / feature.

This allows periodical identification of conservation work needed for parts of each building that can be quantified by type and frequency. Therefore, it informs the design of routine maintenance.

The relationship between maintenance and monitoring means that the system can continuously evolve and develop. This helps to optimize working times, protection systems and travel times between the various buildings.

Examples of monitoring are:

- **The condition of the mosaics that are covered/uncovered every season**
- **Control of lichens**
- **Effectiveness of a new shelter.**

APPENDIX 4: TECHNICAL RESOURCES

A great deal of technical conservation advice is freely available on the internet. Below is a selective bibliography of English publications of relevance to Stobi, mainly from ICCROM and the Getty Conservation Institute. These can be used to create a technical reference library at Stobi for consultation by its staff, at little cost.

Conservation Theory

Conserving the authentic: essays in honour of Jukka Jokilehto

<https://www.iccrom.org/publication/conserving-authentic-essays-honour-jukka-jokilehto>

A History of Architectural Conservation

<https://www.iccrom.org/publication/history-architectural-conservation>

Values and Heritage Conservation

http://www.getty.edu/conservation/publications_resources/pdf_publications/values_heritage_research_report.html

Archaeological Sites Management & Conservation

Managing Cultural World Heritage

<https://www.iccrom.org/publication/managing-cultural-world-heritage>

Management guidelines for World Cultural Heritage sites

<https://www.iccrom.org/publication/management-guidelines-world-cultural-heritage-sites>

Conservation on archaeological excavations: with particular reference to the Mediterranean area

<https://www.iccrom.org/publication/conservation-archaeological-excavations-particular-reference-mediterranean-area>

Preventive measures during excavation and site protection: conference, Ghent, 6-8 November 1985

<https://www.iccrom.org/publication/preventive-measures-during-excavation-and-site-protection-conference-ghent-6-8-november>

Preserving Archaeological Remains

<https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/>

Management Planning for Archaeological Sites

http://www.getty.edu/conservation/publications_resources/books/mgmt_planning_arch_sites.html

Conservation and Management of Archaeological Sites Bibliography

http://www.getty.edu/conservation/publications_resources/pdf_publications/conserv_mngmnt_arch_sites_biblio.html

Conservation and Management of Archaeological Sites Bibliography

http://www.getty.edu/conservation/publications_resources/pdf_publications/conserv_mngmnt_arch_sites_biblio.html

Conservation Management Planning: Putting Theory into Practice, The Case of Joya de Cerén, El Salvador

http://www.getty.edu/conservation/publications_resources/pdf_publications/cons_mgt_planning.html

Conservation of Archaeological Sites in the Mediterranean Region

http://www.getty.edu/conservation/publications_resources/pdf_publications/conserv_sites_mediterranean.html

Protective Shelters for Archaeological Sites

http://www.getty.edu/conservation/our_projects/education/shelters/ProtectiveShelters_web.pdf

Architectural Conservation

Conservation of Cultural Heritage in the Arab Region: Issues in the Conservation & Management of Heritage Sites

<https://www.iccrom.org/publication/conservation-cultural-heritage-arab-region-issues-conservation-management-heritage>

Conservation of Architectural Heritage, Historic Structures and Materials

<https://www.iccrom.org/publication/conservation-architectural-heritage-historic-structures-and-materials>

Structural conservation of stone masonry: international technical conference, Athens, 31.X.-3.XI.1989

<https://www.iccrom.org/publication/structural-conservation-stone-masonry-international-technical-conference-athens-31x>

Humidity in monuments

<https://www.iccrom.org/publication/humidity-monuments>

A Laboratory Manual for Architectural Conservators

<https://www.iccrom.org/publication/laboratory-manual-architectural-conservators>

Lectures on Materials Science for Architectural Conservation

http://www.getty.edu/conservation/publications_resources/pdf_publications/materials_science_architectural_conserv.html

Conservation mortars

Repointing Brick and Stone Walls: Guidelines for Best Practice

<https://historicengland.org.uk/images-books/publications/repainting-brick-and-stone-walls/heag144-repainting-brick-and-stone-walls/>

TAN 01 - Preparation and Use of Lime Mortars

https://issuu.com/hspubs/docs/tan_01_preparation_and_use_of_lime_mortars/3

Mosaics Conservation

International Committee for the Conservation of Mosaics, conference proceedings

<https://iccm-mosaics.org/publications/>

Illustrated Glossary: Technician Training for the Maintenance of In Situ Mosaics

http://www.getty.edu/conservation/publications_resources/pdf_publications/glossaire.html

Mosaics in Situ: An Overview of Literature on Conservation of Mosaics in Situ

http://www.getty.edu/conservation/publications_resources/pdf_publications/lit_review.html

The Conservation of the Orpheus Mosaic at Paphos, Cyprus

http://www.getty.edu/conservation/publications_resources/pdf_publications/orpheus_mosaic.html

Technician Training for the Maintenance of In Situ Mosaics

http://www.getty.edu/conservation/publications_resources/pdf_publications/tech_training.html

Stone Conservation

ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns

https://www.icomos.org/publications/monuments_and_sites/15/pdf/Monuments_and_Sites_15_ISCS_Glossary_Stone.pdf

Biology in the conservation of works of art

<https://www.iccrom.org/publication/biology-conservation-works-art>

Sourcing Stone for Historic Building Repair

<https://historicengland.org.uk/images-books/publications/sourcing-stone-for-historic-building-repair/>

Plant Biology for Cultural Heritage: Biodeterioration and Conservation

http://www.getty.edu/conservation/publications_resources/books/plant_biology_cultural_heritage.html

TAN 10 - Biological Growths on Sandstone Buildings: Control and Treatment

<https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=e766f2df-ff8e-46c7-b4a8-a5ae0110a41f>

Stone Conservation: An Overview of Current Research, Second Edition (2010)

http://www.getty.edu/conservation/publications_resources/pdf_publications/stone_cons_2nd_edit.html

Stone Conservation: An Overview of Current Research (1996)

http://www.getty.edu/conservation/publications_resources/pdf_publications/stone_conservation.html

Stone Masonry Materials and Skills: A Methodology to Survey Sandstone Building Façades (2007) www.engineshed.scot/publications/publication/?publicationId=1ded2862-0599-44cb-81d4-a5c300a2bb9e

Wall Paintings Conservation

GRADOC: graphic documentation systems in mural painting conservation: research seminar, Rome, 16-20 November 1999

<https://www.iccrom.org/publication/gradoc-graphic-documentation-systems-mural-painting-conservation-research-seminar-rome>

Western medieval wall paintings: studies and conservation experience: Sighisoara, Romania, 31 August - 3 September 1995
<https://www.iccrom.org/publication/western-medieval-wall-paintings-studies-and-conservation-experience-sighisoara-romania>

Conservation of Wall Paintings
http://www.getty.edu/conservation/publications_resources/pdf_publications/conserv_wall_paintings.html

Risk Management

The ABC Method: a risk management approach to the preservation of cultural heritage
<https://www.iccrom.org/publication/abc-method-risk-management-approach-preservation-cultural-heritage>

Guide to Risk Management
<https://www.iccrom.org/publication/guide-risk-management>

Risk Preparedness: A Management Manual for World Cultural Heritage
<https://www.iccrom.org/publication/risk-preparedness-management-manual-world-cultural-heritage>

Fire Safety Management in Traditional Buildings Guide for Practitioners 7
<https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=7300097e-415f-4d27-a5fe-a5ad00ab8501>

Museum Collections Management
ICCROM RE-ORG artefact storage tools
<https://www.iccrom.org/themes/preventive-conservation/re-org/resources>

Teamwork for Preventive Conservation
<https://www.iccrom.org/publication/teamwork-preventive-conservation>

Standards in Preventive Conservation: Meanings and Applications
<https://www.iccrom.org/publication/standards-preventive-conservation-meanings-and-applications>

Recording, Documentation, and Information Management for the Conservation of Heritage Places: Illustrated Examples
http://www.getty.edu/conservation/publications_resources/pdf_publications/recordim_vol2.html

APPENDIX 5: ADDITIONAL BIBLIOGRAPHIC RESOURCES

AATA Online is a comprehensive database of almost 150,000 abstracts of conservation literature (in English): <http://aata.getty.edu/Home>

BCIN is a bibliographic conservation database of almost 200,000 references, most with abstracts in French and English: <http://www.bcin.ca>

ICCROM (International Centre for Restoration and Preservation of Cultural Property, Rome) contains one of the most important conservation libraries in the world, and its catalogue is available on-line: <https://www.iccrom.org/resources/library-services>.

Photocopies can be requested from the ICCROM Library document delivery service:

- Costs € 0.15 per A4 page + shipping
- Only up to 10-15% of the whole books or one article from
- Send requests to: docdelivery@iccrom.org

FIGURES
FOR CHAPTER
4

Year	Month	Day	M _L	I ₀	Epicentral area	Observed and reported Effects
Earthquakes before 1900						
-300	-	-	6.05	IX	Valandovo (MK)	
400	-	-	6.05	IX	Gradsko (MK)	
518	-	-	6.05	IX	Skopje (MK)	
527	-	-	6.05	IX	Ohrid (MK)	
896	09	04	6.05	IX	Pehčevo (MK)	
1456	06	16	6.05	IX	Prizren (XK)	
1555	-	-	6.05	IX	Skopje (MK)	
1641	-	-	5.57	IX	Kyustendil (BG)	
1896	02	11	6.33	IX	Korçë (AL)	
Earthquakes after 1900						
1902	07	05	6.50	IX	Assiros (GR)	Destruction, human loss and injury, ground cracking
1904	04	04	6.70	IX	Kresna (BG)	Massive destructions and surface dislocations
1904	04	04	7.50	X		
1905	10	08	6.10	VIII	Kresna (BG)	---
1906	09	28	6.00	VIII	South of Lake Ohrid (AL)	---
1911	02	18	6.70	IX	South of Lake Ohrid (AL)	Heavy destruction, human loss and injury
1912	02	13	6.00	VIII	South of Lake Ohrid (AL)	---
1921	08	10	6.10	IX	Vitina (XK)	---
1931	03	07	6.00	VIII	Valandovo (MK)	Heavy destruction, human loss and injury, ground settlement
1931	03	08	6.70	X		
1942	08	27	6.00	IX	Peshkopi (AL)	---
1960	05	26	6.40	IX-X	Korçë (AL)	Serious damage, loss of life and injury
1963	07	26	6.10	IX	Skopje (MK)	Heavy destruction, human loss and injury, ground fissures
1967	11	30	6.50	IX	Debar (MK)	Destruction, human loss and injury, surface faulting
1978	06	20	6.50	VIII+	Thessaloniki (GR)	Extensive damage, loss of life and injury

AL-Albania, BG-Bulgaria, GR-Greece, MK-Macedonia, XK-UN protectorate Kosovo

Table 1. List of significant earthquakes affecting the territory of Republic of North Macedonia and vicinity (Source: Macedonian earthquake catalogue presented in Cejkovska et al., 2016)

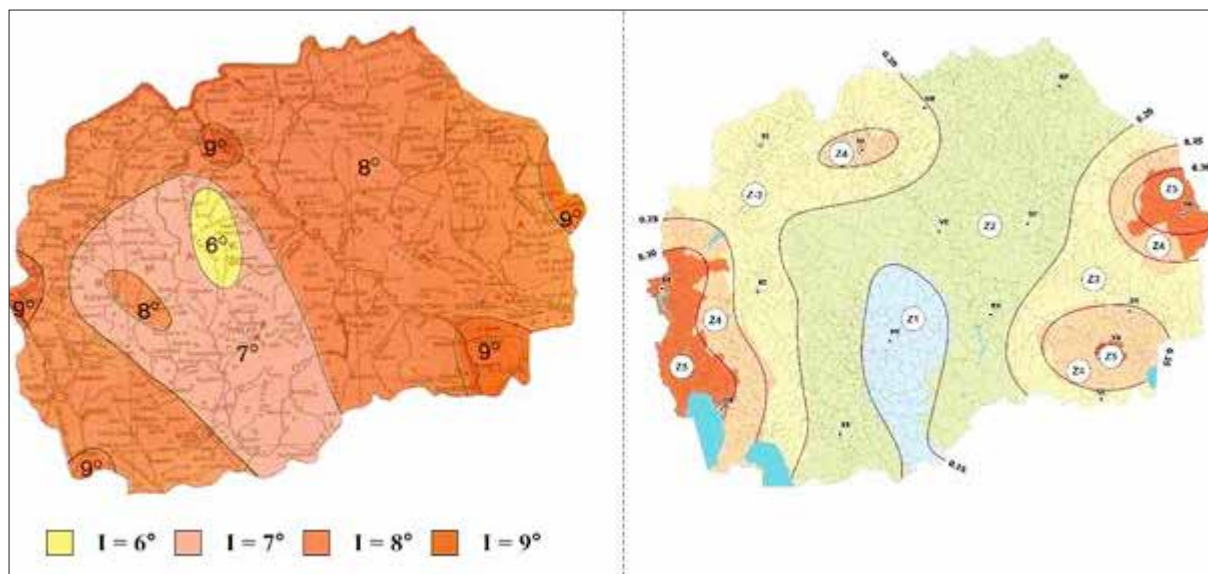


Fig. 34. Seismic Zoning Maps of the Republic of North Macedonia
a. Official RP500 Seismic Zoning Map of Macedonia (Seismological Association of SFR Yugoslavia, 1987) b. RP475 Seismic Zoning Map of Macedonia, Ground -type , Vs≥800 m/s (Milutinović et al., 2016)
Adopted for National Annex to MKS EN 1998-1:2012 Eurocode 8

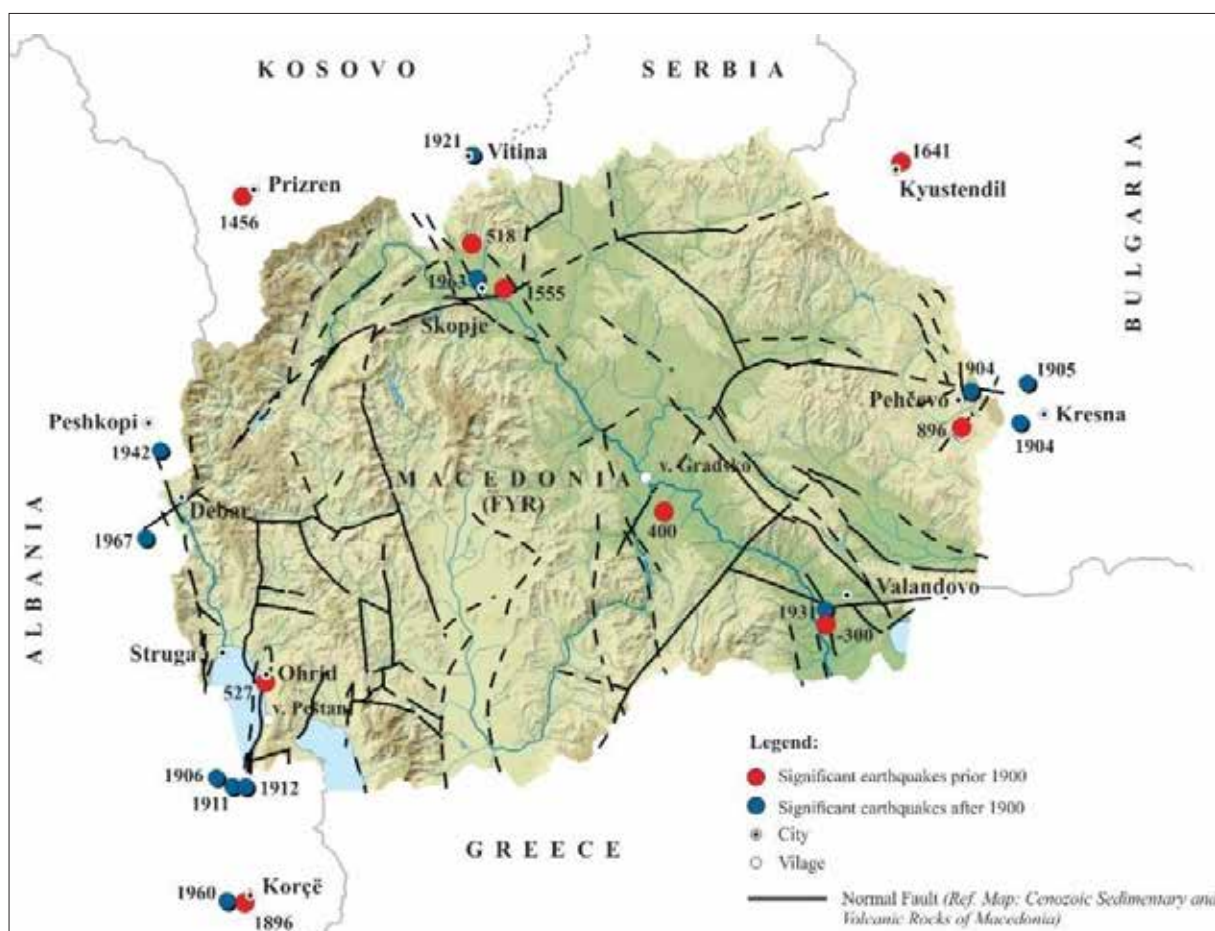


Fig. 35. Location of significant earthquakes in Macedonia and its vicinity (Compiled by Salic, R.)

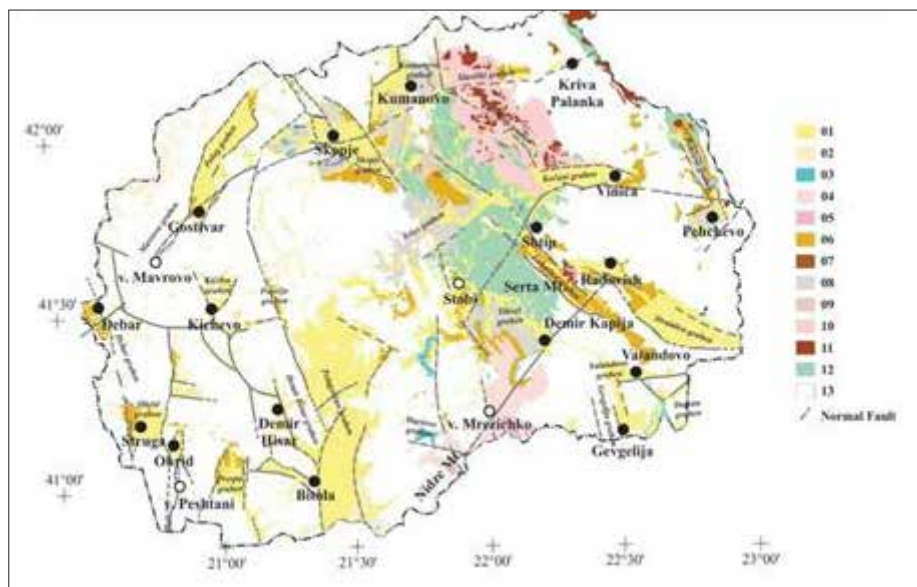


Fig. 36. Map of neotectonic grabens and main active seismic faults in Macedonia
(Source: Dumurdjanov et al., 2004, reprocessed in color)

Quaternary: 1-alluvial, proluvial and limnic sediments, 2-glacial sediments, 3-travertine deposits;
Pliocen-Quaternars: 4-agglomerates, tuff, sandstones, travertine; Pliocene: 5-volcanic rocks (quartz latite, latite etc.); 6-continental sediments (gravel, sand, silt); Miocene-Pliocene: 7-calcalkaline basalt;
Miocene: 8-Late Miocene freshwater sediments, 9-Middle Miocene freshwater sediments; Oligocene-Miocene: 10-pyroclastic rocks (breccias, tuff etc.), 11-volcanic rocks (andesite, latite, quartzlatite, dacite etc.); Late Eocene-Oligocene: 12-flysch-like and flysch sediments; 13-Pre-Eocene complex rocks;
Structural symbols: normal faults

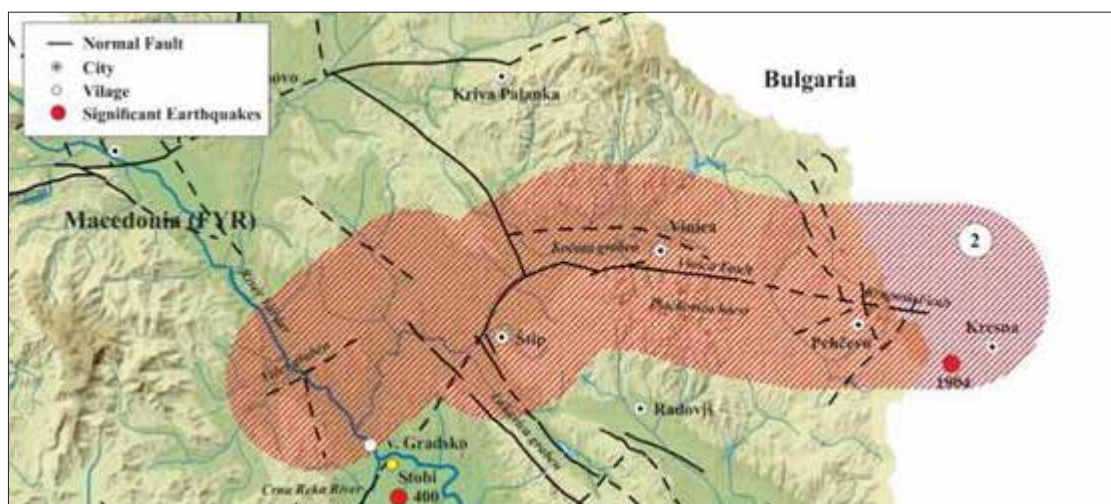


Fig. 37. Kresna-Pehchevo-Vinica-Shtip-Gradsko Seismotectonic Zone (Zone 2)



Fig. 38-39. Risk from flooding: collapse of the bank of Crna River adjacent to Depot 5, 2014



Fig. 39



Fig. 40. Risk from flooding: rising of the subterranean waters and flooding in the Building with Arches, 2010



Fig. 41-42. Risks from atmospheric influences: degradation and salts on the discovered buildings caused by atmospheric water



Fig. 42

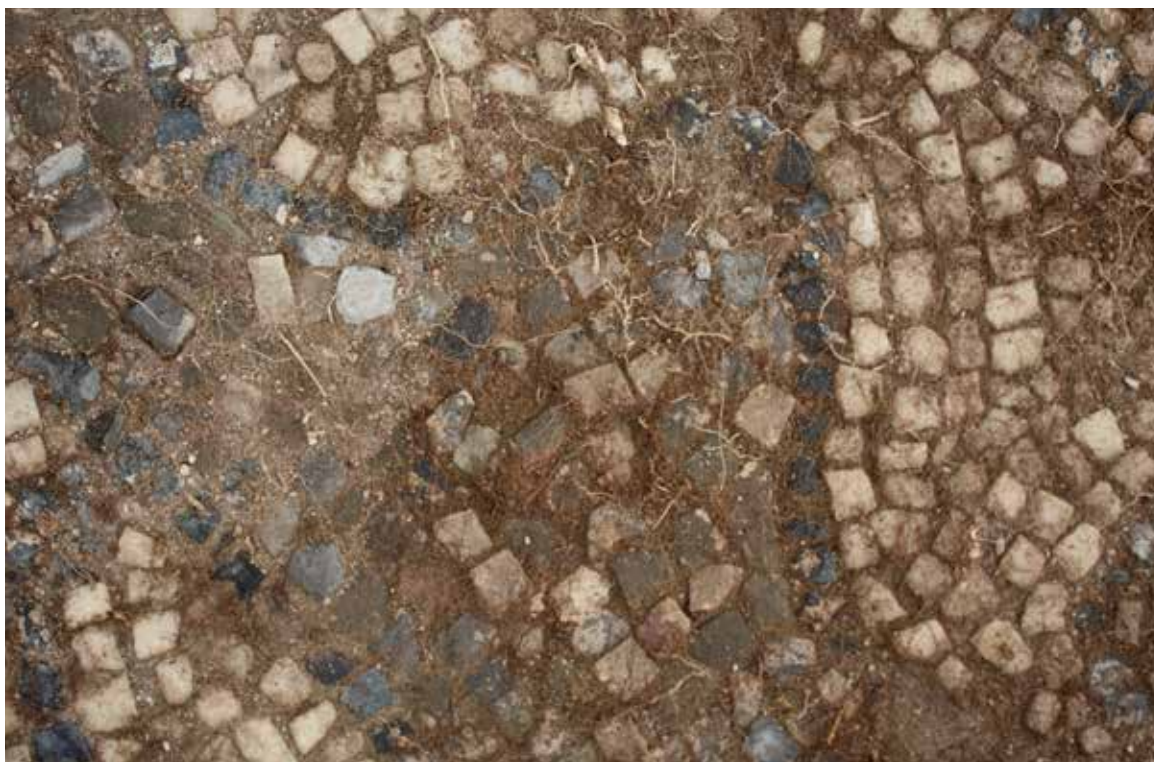


Fig. 43-48. Risks from atmospheric influences: degradation of the discovered buildings caused by vegetation and moisture (grass, lichen, moss)



Fig. 44



Fig. 45



Fig. 46



Fig. 47



Fig. 48



Fig. 49. Risks from atmospheric influences: degradation of the discovered buildings caused by rainwater



Fig. 50-51. Risks from atmospheric influences: poor quality building material – soft sandstone



Fig. 51



Fig. 52-53. Risk from air pollution: black surface on marble blocks at the Theatre caused by exhaust gases of the vehicles on the highway



Fig. 53



Fig. 54. Human hazards: an example of degradation of ancient features due to lack of maintenance



Fig. 55-58. Human hazards: examples of degradation due to lack of conservation activities



Fig. 56



Fig. 57



Fig. 58



Fig. 59-62. Human hazards: examples of degradation due conservation activities made with inappropriate materials or lack of skills shortage and training



Fig. 60



Fig. 61



Fig. 62

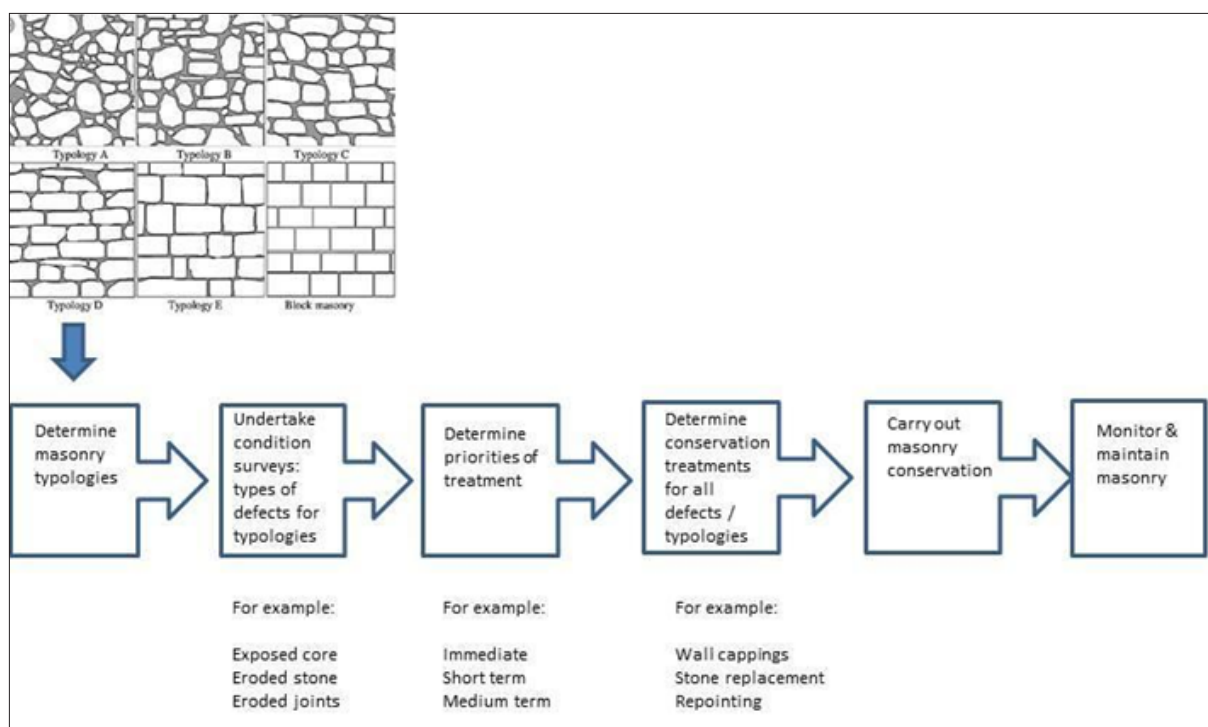


Fig. 63. Classification of masonry typologies

Table 2 Rapid Survey Form, page 2																	
Rapid Survey Form Mosaic Conservation Planning for Archaeological Sites									Site:					Date:			Part 2
									Building:					Recorded by:			
	Condition		Significance						Exposure					Priority		Notes	
Evaluation Scale	1-5		1-5	1-5	1-5	1-5	1-5		1-5	1-5	1-5	1-5		6-150	0-100		
Weighting		4						2					1				
Mosaic ID	Overall condition rating	Weighted overall condition	Archaeological-iconographic value	Technical-artistic value	Integrity	Authenticity	Overall significance rating	Weighted overall significance	Environment	Visitation	Structural collapse	Overall exposure rating	Weighted overall exposure	Synthesis weighted ratings	Overall priority rating		

Fig. 64. An example of Rapid Survey Form. Note: 'Exposure' is equivalent to risk



Fig. 65. An example of archaeological significance [values] assessment, transferred on a geographic map of the site: color variation indicates grades of significance at the archaeological site of Herculaneum (from The Herculaneum Conservation Project, Italy)



Fig. 66. The archaeological significance assessment has been used here to prioritize the interventions in shelters at Herculaneum



Fig. 67. Seasonal protection of a pool at the Roman Baths at Sagalassos (Turkey). To reduce the intensive labor needed for seasonal protection, the pool has been covered with: a) layer of geotextile, b) plastic foil, c) layer of dry sand (about 5 cm), d) empty plastic boxes, e) plastic foil, f) layer of dry sand (about 5 cm), g) final layer of pumice (about 5 cm)

MAINTENANCE CHECKLIST		
ELEMENT	MAINTENANCE TASK	COMMENTS
TWICE YEARLY		
CHIMNEYS & FLUES	Engage a specialist to sweep chimneys where fireplaces or stoves are in use Check condition of parging or flue liner Clean tar and debris from spark arrestors, where fitted	Depending on the frequency of use and type of fuel burned, chimneys may need sweeping less or more frequently Spark arresters can become clogged with tar and debris, and this might increase the fire risk for thatched roofs
ROOFS RAINWATER GOODS: VALLEYS GUTTERS HOPPERS RAINWATER PIPES	Engage a contractor to clear roofs and rainwater goods of leaves and debris, and ensure overflows are clear; rod if necessary Check: • that guards and wire balloons are in place • falls and ensure that water is not pooling • support brackets Adjust gutter brackets to ensure appropriate fall Inspect rainwater goods for cracks and leaks Repair or replace cracked or damaged sections with matching items; if this cannot be done immediately, consider a temporary repair using plastic sections and plan for permanent repairs to be carried out within an appropriate timescale Check that water is discharging correctly into drains and gullies	Regular clearance of gutter and hoppers will reduce the risk of downpipe blockages Blockages in downpipes will result in overflow higher up the pipe When replacing downpipes the joints should not be sealed When re-fixing rainwater pipes, consider using spacers to set the pipes away from the wall; this will enable the back to be painted and reduce the rate of corrosion
DRAINS SURFACE WATER DRAINAGE GULLIES BELOW-GROUND DRAINS	Engage a contractor to open up inspection chambers Check that all gullies and gratings are free from silt and debris, and that water discharges freely to an appropriate drain or soakaway Use drain rods or high-pressure water jetting to clear blockages Consider cutting back or removing trees and shrubs growing close to the line of a drain	Inspect gullies during heavy rainfall to see whether they back up; this might indicate blockages Most instances of 'rising damp' in walls are attributable to defective drainage
VENTILATION GRILLES & AIR BRICKS	Ensure that ventilation grilles, air bricks, louvers etc. are free from obstruction	
DOORS & WINDOWS	Check operation of opening parts Ensure that locks and security devices are operating properly Lubricate hinges, bolts and locks as required	
FIRE ALARM & AUTOMATIC FIRE DETECTION SYSTEMS	Engage a qualified alarm engineer to inspect and test fire alarm and detection systems, and to maintain them	

Fig. 68 a-c. Some examples of planned maintenance in archaeological sites that can be partially replicated at Stobi. From: Conservation Basics, Practical Building Conservation series, Historic England, 2013.

TYPICAL MAINTENANCE CHECKLIST: OCCASIONAL, REGULAR & CYCLICAL MAINTENANCE TASKS		
Checklists provide a systematic and consistent basis for gathering information and ensuring that essential maintenance tasks are not forgotten. They also allow the condition of building elements to be monitored over time, and faults to be quickly identified.		
MAINTENANCE CHECKLIST		
ELEMENT	MAINTENANCE TASK	COMMENTS
AFTER STORM WEATHER		
ROOF AREAS & RAINWATER GOODS GENERALLY	Inspect roof coverings and flashings from ground level, and accessible high points; engage a contractor to remedy any loss or damage	
CHIMNEYS	Inspect from the ground and accessible high points; engage a contractor to repair any damage	Where structural problems are suspected, obtain professional advice from a conservation structural engineer on monitoring, investigation and repair
EXTERNAL WALLS GENERALLY	Inspect from ground level, and arrange for any damage and signs of movement to be investigated and made good	
SURFACE WATER DRAINAGE CHANNELS & GULLIES	Inspect and note if ineffective or blocked; clear channels of vegetation and debris; arrange for blocked gullies and drains to be cleared	
INTERNAL SPACES GENERALLY	Inspect roof void and internal spaces, particularly below gutters; arrange for evidence of water penetration to be investigated and remedied	
DAILY		
FIRE PRECAUTIONS	Check that: • fire escape routes are unobstructed and that fire doors operate correctly • combustible materials and rubbish are stored in a safe area • the building is secure from unauthorised entry • no faults are indicated on fire alarm system	
WEEKLY		
FIRE ALARM & AUTOMATIC FIRE DETECTION SYSTEMS	Make operational test; engage a qualified specialist contractor to remedy any defects found	Batteries should be replaced in single-station smoke alarms, if required
FIRE EXTINGUISHER SYSTEMS	Make visual inspection; engage a qualified specialist contractor to remedy any defects found	
MONTHLY		
SURFACE WATER DRAINAGE CHANNELS & GULLIES	Clear channels of vegetation and debris	From May to November
EMERGENCY LIGHTING	Make operational test; engage a qualified specialist contractor to remedy any defects found	

Fig. 68b

MAINTENANCE CHECKLIST		
ELEMENT	MAINTENANCE TASK	COMMENTS
YEARLY: EXTERNAL FABRIC		
CHIMNEYS	Engage a contractor to inspect chimney pots, flaunchings and chimney stacks for defects Carry out localised repointing and repairs: replace broken pots Consider installing ventilated caps in pots on disused chimneys to prevent rain penetration	If the chimney stack is cracked or leaning significantly, obtain professional advice from a conservation architect or a building surveyor
OVERLAPPING COVERINGS TO PITCHED ROOFS VERTICAL CLADDING	Engage a contractor to inspect for missing, displaced, defective slates and tiles or shingles; insert matching replacements Note heavy accumulations of moss	Roofing maintenance tasks should ideally be carried out concurrently with late spring roof clearance (described above) Moss holds moisture; for clay and stone tiles it may increase the risk of frost damage; obtain professional advice from a conservation architect or building surveyor about removal
RIDGE & HIP TILES	Engage a contractor to inspect bedding and jointing of ridge and hip tiles, and make good defects Re-bed and repoint as required	
THATCHED ROOFS	Engage a thatcher to inspect for defects such as: holes, grooves of decay, thinness, heavy accumulations of moss, bird damage etc. Carry out patch repairs as necessary using appropriate materials	Consider bird netting if damage is a persistent problem Obtain professional advice from a conservation architect, building surveyor or thatcher concerning moss removal Assess the adequacy of the fire-prevention measures
SHEET METAL ROOFS & CLADDING	Engage a contractor to inspect condition of panels, joints and clips Make temporary repairs to cracks and splits where permanent repairs cannot be carried out immediately Plan for permanent repairs within an appropriate timescale	Theft of lead has become an increasing problem in recent years: lead roofs should be checked regularly, particularly on unoccupied buildings Consider installing security devices
ASPHALT ROOFS	Engage a contractor to inspect condition of flat areas and upstands; look for evidence of ponding and blistering Where permanent repairs are not to be carried out immediately, make temporary repairs to splits and holes Plan for permanent repairs within an appropriate timescale	Bumps and blisters require immediate attention only where there is evidence that water penetration is occurring
LEAD WEATHERINGS & FLASHINGS	Inspect condition of lead flashings and weatherings: make minor repairs, for example, refoing and redressing dislodged or displaced sections, and replace missing or damaged sections Make temporary repairs using adhesive flashing material where permanent repairs are not to be carried out immediately; plan for permanent repairs to be carried out within an appropriate timescale Make good any defective mortar fillets	Splitting of lead flashings may indicate they are oversized or over-fixed; obtain professional advice before renewing to the same specification
VALLEY & PARAPET GUTTERS	Engage a contractor to inspect condition Make temporary repairs using adhesive flashing where permanent repairs are not to be carried out immediately; plan for permanent repairs within an appropriate timescale	Consider installing permanent safe access aids to allow regular inspection of hidden valley and parapet gutters Lead valleys on thatched roofs are particularly liable to become choked with debris Splitting of lead gutter bays may indicate that they are oversized; obtain professional advice from a conservation architect, building surveyor or accredited leadwork contractor, before renewing to same specification

Fig. 68c

FASI DI INTERVENTO:

	PROCEDURA GENERALE	IMMAGINI INTERVENTO
Pulizia della superficie muraria e diserbo	Rimuovere sporco e terriccio con spazzole; procedere all'eliminazione delle erbacce mediante taglio con forbici e trattamento con prodotto diserbante, da condursi mediante iniezioni nei canali conduttori della pianta o irrorazione tramite irroratore a stantuffo o impacchi.	
Revisione giunti di malta	Verificare la consistenza e procedere ad una ristilatura dei giunti là dove la malta appaia disgregata e pulverulenta, utilizzando grassello di calce filtrato ed invecchiato 6 mesi e calce idraulica naturale NHL5.	
Trattamento protettivo e consolidante	Pulire la superficie da trattare, eliminando sporco, oli e grassi. Distribuire il prodotto a pennello, rullo o spruzzo, fino a completo assorbimento. In base alla porosità della superficie, eseguire il trattamento dopo 6 ore. Su superfici verticali distribuire il prodotto dal basso verso l'alto, in fasce da 15-20cm. Eliminare i residui di prodotto con un panno.	

Fig. 69. An example of a page of technical guidance for maintenance on ancient walls at the site of Herculaneum, Italy: the steps of cleaning, repointing and protecting the wall facing are described with simple text and pictures

Trattamento diserbante e protettivo	Procedere all'impregnazione con prodotto diserbante mediante iniezioni nei canali conduttori della pianta o irrorazione tramite irroratore a stantuffo o impacchi.	
Riadesione coppi/embrici	Verificare la tenuta degli elementi in terracotta e procedere al fissaggio puntuale delle tegole/coppi che dovessero risultare instabili, con malta di calce idraulica naturale e grassello invecchiato 6 mesi, il tutto per evitare lo scivolamento degli elementi.	
Sostituzione elementi in terracotta	Procedere alla sostituzione di quegli elementi che dovessero risultare rotti e danneggiati, causando così ulteriori sconnessioni del manto di copertura con conseguenti infiltrazioni di acqua, utilizzando malta di calce idraulica naturale e grassello invecchiato 6 mesi.	

Fig. 70 a-b. A similar page for maintenance of shelters provides guidance on removal of vegetation, applying herbicides, substituting broken/cracked elements, verifying the integrity of the structure

Risigillatura attacco tegole-muratura	Procedere alla verifica dell'attacco tra tegole e muratura, là dove il tetto risulti ancorato ad una parete muraria, ed effettuare le opportune sigillature con malta di calce idraulica naturale e grassello invecchiato 6 mesi, in caso di distacchi degli elementi in terracotta, per evitare l'innestarsi di piante infestanti.	
Pulizia/verifica di pluviali e canali di gronda	Pulire la gronda ed il pluviale con acqua non in pressione. Procedere alla disostruzione se necessario. Revisionare gli agganci della gronda alla falda e del pluviale alla muratura e verificare l'integrità dei vari componenti in rame. Se necessario, procedere alla loro sostituzione.	

Fig. 70b

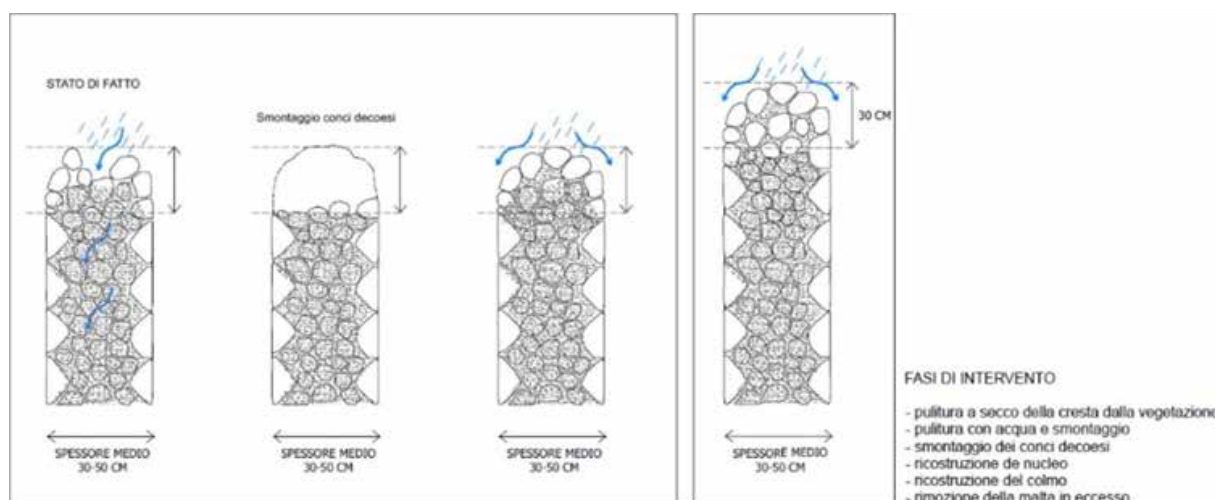


Fig. 71. An example of the maintenance of a modern mortar wall capping (sacrificial layer), to be revised every 5-10 years



VISITOR MANAGEMENT, INTERPRETATION & PRESENTATION

This section describes current visitor management, presentation and interpretation at NI Stobi, with recommendations for future improvements.

5.1. CURRENT VISITOR MANAGEMENT, PRESENTATION & INTERPRETATION

THE SITE PROMOTION

NI Stobi website

The official website of NI Stobi (<http://www.stobi.mk>) released in 2010, in Macedonian and English, is strong in structure and content. It uses conventional and modern technologies in good balance. The website offers the best pre-visit information for Stobi as an archaeological site, far superior to any within a published guidebook (see below). However, some of its content is not current (e.g. excavation & conservation), the 'museum' pages lack descriptive content and the website remains mainly specialist friendly since most of its articles present the information in either encyclopedic or reporting manner. In August 2020 the Google page rank of the site was 3 of 10. The cPR is as low as 3.00 of 10 and the PR quality is LOW¹.

Published guidebooks

The Republic of North Macedonia is not well promoted in mainstream guidebooks. The most comprehensive guide for the country is Macedonia. 5th Bradt Travel Guide (2015)², but features less than two pages on Stobi. The R. of North Macedonia's official tourism website³ does little to promote the current status and attractiveness of the country's largest archaeological site either. The information there about the "new discoveries" at Stobi dates back to 2010. However, their online travel guide: A Guide to the Famous Products, Places, Landmarks and Events in Macedonia⁴ published in 14 languages features Stobi twice as an archaeological site and as a venue of the Ancient Drama Festival. It is worth mentioning that the archaeological and conservation field schools running over a decade at Stobi are not mentioned in any of these publications. In 2016 a new Guidebook Macedonia was published in English. The guide book contains basic information for Stobi and it is available for purchase on: <https://kupikniga.mk/product/guide-book-macedonia/?lang=en>.

1 <https://checkpagerank.net/check-page-rank.php>

2 Macedonia.Thammy Evans, Bradt, 5th edition, 2015, 382 pages

3 <https://macedonia-timeless.com/eng>

4 https://macedonia-timeless.com/eng/things_to_do/publications/events_guideinmacedonia/

Lonely Planet⁵ and National Geographic⁶ do not have printed books on North Macedonia but only short online travel guides. None of them feature Stobi.

SOCIAL MEDIA

TripAdvisor

There are two pages on this website for Stobi that can create a potential confusion: Stobi, Skopje⁷ and Stobi, Palikura⁸ both include 74 reviews (combined), with average excellent rating (4.5 of 5) over about 8 years. The vast majority of comments relate to the ancient remains on the site, with very few about its visitor infrastructure. The experience in this respect was neutral or not memorable.

Facebook, Instagram, YouTube

NI Stobi has had an active and regularly updated account on IG since 2018 with 997 followers and two pages on FB⁹: @Stobimuni has 2724 followers and 830 check-ins, @Stobaeus has 3936 followers and 18 check-ins. The latter is the currently official Facebook page of Stobi and the followers of the first one were invited in July 2020 to migrate to the official one. The Facebook pages are regularly updated with very diverse, well-presented and strong engaging content. Most of the posts on Stobi FB pages and IG are bilingual (in Macedonian and English).

The YouTube channel of Stobi has 4 uploaded videos and 23 subscribers.

Since 2019 NI Stobi has employed a marketing officer whose task is to improve the communication of Stobi and promote the work of the National Institution to local and global audiences based on ongoing analysis of the efficiency and impact of the used communication tools.

Local and international media

Since the establishment of the NI Stobi in 2008 the ongoing projects and events are regularly presented in the local media, printed and online.

Wikipedia

The article on Stobi on Wikipedia¹⁰ is available in 22 languages. The articles in Macedonian and English contain most of the information and photos available on Wikipedia. The articles translated into the languages of the neighboring countries are short and fail to present the value of Stobi as an archeological site and tourist attraction. There is no article dedicated to the National Institution.

Balkan Heritage Field School and Institute for Field Research

Since 2010, archaeological and conservation field schools have taken place at Stobi due to the collaboration with Balkan Heritage Foundation, Bulgaria under the Balkan Heritage Field School¹¹ brand. In 2015 the field school collaboration involved the US organization Institute for Field Research.¹² The websites and social media of both organizations present all the field schools at Stobi including abundant information and are well promoted on a global scale reaching tens of thousands on an annual basis.

5 <https://www.lonelyplanet.com/macedonia>

6 <https://www.nationalgeographic.com/travel/destinations/europe/macedonia/top-10-things-to-do-in-macedonia/>

7 https://www.tripadvisor.com/Attraction_Review-g295110-d10244205-Reviews-Stobi-Skopje_Skopje_Region.html

8 https://www.tripadvisor.com/Attraction_Review-g2266101-d2236499-Reviews-Stobi-Palikura_Vardar_Region.html

9 <https://www.facebook.com/Stobaeus/> and <https://www.facebook.com/STOBIMUNI/>

10 <https://en.wikipedia.org/wiki/Stobi>

11 www.bhfieldschool.org

12 www.ifrglobal.org

5.2. VISITOR MANAGEMENT AND INFRASTRUCTURE

a

Visitor statistics

In 2019 there were 1,184,963 tourists to North Macedonia of which 757,593 were foreign visitors,¹³ and 17,925 of whom visited Stobi. Recent records of visitors to the site are as follows (April – October):

Year	Total visitors	Total foreign visitors
2019	17925	9750
2018	17315	10806
2017	13948	7243
2016	13200	6291
2015	13811	6933

The average visit time is one hour.

The current admission fee is €2 for adults, €0.80 c for children. School groups also pay per child.

Many visitors arrive without strategic planning, passing along the adjacent motorway following the European Corridor 10. School excursions are organized by a tour agency. Informal recording of visitors' profiles is carried out by a salesperson at the ticket office. A new ticketing system was recently introduced, but it does not include statistical software as previously envisaged.

Organized group day excursions from Skopje commonly feature Ohrid, but rarely include Stobi. There is no motorway linking Ohrid and Stobi, limiting tourism connectivity with North Macedonia's tourist hotspot. However, some tours around the country do include Stobi in their itineraries, as evidenced by groups of foreign visitors. Four itineraries are offered on the TripAdvisor website.¹⁴

Visitor access and circulation

On site there are simple, discreet wooden signs providing directions to principal buildings. All buildings are delineated by simple barriers, consisting of chains on dark metal supports. These are visually light, unobtrusive and sensitive in design. Interior access is possible in a small number of buildings, through gaps in the chain barriers. A few buildings have wooden viewing platforms, with wooden balustrades. These are not sufficiently enclosed and pose a severe risk of falling from a significant height (Building with Arches, Episcopal Basilica). The structural foundation of the platform at the Episcopal Basilica appears insufficient for public safety.

The site is generally not convenient for visitors with motor disabilities: there is only a limited number of pathways suitable for wheelchairs and they do not provide access to the majority of Stobi's sights.

Visitor control

At present, seven guards are permanently employed to monitor the site and prevent visitor access into restricted areas. Signs warn of danger within some areas. However, given the size of the site, these are insufficient and independent visitors can easily trespass beyond the barriers. This poses a risk to unstable ancient features as well as to the safety of trespassing visitors.

13 <https://www.stat.gov.mk/PrethodniSooptstenijaOblast.aspx?id=69&rbrObl=25>, <https://eprints.ugd.edu.mk/24053/1/Finalna%20Studija%20Turizam%20i%20ugostitelstvo%20Covid19%20MK.pdf>

14 https://www.tripadvisor.com/Tourism-g295109-Republic_of_North_Macedonia-Vacations.html

Visitor infrastructure

The entrance to the site has a kiosk for the sale of tickets and a good range of affordable souvenirs, mainly replicas of ancient terracotta oil lamps and figurines and a refreshment facility. Toilet facilities are at the main entrance.

In the past, there was a cafeteria at the entrance in the southeast corner of the site. Its construction was financed by UNDP (United Nations Development Programme). However, it was built on unstable ground, so had to be demolished.

On site, there are no seats for rest, nor trees / shelters offering shade. In the hot summer season, this probably deters individual visitors from visiting more distant parts of the site furthest away from the entrance.

Stobi has bilingual (in Macedonian and English) signage but lacks braille or any other tactile writing.

Comments on TripAdvisor include nothing memorable about visitor infrastructure at Stobi, so this was not an important part of their experience. A few noted the lack of places to rest, under shade, in the exhausting summer heat.

5.3. PRESENTATION AND INTERPRETATION

General description

Stobi is a site of medium size and most of the exposed monuments are in western / southern clusters. A comprehensive understanding of all monuments, with their interpretative panels, can be achieved comfortably in two hours. Exclusion of visitor access into most structures also defines the time of a visit. The wide visitor routes, gentle slopes and natural beauty of the site offer a very pleasant experience in good, temperate weather.

Guides

Admission includes a guided tour for all visitors, available only in the high season (April to October). It is 1 ½ hrs in duration.

The site map

Upon entry, visitors receive a site map and brief description of the site (A4 3-fold format). It is basic and presents a general itinerary for sightseeing. There is no optional itinerary for visitors on wheelchairs due to the lack of suitable infrastructure.

The audio guide

An individual guided tour in Macedonian and English is available for download via a free mobile app for both Android and iOS. It is approximately one hour in duration. It contains a map, a navigation guide and audio information about Stobi and its monuments.

Official guidebooks

There is no official guidebook for sale at the site. The guidebooks *Stobi, the Ancient City* (J. Wiseman,) and *Municipium Stobensium* (Elenora Petrova Mitevska, 2001) are out of print. The recently published brochure *Municipium Stobensium* (Elenora Petrova Mitevska, 2018), by DPCH with a brief history and description of principal buildings is not on sale at the site. In addition, there are two brochures: *Conservation of the Baptistery in the Episcopal Basilica in Stobi* (2018, 30 pages), featuring this important conservation project mainly through images and *Ancient Mosaics at Stobi* (2019).

Site Interpretation

All principal buildings have interpretative panels made of aluminum and plexiglass at strategic locations. These include a building plan and brief description in Macedonian and English. They are 11 years old. Many have weathered poorly and they are due to be replaced.

The site museum

There is currently no onsite museum. The former museum was located in the smaller room of the so-called "Old Train Station" near the old entrance to the site, in its northeast sector. This was in a historic stone building, built to serve the Arlberg Express railway, a branch line of the Orient Express from Paris to Athens (1930-9; 1945-62). The museum was closed in 2009 and is currently in a very dilapidated condition. Currently there is no exhibition of artifacts from Stobi and the ways for visitors to understand and appreciate the importance of the site are limited. There is a project for reconstruction of the building and its conversion into a Visitors Center which would include a small museum exhibition, a lapidarium, a conference room for educational purposes, places for rest under shade and a coffee shop.

Educational facilities

There are no education facilities for gatherings of school children or other groups. Field schools taking place at Stobi use the Stobi lab facilities (Depot 1) for teaching and workshops.

5.4. RECOMMENDATIONS

5.4.1. DEVELOP A VISITOR MANAGEMENT PLAN

At Stobi there is an inevitable conflict between preserving an outstanding but endangered site and enabling people to experience it. This can be managed by the development and implementation of a Visitor Management Plan. Its objectives would be to:

- Define policies to support the sustainability of the values of the site:
 - Balance protection with enjoyment: ensure that all activities and facilities are of quality design complementing long-term protection of the archaeological site.
- Identify objectives for visitor infrastructure, presentation and interpretation, guiding decision making and setting priorities in the short-, medium-, and long-term:
 - Provide and maintain highly functional and sustainable visitor facilities that support visitor access to significant parts of the site and enhance the quality of the three phases of the visitor experience (the preparation for the site visit, the experience upon arrival, and the experience on the site).
- Identify the visitor facilities that are currently needed and for those in the future:
 - Define the ultimate carrying capacity of the site
 - Ensure that the design (form, materials and height) of new facilities is sensitively managed to protect the visual topography of the site.
- Identify 'access' zones according to distinct function of visitor activities, recorded on the site's GIS platform:
 - Vulnerable to damage from visitor access
 - Relatively robust for visitor access
 - Accessible to disabled visitors
 - Dangerous
 - Visually sensitive and at risk from new visitor infrastructure.
- Ensure the health and safety of visitors, according to the level of risk. This means the review of dangerous areas, including:
 - Unsafe viewing platforms (Building with Arches, Episcopal Basilica)
 - Areas still under excavation due to risk of collapse of the baulks between archaeological trenches (Temple of Isis).

5.4.2. CREATE PARTNERSHIPS

Local cultural heritage sites

Stobi and other sites in the area could benefit from partnerships to promote their collective heritage. Support could be sought from local government authorities, as increased tourism would benefit the local economy.

It could also be based on the promotion of local cuisine, wine, and the natural environment in the form of sustainable tourism.

Creation of a local 'cultural route', based on historical / archaeological sites, cuisine and natural environment could be promoted to tour companies in Skopje, who could then develop and market new package tours to the area in and outside the country, especially in Bulgaria, Kosovo, Serbia and countries along Corridor 10. A few are already advertised on TripAdvisor.¹⁵ Such a project can be initiated by Stobi as an important stakeholder but needs a relevant partner such as a local tourist chamber or association to design a legitimate project proposal for funding through the Macedonian government or EU programs.

The Center for Development of Vardar Planning Region (<https://vardarregion.gov.mk>) developed a Regional program for inclusive tourism of the Vardar Planning Region 2021-2024.¹⁶ A good example is the program Illyricum trail, part of the Roman Emperors and Danube Wine Route which since 2019, has included Stobi.

Local communities

The local population was drawn to the site when there were events in the Theatre (during the Ancient Drama Festival etc.). But otherwise, the archaeological site does not positively impact the daily lives of local communities, except for the small number who are employed at NI Stobi.

In the long-term the site could connect with the local community through a variety of events. Considering its current condition, ongoing archaeological excavations and conservation activities as well as the lack of appropriate infrastructure, such events are rather not recommended.

The Ministry of Transport

The Skopje–Thessaloniki motorway has a huge impact on the site, in terms of visual intrusion, noise, and vibrations that possibly threaten adjacent monuments. Engagement with the Ministry of Transport is obviously essential to mitigate any proven damage from vibration, such as reduction in the speed limit through Stobi.

This relationship could also be used to benefit the site, with new signage announcing the cultural heritage site and rest facilities.

5.4.3. DEVELOP INTERPRETATION & PRESENTATION POLICY

Define policies and guidance

Interpretation and presentation should aim to enrich the visitor's intellectual understanding and visceral experience of the site, following the vision and objectives of the Visitor Management Plan. The multi-layered nature of Stobi gives the opportunity to interpret the broad historical evidence of the town.

Presentation includes different didactic tools: thematic visitor circuits; enhancement of physical access where possible; explicative panels; hard copy and oral descriptions; and virtually reality scenarios. There is already one existing example of a virtual reality experience in Stobi: "Gladiators are back in Stobi", a project created and implemented in cooperation with the Centre for Social Innovation Blink 42-21.

¹⁵ <https://explore-balkans.com/tours>

¹⁶ <https://vardarregion.gov.mk/web/wp-content/uploads/2021/08/Regionalna-programa-za-inkluziven-turizam-2021-2024.pdf>

Interpretation embraces the site as a whole at the macro level, and individual buildings and features at a micro level. It is based on the values and significance ascribed to these different components. It should speak to diverse audiences, such as children and adults, the latter with different levels of interest. Models are available for the development of didactic materials for school groups (see Appendix 7).

However, interpretation must be commensurate with the short visit of most visitors. This means communicating essential information concisely for the majority, while providing more detailed information for the minority that can be encouraged to spend a longer period of time. A simple means to convey different levels of information is through a thematic series of free leaflets, available at the site entrance. Examples where these could be developed are described below. They could also be available as pdfs on the NI Stobi website.

In the absence of a site museum, means should be found to present and interpret artifacts from the site, by means of photographs, replicas, holographs, etc., in a place of visitor assembly (e.g. cafe). This could be developed by a specialist in museological interpretation.

Guides should be consulted regularly as the interpretation and presentation plan develops, to ensure that they are fully engaged and can contribute to the process.

Present and interpret ancient buildings (restoration, anastylosis & reconstruction)

A policy for physical interventions in ancient buildings has been recommended in Conservation policy and practice (Section 4.5.6, Define philosophical intervention policy / Chapter 4). This should include consideration of how different buildings are interpreted to the public in physical interventions. In the case of structural typologies of Stobi, this could entail selective anastylosis (North Basilica, House of Parthenius, the Theatre scenae frons), or restoration of lost features (doors and windows). Physical reconstruction in situ is contrary to international standards. Instead, modern technology allows the original appearance of buildings to be conveyed by means of virtual reality, or traditional graphic images on panels and in guidebooks.

Partnerships with universities should be formed to develop virtual reality presentations of the evolution of the site and description of its various buildings.

Design and build a site museum

A new museum with good presentation / storage / study / conservation facilities is very much needed. Its design needs to be based on a brief created by a specialist multidisciplinary project team, consisting of a project manager, the site director and senior archaeologist. Their task would be to create a design brief that incorporates functional, aesthetic and performance criteria to be used by an appointed architect. The project manager and team would ensure that the architect adheres to the brief in his design and execution.

Interpret inaccessible features

In Conservation policy and practice (Section 4.5.6, Define the role of reburial), it is recommended that important features, such as mosaics or hypocausts, not visible along the tourist route, should be protected through long-term reburial. These can be presented on interpretative panels, also explaining the reason for reburial.

Explain restoration and conservation

The general public engages with important archaeological discoveries. Their interest can also be captured with the restoration process. For smaller projects, this can be explained by temporary display panels in situ. Special tours or public lectures could be offered for larger projects by its manager/architect. The latter could be promoted within the local community.

The evolution of an archaeological site and its monuments from destruction and burial, through to excavation, restoration and conservation is almost never explained to visitors. Consequently, they have no understanding of the current appearance of a site. This could be explained in summary form, in a small leaflet. It could include historical photographs of the site, and examples of buildings before and after restoration. This medium could also explain the physical fragility of archaeological sites.

Exploit shelters for interpretation

These structures are essential to present and protect some features at Stobi, as addressed above (Conservation policy and practice. Chapter 4, Define the role of shelters). Their primary purpose is protection, but they should also enhance the visitor experience through design and access.

Shelters should never be the basis for additional income generation. The cost of construction and maintenance of shelters will never be met by expected increases in visitor-based revenue. Shelters bring their own considerable monitoring, maintenance and management costs.

Develop the Orient Express Railway and World War I corners

The famed Orient Express inspires great public interest, as romanticized in many popular films. The fame of the former Arlberg Express should be exploited to promote its history through a variety of presentations / exhibitions / tourist products.

Another important feature of Stobi is the WWI frontline. Considering the excavated wartime trenches and artifacts, the site has a very important story to tell to its visitors which would enhance their experience.

Promote local flora and fauna

Many visitors to archaeological sites have an interest in their natural environment. This could be supported and encouraged by the creation of a small leaflet describing local flora and fauna.

5.4.4. EXPAND AND ENRICH THE VISITOR EXPERIENCE

The pre-arrival experience

NI Stobi website

Planning a trip nowadays almost always depends on the internet. The way in which the site is presented is, therefore, of critical importance. The following questions arise: what are the interpretive resources; how to get there; how much time to spend there; what are other sites of interest nearby? These characterize how individuals plan their trip before the site visit.

NI Stobi's website should be regularly updated and expanded to respond to the interest of potential visitors, teachers of school groups and academics. This would not only enhance the pre-arrival experience, but also provide a significant teaching and academic resource. It should also promote opportunities for the local population.

To reach more and diverse audiences (especially potential visitors, donors/sponsors and media), the website will require in the next 2 to 3 years a redesign following contemporary web trends. But even more importantly, the website should be supplemented with more pages corresponding to the needs of major non-scholarly visitor groups: tourist information (nearby hotels and places of interest, information about visitors facilities and services including special tours and VR tours), virtual reconstructions, information about non-archaeological features of Stobi (landscape, flora and fauna, viticulture, history facts about WWI and the Orient Express etc.), virtual tutorials for kids and non-specialists, kid-friendly pages etc. A digital scientific repository of data and publications with restricted access for authorized individuals or institutions as well as a series of short online presentations related to Stobi's history, archaeology, protection and management will increase NI Stobi's reputation and use as a research center. The website has the potential to partially compensate for the lack of a real museum at Stobi by creating a virtual one.

Depending on its policies and managerial pragmatism NI Stobi can choose between redesign and upgrade of the existing website or development of two or even three additional websites to address different audiences: specialists, visitors etc.

Highly recommended SEO consultation and optimization is required before and after the redesign of the website/s along with other prerequisites: development of a visual identity and strategy for correlation with Stobi strategic priorities: increase of domestic/international visitors, fundraising, improving the dissemination of research results, creating partnerships etc.

Social media

The influence of social networks is immense and allows sharing of experiences in real-time. Visitors can indirectly promote the places that they visit, pending on their positive experience. Internet sites like TripAdvisor allow evaluation of the experiences of others, creating an immense cyberspace for advice and reactions of correspondents. TripAdvisor is an excellent platform for advertising not only the archaeological site itself but also the conservation services, events and festivals as well as education courses that take place at Stobi.

NI Stobi should monitor such sites, to inform the development of the Visitor Management Plan and its evolution.

The arrival experience

This phase includes car parking, arriving at the entrance / visitor centre, buying admission tickets and receiving information about the site and how to navigate it.

The visitor anticipates what there is to see, begins to think of the ways in which they want to spend their time and how to benefit from the available infrastructure (drinks, food, toilets). A simple, traditional three-dimensional model of the site, placed at the entrance, is a powerful tool in explaining its topography and archaeological resources and visitor infrastructure.

This is the first opportunity to make the visitor aware of the importance of respecting the archaeological remains and to announce rules to discourage negative behavior.

The on site experience

The experience of the visitor should be unique. Preservation of 'exceptional' authenticity and integrity of a site is one of the fundamental objectives of its conservation and this should be communicated through both intellectual and visceral experiences.

At Stobi, this needs to be complemented with the provision of places for rest, contemplation, and nourishment that benefit from the natural beauty of the site.

Visitor infrastructure

This would normally include a cafe, shop, toilets and rest points, as essential expectations of visitors. At Stobi, they should not be placed in sensitive archaeological and natural contexts.

However, the cafe should be located in an attractive area, preferably with a view over the site; this can be a memorable part of the visitor experience.

On a large site such as Stobi there should be more than one toilet facility.

Rest points should include both shaded and exposed benches. The location of shaded rest points with canopies should be placed in areas of low visual impact in the site topography. To ensure adequate shade cover in hot summer months, architectural software should be used to inform the design of canopies to calculate sun and shade patterns in relation to topography and orientation. Otherwise, they may provide little actual shade.

Barriers and other protective infrastructure should be effective, but also visually sensitive in the archaeological landscape, in terms of visual impact (light materials, neutral colors).

Thematic visitor routes

Current excavation research policy aims to understand the evolution of the site and present / interpret different chronological phases in distinct areas. This allows the creation of different thematic routes conforming to different periods and topics.

This enhances the power of the site by offering different thematic perspectives and experiences (Mosaic route, Temple route, Roman route, Byzantine route etc.).

A short (40 min to 1 hr) route in addition to the existing long (1 ½ to 2 hrs) route can help visitors with a limited amount of time (normally random travelers on the motorway and local and international tourists driving to Greece) decide to visit the site.

Visitor routes can give priority to conservation needs: protect areas of interest, avoid dangerous areas and define a progressive experience to understand the power of the site.

Didactic aids

The site visitor app should be regularly updated to include relevant information. As foreign visitors increase, it could be translated into other languages (see Appendix 1: Visitor survey).

Traditional signage that is clear, concise and durable is still essential. If signage is not sufficiently clear, visitors risk being poorly informed and disappointed by their visit experience. At the same time, excessive signage creates visual pollution on a sensitive site.

APPENDIX 6: PROPOSED RESEARCH PROJECTS

1. VISITOR SURVEY

A visitor survey aims to:

- characterize visitor demographic profiles (gender, age, nationality, group size)
- understand their needs, expectations and actual experience
- respond with measures to the visitor experience
- increase visitor numbers and revenue, within the carrying capacity of the site
- encourage return visits.

Social media offer an excellent platform to promote cultural sites if experience is positive or exceptional.

A thorough survey consists of several components:

- basic visitor profile data captured at the point of ticket purchase
- distribution and collection of visitor questionnaires
- formal interviews with visitors and tour guides (based on themes in the site experience)
- observation of visitor routes and behavior (from organized groups to independent visitors)
- collation of survey data
- appraisal of survey data.

This results in recommendations that respond to the aims and objectives of the survey.

2. POTENTIAL PARTNERS IN PROMOTION OF LOCAL CULTURAL HERITAGE

Local cultural heritage sites

There are no heritage sites in the closest municipalities of Gradsko and Rosoman. The archaeological site of Gradishte near Negotino (13 km to the south of Stobi) is not suitable for tourist presentation. In the city of Negotino there is a small museum and the remains of the Saat-kula (Ottoman tower) built in 1821.

APPENDIX 7: TECHNICAL RESOURCES

Teaching and learning resources: www.english-heritage.org.uk/learn/teaching-resources

Introducing young people to heritage site management and protection:

<https://www.iccom.org/publication/introducing-young-people-heritage-site-management-and-protection>

Jeunes et sauvegarde du Patrimoine: <https://creativecommons.org/licenses/by-nc-nd/3.0/>



FUNDRAISING AND RESOURCE DEVELOPMENT

The archaeological site of Stobi is a global treasure that could benefit from additional financial support for excavations, conservation, site maintenance, visitor management, interpretation and presentation. Stobi has great potential to develop new resources for the site both in the short- and long-term. Even with the COVID-19 pandemic and all the public health and economic challenges this has created, key funders remain focused on providing support for global heritage. This chapter outlines proposed fundraising and resource development strategies and identifies a preliminary list of potential sources that might be cultivated.

The strategic recommendations are based on:

© A review of the revenue and financing sources for the site in the past five years

© NI Stobi's projects, activities and priorities

© Staff time capacity and expertise available to pursue funders and develop partnerships at this time.

6.1. CURRENT REVENUE SOURCES

In the past five years Stobi has benefited from state funding via the Ministry of Culture, other funding sources (donations) and earned income. (See the table below for comparison of the three funding sources in the period 2015-2019).

Ministry of Culture

The Republic of North Macedonia's Ministry of Culture has been the major funding source for Stobi since the establishment of NI Stobi as a separate and independent institution in 2008. In the early years the government financed major archaeological excavations and conservation at Stobi as projects of capital national interest, disbursed and managed by the Directorate for Protection of Cultural Heritage. The Ministry had been the major funding source over the analyzed period (2015-2019) as well.

These funds cover the costs for employee salaries and benefits¹ as well as the operating costs for the site (maintenance, electricity, other overhead costs). The Ministry's annual call for projects, called

¹ The amount varies due to the increasing of the number of employees over the years, as well as the increasing of the net salaries at state level.

"Program for national interest in culture" finances projects for cultural heritage protection activities at the site (excavation, conservation etc.) proposed and requested by Stobi's management. The amounts granted vary each year.

From 2015 to 2019 Stobi's annual budget ranged from 16,159,837 to 22,830,234 Macedonian denars (MKD). This is the equivalent of 293,517 to 414,675 USD or 262,798 to 371,275 EUR.

Funding from the Ministry of Culture for staff, operating and project activities supported the majority of Stobi's annual budget over the past five years, as shown below. The remainder of the budget consisted of earned income and donations.

2015: 73.34%

2016: 72.96%

2017: 64.64%

2018: 69.36%

2019: 84.25%

Earned income

NI Stobi generates modest earned income mainly from the sale of tickets and souvenirs. These funds were used for the maintenance of the institution and the site and temporary employment of visitor services staff. Between 2015 and 2019 earned income provided between 7.27% and 10.24% of the annual budget.

Other funding sources

NI Stobi benefited from several external sources of funding that supported specific projects and programs. The interest demonstrated by these funders indicates that Stobi has the potential and capacity to attract additional sources of support. Between 2015 and 2019 income provided by donations was between 7.61% and 26.57% of the annual budget.

Balkan Heritage Foundation

NI Stobi and Balkan Heritage Foundation (BHF) have been organizing international field schools and conservation workshops for students since 2010. The funding for NI Stobi each year depends on the number of enrolled students whose field school fees cover the expenses for the implementation of the field schools and workshops and contribute to preservation, maintenance and excavations of Stobi. BHF contributions for the period 2015-2019 range on an annual basis between 1,894,033 and 2,651,647 MKD (34,402 - 48,163 USD), or between 8.29 and 16.40% of the total annual budget.

U.S. Ambassador's Fund for Cultural Preservation

The United States Ambassador's Fund for Cultural Preservation (AFCP) has provided three grants for Stobi in 2001, 2010 and 2016. The 2016 grant of 88,690 USD supported the conservation of the Baptistry in the Episcopal Basilica, including the mosaic floor and the marble baldachin over the baptismal pool. The amount was disbursed in phases from 2016-2018.

J.M. Kaplan Fund

The J.M. Kaplan Fund generously provided a 100,000 USD (equivalent to 5,505,560 MKD) grant in 2018 to support the preparation of a Master Conservation Plan for Stobi, of which this chapter is a part. NI Stobi is a beneficiary of the grant obtained by the Balkan Heritage Foundation (BHF).

EU funds

NI Stobi was the beneficiary of several projects from The Regional Cooperation Council (RCC) sub-granting programs for tourism development and promotion:

- 2015-2016, sub-grant through the Cultural Heritage Protection Office (for mobile app, Episcopal Basilica and tourist promotion, total amount of 22,000 EUR).

Year	Ministry of Culture		Other income	
	Budget for salaries	Budget for projects and overall costs	Earned income	Donations
2015	5.135.336,00 MKD 93.275,45 USD 31.77%	6.718.018,00 MKD 122.022,42 USD 41.57%	1.654.836,00 MKD 30.057,54 USD 10.24%	2.651.647,00 MKD 48.163,07 USD 16.40%
2016	7.676.379,00 MKD 139.429,57 USD 36.69%	7.587.023,00 MKD 137.806,56 USD 36.27%	1.521.469,00 MKD 27.635,13 USD 7.27%	4.133.275,00 MKD 75.074,56 USD 19.75%
2017	7.746.961,00 MKD 140.711,58 USD 40.41%	4.645.798,00 MKD 84.383,75 USD 24.23%	1.671.707,00 MKD 30.363,97 USD 8.72%	5.094.010,00 MKD 92.524,82 USD 26.57%
2018	8.177.389,00 MKD 148.529,65 USD 40.60%	5.792.314,00 MKD 105.208,44 USD 28.76%	1.855.750,00 MKD 33.706,83 USD 9.21%	4.311.693,00 MKD 78.315,24 USD 21.41%
2019	9.151.034,00 MKD 166.214,40 USD 40.08%	10.085.194,00 MKD 183.181,98 USD 44.17%	1.854.571,00 MKD 33.685,4 USD 8.12%	1.739.435,00 MKD 31.594,15 USD 7.61%

* Annual budget in USD: National Bank of the R. of North Macedonia: exchange rate on January 17, 2020 1USD=55.0556 MKD

6.2. NI STOBI'S NEEDS AND POTENTIAL FUNDING SOURCES

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NI Stobi's needs for additional funding:

Elsewhere in this Master Conservation Plan, a number of priorities have been identified based on urgency and the vision for the site's future development. Additional funds need to be raised for all activities of NI Stobi. Activities should follow the already established plan of priorities in accordance to the potential funding sources, type of grants, eligibility and capacity of NI Stobi and its potential partners for certain grant types (or funding resources), and motivation of different funders. NI Stobi's needs for additional funds are:

- Preventive protection measures
- Conservation projects and their implementation
- Building capacities and training
- Technical research
- Documentation and digitalization
- Archaeological excavation for the needs of the conservation activities
- Enhancement of the visitor experience
- Marketing.

The potential funding sources are:

- Governmental agencies
- Foreign museums and academic institutions
- EU funds
- Foundations
- Corporations and Businesses
- Individual donors.
- Each of the listed potential funding sources can answer to different activities and needs of Stobi.

6.3. GUIDELINES FOR SETTING UP A FUNDRAISING STRATEGY

Fundraising is a complex and time-consuming process that requires training followed by persistent and focused efforts. The first and most important part of the strategy is developing a Fundraising team and Fundraising Action Plan.

Develop Fundraising Team

Identify the staff members who will be responsible for creation and implementation of the plan. The team can create a network of consultants (consultant bureaus and agencies in the country and abroad) and others (volunteer fundraising committee, field school's alumni group, organizations of the diaspora throughout the world, fiscal agents etc.) Roles they may play include:

- Research and identification of projects partners
- Research and prospect identification
- Proposal writing
- Budget and timetable development

- Individual or foundation prospect cultivation, solicitation, follow up and stewardship
- Identify key people who will need to contribute to proposal development and approve proposals before they are submitted
- Build the capacity of the fundraising team by investing in workshops and training opportunities to increase their skills and understanding of how to research, cultivate and approach prospects effectively.

Elements of Fundraising Action Plan

The fundraising team should create a Fundraising Action Plan based on the following work that will be needed for effective fundraising:

- Set short- and long-term priorities for seeking support
- Identify the amounts needed and any matching funds that might be required
- Develop budgets for the above priorities, (total or divided in phases for larger scale projects) including any funds already in hand or expected as well as what is still needed to cover costs
- Identify the partners for the submitting process or implementation of the project if necessary for particular project or need
- Create a database of possible prospects with contact information
- Identify the best prospects (governmental agencies, EU funds, foundations, individual donors) for specific projects.
- Develop a timetable for submitting and following up on proposals.

See the bibliography in the Appendix 8 for resources on proposal development.

6.4. GLOBAL FUNDING PROSPECTS FOR STOBI

6.4.1. DOMESTIC GOVERNMENTAL AGENCIES

The Ministry of Culture is the main source of funding of most of the NI Stobi's activities through its Annual program. It mainly covers the archaeological excavations, conservation projects and their implementation, as well as general maintenance of the site, but rarely other needs such as research, digitalization, training and building capacities, improvement of the visitor experience etc.

Annual programs of other ministries or governmental agencies should be considered and identified in the list of possible prospects for enhancement of the visitor experience and digitalization.

The Ministry of Local Self-Government supports tourism infrastructure via municipalities and the regional centres for development of the eight planning regions in the R. of North Macedonia. These centres are also supported by annual calls through the programs for equal regional development for projects announced by the Bureau for Regional Development (BRD),² a body within this Ministry intended for improving the tourism infrastructure, the wine tourism, establishment of tourism development centres, enhancement of the environment, regulation of riverbeds etc. Stobi can consider cooperation with the Centre for Development of the Vardar region.

National Agency for Promotion and Support of Tourism,³ which publishes annual calls for smaller projects for support of tourism. Stobi can consider applying for such support for projects, for instance, for placement of new signage (on the main motorway and regional roads, but also within the site itself), preparing of new guides, brochures, development of new souvenirs etc.

² <https://brr.gov.mk/>

³ <http://tourismmacedonia.gov.mk/>

The Fund for Innovations and Technical Development⁴ supports projects in various spheres, being focused on innovative solutions for the ICT sector. Their support could be channeled for projects for digitalization of Stobi's immovable and movable objects, the registries and other databases in view of enhancing the documentation processes, but also the presentation via innovative ICT means.

6.4.2. FOREIGN EMBASSIES IN N. MACEDONIA

Possible bilateral donors for conservation activities are some foreign states' embassies in Skopje, who have supported heritage conservation projects in Macedonia in the past.

The Embassy of the Netherlands in Skopje in 2018 launched a new program for culture financed by the Dutch Ministry of Foreign Affairs entitled Creative Twinning (<https://english.rvo.nl/subsidies-programmes/creative-twinning>), eligible for projects for sustainable preservation of cultural heritage.

The embassies of Germany and France usually do not launch public calls, but it is advisable to contact them directly and ask for support based on a clearly defined project. Specifically there are some possibilities for funding from Germany's Federal Ministry of Foreign Affairs, and respectively the French Agency for Development which had announced its intention to become present in the Western Balkans (<https://www.afd.fr/en/actualites/afd-heads-balkans>).

Annually, the American Embassy⁵ launches public calls for the Ambassador's fund for Cultural Preservation (AFCP), which supports the preservation of archaeological sites, historic buildings and monuments, and museum collections. The eligible projects include conservation, preventive protection, restoration, anastylosis, consolidation, and documentation and digitalization.

6.4.3. FOREIGN MUSEUMS AND ACADEMIC INSTITUTIONS

A site of the significance of Stobi would undoubtedly be of great interest to foreign archaeologists, researchers, and some new partnerships in this regard need to be pursued. That would not only enhance the technical research and preventive conservation activities at the site, but it would also provide a significant new influx of finances for that purpose. Many universities have their own funds for archaeological research abroad or other types of scientifically based research programs, as well as programs for digitalization or documentation of the cultural heritage but there are also other open possibilities for funding of research cooperation. Stobi offers great possibilities for organizing field schools, as the partnership with Balkan Heritage Foundation has shown, offering both education and training for students and opportunities for advocacy.

6.4.4. EU FUNDS

Horizon 2021-2027 is the new European Union program for Research and Innovation. Republic of North Macedonia is eligible for this program through a partnership with an EU Member State. It has a dedicated cluster on Culture, Creativity and Inclusive Societies, through which cultural heritage projects could be supported.

European Research Council (ERC)⁶ grants could be taken into consideration when planning research and excavation projects at Stobi. The prestigious ERC grants (Starting Grants, Consolidator Grants and Synergy Grants) are awarded to projects through open competition.

Creative Europe (2021-2027) is the new EU program⁷ for the cultural and creative sector. It will continue to support cross-border projects within its Culture, Media and Cross-Sectoral strands, and cultural heritage is listed as one of its main priorities. Calls for proposals will continue to be issued

4 <https://ftr.mk/>

5 <https://mk.usembassy.gov/education-culture/grants/>

6 <https://erc.europa.eu/>

7 http://ec.europa.eu/culture/calls/index_en.htm - _status=open

throughout the year, and more information and support could be sought from the Creative Europe desk which exists as a unit in the Ministry of Culture. The program will support cooperation between different types of heritage organizations and encourage innovative reuse of cultural heritage; interventions in the historical environment and use of digital cultural heritage content; creative ideas for better preservation, presentation and interpretation of the cultural heritage. Stobi can develop cooperative projects with other Roman archaeological sites throughout Europe, the specific topics varying from contemporary uses of Roman theatres, creation of digital models to new models of interpretation for specific groups of visitors etc. Along with these "soft" heritage measures, some segments of the site's assets could also profit from direct conservation measures – mosaics, marble elements, movable finds etc.

Interreg IPA Cross-border Cooperation Programme "Greece - Republic of North Macedonia 2021-2027". The specific goals of this program are the economic development of the border regions, the promotion of tourism and transportation infrastructure, as well as enhancement of the environment. Stobi is located in the Vardar region thus is eligible to apply for cooperation projects in the program with Greece.⁸ Among its priorities are the development and support of the local economy and the improvement of attractiveness and promotion of tourism in the cross-border area, and it supports promotion and presentation projects (printed and audio guides and apps, organizing public events, tickets office/system, souvenir shop, larger infrastructural projects, visitor's paths, protective shelters, visitors centre, museum).⁹ Its second set of priorities will focus on the protection of environment and transportation, which also addresses the prevention, mitigation and management of natural disasters, risks and hazards. This offers possibilities not only for projects focused on the impact of climate changes on the site (directly influencing the need of conservation interventions), but also for larger scale projects such as consolidation of Crna riverbed which represents a serious threat to the site, and/or the refurbishment of the storage facilities nearby.

Cultural Cooperation Projects in the Western Balkans "Strengthening cultural cooperation with and competitiveness of cultural and creative industries in the Western Balkans",¹⁰ which is entirely funded by the Instrument for Pre-accession Assistance (IPA II) with a total budget of 5 million EUR. Stobi is eligible for this program through partnerships with at least two organizations (project leader and/or partners) established in at least two different Western Balkan IPA II beneficiaries and at least two organizations of the partnership (project leader and/or partners) established in at least two different EU Member States. Topics of interest are "developing of new skills and gaining professional experience and expertise" (workshops, seminars, networking, study visits), "audience development", "promoting new models of revenue, management and marketing for the cultural and creative industries", "adapting to the digital shift".¹¹

The Regional Cooperation Council (RCC) is a regional organization for the countries of South-East Europe, based in Sarajevo, Bosnia and Herzegovina. They are implementing an EU funded project on tourism development and promotion called Triple-P Tourism in SEE: Promotion, Policy, and Pilot Grants Work Programme, valued at 5 million EUR, obtained via the IPA II program. This RCC's project will issue small grants to support improvement of tourism infrastructure and services along developed routes.¹² Thus far it has established three such touristic routes, two of which include the archaeological site of Stobi: 1. Western Balkans Crossroads of Civilizations; as joint regional identity and 2. Illyricum trail – as part of the Roman Emperors and Danube Wine Route focusing on archaeological sites from the Roman period. This opens up possibilities for proposing tourism development and promotion projects for sub-granting (new guides, ticketing system, marketing activities etc.).

Local and Regional Competitiveness Project (LRCP)¹³ is a four-year investment operation financed with a grant from the European Union (IPA II). Its objective is to enhance the contribution of tourism

8 <http://www.ipa-cbc-programme.eu/home/>; <http://www.sep.gov.mk/content/?id=20#.XjFc2gRKjIU>

9 Stobi benefited this programme for 2021

10 https://eacea.ec.europa.eu/sites/eacea-site/files/1_call_notice_eacea_39_2019_0.pdf

11 For other digitalization grants, also: <https://pro.europeana.eu/page/europeana-research-events-grants-programme-2019-call-for-submissions>

12 <https://www.rcc.int/tourismgrants>

13 <https://lrmp.mk/>

to local economic development and improve the capacity of the Government and public entities to foster tourism growth and facilitate destination management. There have been two calls for applications with sub-projects, including sub-grants for tourism related infrastructure, specifically highlighting cultural and natural heritage sites. Such grants were disbursed also for conservation/restoration activities, as an important segment within tourism at cultural heritage sites. The sub-projects were to be implemented in one of the 10 selected destinations, Stobi being specifically highlighted in the Tikvesh region destination.¹⁴

National Agency for European Educational Programmes and Mobility,¹⁵ which promotes the implementation of several EU educational programs: Erasmus+,¹⁶ E-twinning (for primary and secondary schools, kindergartens),¹⁷ Europass,¹⁸ etc. They also organize study visits for decision-makers in educational institutions and so-called Contact seminars.¹⁹

6.4.5. FOUNDATIONS

The AG Leventis Foundation²⁰ is involved with a wide range of projects across the world that support educational, cultural, artistic and philanthropic causes in Cyprus, Greece and elsewhere. This fund makes systematic grants of scholarships, and sponsorship of nature conservation and sustainable development projects in Southern Europe, Africa and world-wide.

The AHRC Arts and Humanities Research Council²¹ promotes international links at many levels: from policy to research funding and researcher links. It encourages international engagement as an integrated part of its standard funding schemes and operates a number of partnerships with international research funders. It features the Joint Programming Initiative on Cultural Heritage²² which promotes safeguarding of cultural heritage in its broader sense, including tangible, intangible, and digital assets.

The Global Challenges Research Fund (GCRF)²³ is a 1.5 billion GBP fund announced by the UK Government in 2016 to address complex global development challenges and support collaborative research that will improve the economic prosperity, welfare and quality of life of people in Low and Middle Income Countries (LMIC). Collaboration and partnership with overseas researchers, governments, NGOs and other organizations is a core part of the GCRF.

The European Cultural Foundation²⁴ initiates and supports cultural exchange and creative expression across wider Europe and is open to individuals and organizations from all over the world. Various calls include Research & Development grants to support people and their ideas using creativity and cultural methods for positive change at a local, regional and/or European level. Tandem supports long-term cooperation, knowledge development and networking opportunities between cultural managers across wider Europe. Supporting Travel for Engaged Partnership: STEP travel grants support creative and critical cultural workers traveling across Europe and its neighboring countries, to help foster a society with greater solidarity, equality and a stronger sense of social justice.

Gerda Henkel Stiftung Foundation,²⁵ active both inside and outside Germany, promotes science at universities and research institutes, primarily by supporting specific projects in the field of the

14 A tourism development plan had been prepared for all selected destination within this project, including the Tikvesh region and its surroundings: https://lrcp.mk/lrcp-uploads/2019/04/Destination-4-Tikvesh-region-and-surroundings_EN.pdf

15 <https://www.na.org.mk/index.php/en/en-home.html>

16 <https://www.na.org.mk/index.php/mk/erasmus-359.html>

17 <http://etwinning.mk/>

18 <http://europass.mk/>

19 <https://www.na.org.mk/index.php/mk/tas.html>

20 <http://www.leventisfoundation.org/en/>

21 <https://ahrc.ukri.org/>

22 <https://ahrc.ukri.org/funding/internationalfunding/joint-programming-initiativeprogrammes/>

23 <https://www.ukri.org/research/global-challenges-research-fund/>

24 <https://www.culturalfoundation.eu/home>

25 <https://www.gerda-henkel-stiftung.de/en/patrimonies#37>

humanities that have a specialist scope and are limited in time. A special concern of the Foundation is the advancement of young researchers.

The Patrimonies funding initiative of this Foundation is particularly focused on the preservation of cultural heritage, specifically in regions experiencing crisis. International in focus, it is intended to be active first and foremost in crisis regions as well as in countries which do not have the capacity to preserve their own cultural heritage themselves. Funding may include: material aid, including costs for conservation and restoration work; personnel costs, preferably for service contracts and scholarships; grants to support the costs for research and training residencies; and travel expenses.

Headley Trust²⁶ supports conservation and recording of heritage (including ecclesiastical & vernacular architecture, archaeology and cultural artifacts), primarily in South Eastern Europe (Slovenia, Croatia, Albania, N. Macedonia, Bulgaria, Romania, Serbia, Montenegro, Bosnia-Herzegovina), but also in Turkey and Ethiopia: raising awareness of heritage issues in these countries, supporting the capacity of new heritage NGOs, and training the next generation of conservation and heritage professionals.

The King Baudouin Foundation²⁷ is a European foundation based in Brussels but working at the Belgian, European and international levels. In our region it mainly deals with issues such as integration, migration policy, philanthropy, and democracy in the countries of the western Balkans. In the sphere of cultural heritage it is focused on Belgian heritage, however, it can facilitate local or international innovative projects having an impact on natural heritage, architectural and movable cultural heritage.

6.4.5. CORPORATIONS AND BUSINESSES

This year and in the near future many companies are expected to reduce their charitable giving if net profits decline significantly, or if they are forecasting losses. Even in strong economic times, corporations and local businesses will probably never be a major source of support for Stobi unless opportunities can be created and promoted to companies that clearly relate to their communications and marketing goals.

6.4.6. INDIVIDUAL DONORS

Individual donors can become a strong source of support for Stobi as well. Recent surveys show that the majority of major donors plan to continue and even increase their giving at this time.

In addition to the field schools, events and public programs can help identify local and regional prospects and could also generate modest levels of earned income. Generally, individual donor development takes more staff time than foundation support, but if efforts begin now, individual giving could be expected to grow over the next several years. Eventually this revenue source potentially could equal foundation support for the site. As a first step, Stobi should develop a database to track people who participate in field schools, events and programs. Updates about the site can be sent to them to begin to cultivate their potential interest in becoming members and/or making donations.

²⁶ <http://www.sfct.org.uk/Headley.html>

²⁷ <https://www.kbs-frb.be/>

APPENDIX 8: FUNDRAISING BIBLIOGRAPHY (General References and Service Organizations)

Candid (Formerly called The Foundation Center) – www.candid.org

The leading source of information about philanthropy worldwide. Newsletters and many on-line resources. Some training programs are provided free of charge. If you click on the tab "Things You Can Do" you can search over 100,000 grantmaking foundations and their 990s (the annual tax forms they are required to file in the United States, which show the grants they made). Candid is currently expanding its international funder database as well.

Grantsmanship Center – www.tgci.com

Helps nonprofits serve their missions by offering training and publications.

Worldwide Initiative for Grantmaker Support (WINGS) – www.wingsweb.org

Membership organization of 130 philanthropic associations, networks, academic institutions, support organizations and funders in 45 countries. Mission is to strengthen, promote and provide leadership on philanthropy. Research and policy publications in many languages.

Grant Research Resources

GrantStation – www.grantstation.com

Since 1999 has helped connect grantseekers with calls for proposals. They provide monthly lists of international prospects and only include funders who are actively accepting proposals. Also offers training.

Grant Writing and Major Donor Development Resources

Barbato, Joseph and Danielle S. Writing for A Good Cause: The Complete Guide to Crafting Proposals and Other Persuasive Pieces for Nonprofits. New York, NY: Simon and Schuster, 2000.

Cheryl Carter New and James Aaron Quick,

Grantseeker's Toolkit: A Comprehensive Guide to Finding Funding (New York, 1998).

Cheever, Jane, The Foundation Center's Guide to Proposal Writing (New York, First out in 1993, now in 6th edition)

GrantSpace (Part of Candid) – www.grantspace.org

Proposal Writing Short Course: <http://foundationcenter.org/getstarted/tutorials/shortcourse/>

Free one-hour introductory course. GrantSpace also provides a variety of sample proposal documents.

[GrantSpace, How to Start a Major Gifts Program – Training, 1 ½ to 2 hours, \\$65 registration.](#)

Golden Brown, Larissa, and Martin John Brown, Demystifying Grant Seeking: What You REALLY Need to Do to Get Grants, San Francisco, 2001 (Jossey-Bass; 1st edition)

Klein, Kim, Starting a Major Gifts Program – Parts 1 and 2, Nonprofit Quarterly, May 25, 2017,

www.nonprofitquarterly.org

GLOBAL FUNDING PROSPECTS FOR STOBI

Funding Prospect	Location(s)	Relevant Funding Interests	Average Grant Range	Contact Details	Notes	Rating (1=low, 5=highest)
A.G. Leventis Foundation	Athens, Cyprus, Zurich and Lagos	Core interests include dissemination of Greek and Cypriot heritage; reconstruction of classical, Byzantine and post-Byzantine monuments. Also offers post-graduate scholarships for university study. Funded a 3-year MA Heritage Management program at University of Kent, held in Greece, that combined archaeology and business. In October 2019 announced commitment to Greek Bicentennial Initiative (1821 to 2021) along with the National Bank of Greece and 10 other Greek-based foundations.	Not stated on website.	George A. David, heads the Greek Committee.	Some compatible interests, but may only focus on Greek and Cyprus at this time.	1
Ambassadors Fund for Cultural Preservation	Washington, DC	Since 2001, has funded over 1,000 projects around the world. Archaeology and historic buildings are among the priorities. Stobi has already received support from the U.S. Embassy.	Small grants \$10,000 to \$200,000. Large grants over \$200,000.	Borka Taneska, Cultural Affairs Assistant	NOTE: Applications currently on hold due to the COVID-19 pandemic. This prospect is included here because it is expected to be viable in the future. ALSO: Dutch, French and German embassies are also potential sources of this type of funding.	3
Cultural Cooperation Projects in the Western Balkans	Skopje, North Macedonia	Through the Cultural Ministry, funds to gain professional experience and training. Can be used for workshops, seminars, networking, site visits. "Adapting to the digital shift" is a priority. Might be helpful in building virtual reality experiences for Stobi visitors?	Not stated on website.		Administered by the Education, Audiovisual and Culture Executive Agency. Need to find Macedonian and Western Balkan partners to develop a mutually beneficial project. Apply on-line, reviewed in Brussels.	2
David Berg Foundation	New York, NY, United States	Primarily funds Jewish-related causes, including art history research. Funded landmark synagogue restoration work of World Monuments Fund.	\$10,000 to \$50,000 average range	Michele Tocci, President; Abby Kaufthal, Senior Program Officer	Not one of the strongest prospects, unless somebody can make a personal connection and interest them in the Stobi synagogue.	2

Gerda Henkel Foundation	Dusseldorf, Germany	Concentrates its support on the historical humanities for candidates regardless of nationality. The Foundation supports research projects (Under Research Projects or Individual Scholarships) and cultural heritage preservation (Under Patrimonies). Another special initiative that relates to Stobi is "Lost Cities". With its Patrimonies funding initiative it promotes the preservation of the cultural heritage, specifically in regions experiencing crisis. Potential support relevant to Stobi includes: 1) support for specific research projects in the form of funding for personnel, travel and hardware, (or for individual scholars in residence for one month up to two years.) and 2) Support for measures to preserve historical cultural heritage under threat, primarily in crisis regions.	For individual researchers: 1,600 to 3,100 Euros/month plus family allowance. For small research projects, under 25,000 Euros. Larger projects can receive much more funding, only by invitation.	Dr. Anna-Monika Lauter, heads the Patrimonies program. Dr. Birte Ruhardt heads the Research programs, including Lost Cities.	Larger projects are developed by invitation in partnership with the Foundation. Priorities include: preserving cultural heritage; augmenting scientific infrastructure; educating young scientists; and establishing networks in science, politics and society in the regions. The most important criteria when deciding if a grant should be awarded are the academic significance and the quality of the research project. Also precise planning of costs and schedule of the proposed project are essential.	5
Getty Foundation	Los Angeles, CA United States	The Getty Foundation supports institutions and individuals committed to advancing the greater understanding and preservation of the visual arts in Los Angeles and throughout the world. Grant initiatives increase access to museum collections, strengthen art history as a global discipline, advance conservation practice, and support current and future leaders in the visual arts. The Foundation collaborates with the other Getty programs - the Getty Museum, Getty Research Institute, and Getty Conservation Institute. Since 1984, over 8,000 grants to 180 countries on all seven continents. 2019 examples include: The Brotherhood of the Monastery of St. Catherine, Cairo, Egypt, Publication on restoration and conservation of monastery in Mount Sinai, Egypt. Center for Advanced Study, Sofia, Bulgaria. Research Seminars "The Construction of Knowledge in Archaeology and Art History in Southeastern Europe". Fondazione Internazionale per la Conservazione del Mosaico, Belmonte en Sabina, Italy. 14th Triennial ICCM conference in Plovdiv, Bulgaria. International Council on Monuments and Sites, Charenton-le-Pont, France, For professionals from emerging economies to attend 20th General Assembly and Scientific Symposium in Australia. Israel Antiquities Authority, Jerusalem, Israel For professional networking gathering in Cyprus, through MOSAIKON program.	\$30,000 to \$240,000 or more.	Joan Weinstein, Director.	Support mainly through targeted initiatives and by invitation. Also through individual fellowships and grants for participation in international professional conferences and training programs.	5

Grow@ Annenberg (Annenberg Foundation)	Los Angeles, CA United States	Funds projects at World Monuments Fund (Annenberg Program for Endangered Cultural Heritage) and Global Heritage Fund. Supports the Foundation for French Museums, Save Venice, UNESCO. Seeks to support innovative global humanitarian efforts in arts, health, education and civic life.	\$10,000 to \$100,000 or more	Gregory Annenberg Weingarten, Vice President and Director of Annenberg Foundation.	A special initiative of the Annenberg Foundation. Gregory Weingarten also serves on the boards of the Victoria and Albert Museum, Penn Museum of Archaeology and Anthropology and the J. Paul Getty Trust.	2
J.M. Kaplan Fund	New York, NY United States	Heritage Conservation Program: conservation of archaeological resources in the Circum-Mediterranean. Preference for sites in jeopardy, Greco Roman conservation projects that are under-resourced and deserve more recognition. Interested in planning and hands on conservation work, more recently also professional development and training. Commissions reports and studies. Discretionary Grants (online only) for areas including art, architecture, publishing, and design, and conservation of lands and buildings. Related 2018 grants: \$100K Balkan Heritage for master plan, Stobi, Macedonia; \$200K over 2 years Council of American Overseas Research Centers renewed Responsive Preservation Initiative; \$90K in partnership with MOSAIKON for Algerian conservation; \$50K to Heritage Management Organization for 10 scholarships to attend professional development workshops; \$18K to Global Heritage Fund for documentation as a tool for heritage preservation.	\$15,000 to \$200,000	Amy Freitag, Executive Director; Will Raynolds, Heritage Conservation Program Consultant.	Priorities change each year according to the family's interests. Already funding the Balkan Heritage Fund's work at Stobi, potential to build on this support.	5

King Baudouin Foundation United States	New York, NY (main office is in Belgium)	Since opening as a 501(c)(3) public charity in 2002, served as a knowledgeable bridge between American donors and nonprofits overseas. In addition to work with donors, partners with European and African nonprofits. With an American friends fund at KBFUS, they can receive tax-deductible gifts from U.S. donors, while saving the trouble and expense of setting up their own charity in the United States. Over the past 3 years, KBFUS has facilitated over \$50 million, reaching almost every corner of Europe and Africa.	Not applicable. This Foundation serves as a fiscal sponsor, not a grantmaker.	Jean Paul Warmoes, Executive Director, United States Office.	If BHF or Stobi needs a fiscal agent to give it United States 501©3 tax status, KBFUS can provide this service for an administrative fee. (This allows individual and foundation donors in the U.S. to give to projects overseas.) Programs KBFUS represents include: Institute for Heritage Conservation (Greece); Opera di Santa Croce (Italy); ALIPH Foundation; Benaki Museum (Greece); Rome Heritage (Italy); Digitization Project for Armenian Treasures. Though KBF has grant programs out of its Belgian office, none are relevant for Stobi. Also hosts an American Express sponsored museum leadership program that brings European professionals to New York each year.	5
Leon Levy Foundation	New York, NY United States	Extensive funder of scholarship and research in the ancient world, leading to interdisciplinary and cross-cultural understanding, appreciation of ancient civilizations. Since 1997 has given \$13 million through the Shelby White and Leon Levy Program for Archaeological Publications at Harvard University. Largest program the Foundation supports is the Institute for Study of the Ancient World at New York University. Also funded excavation and conservation of the Lod Mosaic in Lod, Israel	Very large grants, but not published on website.	Shelby White, widow of Leon Levy; Meredith Ross, Program Director.	No unsolicited inquiries allowed. By invitation only.	1
Packard Humanities Institute	Los Altos, CA, United States	The Packard Humanities Institute (PHI) is a non-profit foundation dedicated to archaeology, music, film preservation, and historical archives. Like The J. Paul Getty Trust, it is an operating foundation. (This means it exists to create and support its own projects as well as providing grants for other organizations).	\$15,000 to \$2,000,000.	David Woodley Packard, President; Patrick Loughren, Director.	Many grantees are based in California, but the Institute has several longterm archaeology projects around the world. Several ICCM board members are familiar with David Packard.	1

Prince Claus Fund for Culture & Development	Amsterdam, Netherlands Supported by Dutch Ministry of Foreign Affairs and the Dutch Postcode Lottery	Mobility Fund: Supports the cross-cultural exchange of artists and cultural practitioners globally. Assists in the professional growth and networking abilities of those it supports: specifically young and emerging cultural practitioners who travel for the purposes of professional development, cooperation and exchange. Cultural Emergency Response Provides quick help to evacuate, stabilize or rescue cultural heritage under imminent threat of destruction or damaged by man-made disasters, natural disasters or conflict.	Not stated on website. In 2018 reported a total of 1.1 million Euros in grants.	Joumana El Zein Khoury, Director; Deborah Stolk, Coordinator Cultural Emergency Response.	Watch for "Open Calls" on website that encourage various applications. Support is primarily given to people and organizations in Latin America, Asia, Africa, Eastern Europe and the Caribbean. Proposals are only accepted if they refer to either concrete material needs, research missions for identifying cultural emergency relief actions, first aid training for salvaging culture or raising awareness on on-going crisis's damaging culture or heritage.	4
Headley Trust at the Sainsbury Family Charitable Trusts	London, England, United Kingdom	Sainsbury is a consortium of 17 individual trusts. Through the Headley Trust, international funding outside the United Kingdom includes: Conservation and recording of heritage (including ecclesiastical & vernacular architecture, archaeology and cultural artifacts), primarily in South Eastern Europe (Slovenia, Croatia, Albania, Greece, Macedonia, Bulgaria, Romania, Serbia, Montenegro, Bosnia-Herzegovina), as well as Ethiopia. Also has an Archaeological Acquisitions Fund that helps regional and local museums to buy artifacts.	7 overseas grants made in 2019 ranging from 1,000 to 25,000 British Pounds.	Rt.Hon.Sir Timothy Sainsbury and Lady Sainsbury head the Trusts, with other family members and staff.	On-line application notes the process is very competitive and only a small percentage of applicants are funded.	3
Samuel H. Kress Foundation	New York, NY United States	Two program areas relate to Stobi's priorities: History of Art and Art Conservation. Both support scholarly publications, exhibitions, research projects and technical studies that will enhance the appreciation and understanding of European art, archaeology and architecture from antiquity through the 19th century. Both support art historians and conservators to share professional expertise through exchange, conferences, symposia, workshops and other professional events.	\$5,000 to \$70,000 (some are multi-year grants at this level each year).	Max Marmor, President; Lisa Schermerhorn, Vice President.	On-line deadlines for letters of intent: January 15, April 1, and October 1. Only awarded to non-profit institutions with 501(c) 3 status, based in the United States, including supporting foundations of European institutions.	3
National Agency for Promotion and Support of Tourism	Skopje, North Macedonia	Annual calls for small tourism projects such as signage, guidebooks, brochures, development of souvenirs, etc. Larger projects support tourism infrastructure.	2019 annual budget was about 4.7 million Euros.		Annual calls, need to find out more about 2020 and 2021 priorities.	3

Stavros Niarchos Foundation	Athens, Greece; New York, NY; and Monaco	Funds arts and culture, educational exchange in Greece but also extensively around the world. Typical grants support archaeological exhibitions; international fellowships and residencies; children's cultural education; film festivals; theatres, general operating support for some grantees (including the World Monuments Fund) Has funded projects in the Balkans outside of Greece.	Not stated on website, but known to give large amounts of funding for major projects.	Andreas Dracopoulos, Vice President	Grant applications submitted online. Organizations outside of Greece reviewed by :SNF USA, Inc., Programs Department 645 Madison Avenue, Suite 2200, New York, NY 10022 U.S.A. OR FSN S.A.M. Programs Dept., George V 14 Avenue de Grande Bretagne MC 98000 Monaco.	2
TAIEX	Skopje, North Macedonia	Stands for Technical Assistance and Information Exchange. Through European Commission intended to build capacity of public officials of pre-accession countries. Pays for experts from EU countries to hold workshops, provide advisory services, share knowledge.	Complete costs of guests experts covered.		Requests must be made through Ministry of Culture.	3
Whiting Foundation	Brooklyn, NY, United States	Since 2016 supports "fight to save treasures of human civilization from threats both man-made and natural." Supports local stewards to preserve, document, disseminate. Focuses mainly on documentation, publications and digitization of archives.	Not stated on website, but probably \$7,000 to \$25,000 range.	Daniel Reid, Executive Director.	Partnered with the Prince Claus Fund on one project. Daniel Reid also colleague of J.M. Kaplan Fund.	4

An aerial, black-and-white photograph of an ancient archaeological site. The image shows a complex of stone structures, including walls, courtyards, and buildings. Some areas are filled with debris or rubble, while others appear more intact. The layout suggests a planned urban or institutional complex. The text "APPENDICES 9-12" is overlaid in the center of the image.

APPENDICES
9-12

APPENDIX 9: BUILDINGS (SUMMARY OF PHYSICAL CONDITIONS)

1. CASA ROMANA (late 1st BCE – late 3rd century CE) (Figs. 72a, b)

Description: Casa Romana occupies an area of around 348 sq. m. and is located in the northeast part of the city, near the Crna River. The building has not been completely excavated, only parts of four rooms and a corridor. The walls are built of rectangular sandstone blocks and slabs with fragmented bricks in the leveling courses, preserved to a height of 0.5 to 2.5 m. Room 2 and the corridor are decorated with frescoes and stucco. The floor in the southeast corner of Room 2 is made of sandstone and lime mortar.

Excavations: 1972-1974.

Previous conservation: 1970s: wall decoration was detached and applied to a portable carrier.

Condition assessment: very bad

Documentation: No project documentation; no project.

2. THE BUILDING WITH ARCHES (THE LIBRARY) (early 2nd – 4th century CE) (Figs. 73a-e)

Description: The Library at Stobi also known as the Building with Arches is a unique and impressive building from the Roman period. It is located at the eastern end of the city on the lowest terrace. The revealed part of the building is rectangular and occupies an area of around 1000 m² (43.09 x 24.32 m). It was built of bricks, lime mortar and local sandstone. The interior space is divided into a large hall formed by walls aligned with niches and two apsidal rooms separated by a corridor. The niches of the large hall are double arched, and they were arranged in two stories with an overall height of around 13 m. The maximum preserved height is around 5.5 m. The large hall had 68 arched segments, nine of which were passages, and at least 52 were niches for the shelves with scrolls. The size and the number of the niches suggest that this is the second largest library by capacity among the known libraries of the Roman Empire. The interior of the building is impressive with its elaborate marble decoration, sectile pavement and statues of gilded marble. The Library was damaged by an earthquake and destroyed by a fire around the year 300 CE. The remains of the lower story were buried with the renovation activities while the upper story was repaired. A mosaic was placed in the room to the west of the large hall which was later cut by the inner eastern fortification wall. The Library continued to exist until the 4th century CE when it was abandoned and the area was used for intramural burial.

Excavations: 1972-1974; 1981-1983; 2003-2010.

Previous conservation: 2003-2010: Preventive conservation has been done on the four arches of the north wall. The mosaic from the second phase of the building was detached, conserved and put in storage. There were minor interventions such as application of mortar on top of the edges of the in situ preserved architectural decoration. In 2009 and 2010, preventive conservation was carried out on the sectile floors in the apsidal rooms.

Condition assessment: bad.

The architectural remains and small part of the marble wall decoration which have been preserved in situ are in a very bad state due to continuous disintegration of building materials (mortar, bricks and the sandstone). Marble slabs, marble reliefs, pilasters with bases and capitals, frescoes and stucco have been put in storage and are in a very bad condition and prone to disintegration. The sectile pavement on the floors in the two apsidal rooms is in a good condition due to preventive treatment and maintenance.

Documentation: Conservation project for the architectural remains is prepared. Conservation will start in 2021.

3. THE TEMPLE OF ISIS (early 2nd – early 5th century CE) (Figs. 74a-d)

Description: The Temple of Isis was discovered in 2008 in the southeast part of the lower terrace. The complex consists of a Roman temple dedicated to the Egyptian deities Isis and Serapis with a

cella and pronaos set on a high podium, two underground vaulted rooms and 11 steps, surrounded by numerous rooms from the east and south sides. The temple is built of local sandstone and lime mortar. Marble and sandstone blocks were used for the crepidoma, stairs and the podium. The walls of the numerous rooms of the surrounding complex were built of local sandstone, bricks and lime mortar, while the floors are mainly earthen, except in the open courtyard south of the temple where the floor is paved with sandstone slabs and in the southeast room where remains of mosaic were discovered recently. In the late 4th or early 5th century, the entire upper construction of the temple, including the walls of the cella, the pediment and the entablature were dismantled. The marble elements of the entablature were found scattered around or reused in later buildings. The surrounding rooms were re-adapted and existed until the late 6th century. In the medieval period walls built of sandstone and mud were erected above the remains of the temple and the surrounding complex. There is a complex vertical stratigraphy around the temple with walls from different periods, made of sandstone, lime mortar and mud.

Excavations: 2008-2012. The excavations of the surrounding complex are ongoing.

Previous conservation: The temple was conserved in 2012. There are no conservation activities in the surrounding complex.

Condition assessment: good for the temple; bad for the surrounding complex.

The sandstone slabs on the podium of the temple are in bad condition. Humidity in the subterranean rooms is affecting the plaster on the walls. The exposed walls on the whole surrounding complex require conservation.

Documentation: Partial project documentation for the surrounding complex; no project.

4. THE THEATRE (late 1st – late 4th century CE) (Figs. 75a-e)

Description: The Theatre at Stobi is the largest building at the site and located in the south end of the city with an overall area of 4926 sq. m. Its architectural design reveals that it was used for a variety of performances that included both theatre shows and gladiator and venator spectacles. Six hundred inscriptions of names of the distinguished Stobean families are registered on the marble seats indicating that the theatre was a venue that housed the city assembly. The structure consists of a larger than a semi-circle auditorium, an orchestra surrounded by a high podium and a wide scene building with rectilinear scaenae frons with five entrances.

The auditorium rests on a complex substructure of radial and circular walls built of sandstone, lime mortar and bricks connected by vaults, preserved in height from 4 to 6 m. The seats were made of marble blocks organized in rows, grouped in two segments - the ima and the summa cavea. The lower segment (ima cavea) had a total number of 18 rows, separated from the upper segment (summa cavea) by a pathway (diazoma) and a high podium. A platform for a box of honor was located in the middle of the ima cavea, right above the exit of the central radial corridor to the orchestra. The summa cavea had between 14 and 16 rows of seats. The seats in ima cavea are cut by eight flights of stairs that form seven vertical groups of seats called *cunei*. The number of *cunei* in the upper segment was probably double. The diameter of the auditorium is 90 m, while the height of the two segments was around 20 m from the orchestra (10 m preserved). The overall capacity of the theatre was 7600 visitors. Only 15 rows of seats are preserved in situ in the west half of the ima cavea.

The walls of the scene building are made of sandstone, lime mortar and bricks. They form five rooms - *choregia*, as part of the so-called post scaenium. The three central rooms occupy a smaller area of 45 sq. m., while the rooms at both ends occupy around 88 sq. m. The central room of the scene building functioned as a sanctuary to Nemesis, and an inscription devoted to *Ultrix Augusta* was discovered inside. The scaenae frons had polychrome decoration on two levels formed by elements of pink and white marble. In the late 3rd century, the theatre was damaged by an earthquake, followed by repairs in 326 CE. As part of the same action, the orchestra was completely converted into an arena when a wall was constructed on top of the podium on the ima cavea side, and the *parodoi* were sealed with gates on the orchestra side. These activities mark the third phase of the theatre. The building went out of use in the last quarter of the 4th century, after which it mainly served as a stone quarry for the later period buildings. During Late Antiquity houses were built on top, using the radial and circular walls, as well as the corridors. Most of the marble seats were reused in the new city

wall and in the early Christian basilicas. Remains of Medieval occupation (11th–12th century) have been documented in the central circular corridor. The numerous architectural decorations (pieces of columns, architrave etc.) and the marble seats discovered during the excavations are located on the marble field in front of the building.

Excavations: 1920s; 1960s, 1970s, 1996–1999, 2009–2019 and are still ongoing.

Previous conservation: The scene building was partially conserved in 1996 and in 1998 with new mortar (ratio 1:2:6 -1:1:4 cement, lime and sand). Steel rail tracks were used to support the marble block with the arch above the entrance from the west parodos into the west radial corridor. The damaged parts of the walls and the vault in the west corridor were covered with cement. Minor interventions were applied to the vault of the central circular corridor at the joint with the west radial corridor. The arch in circular wall III at this location was restored, while the top side of the vaults was covered with a protective layer of cement.

With the Project for conservation, restoration and reconstruction of the eastern half of the ima cavea developed in 2013, conservation and restoration were carried out on the revealed elements of the substructure, reconstruction of the beddings for the marble seats and the diazoma, the podium of summa cavea and the eastern analemma. The conservation included new mortar with 1:1:3 ratio (white cement, lime and sand). The vaults and the arches were restored with handmade bricks and tufa from the site for part of the vault above the west room. The slanted segment of the vault above the central radial corridor was injected and its top surface was covered by carbon fiber wrap in order to preserve its authentic form and improve its load capacity for the future reconstruction of the marble seats. In 2015, NI Stobi prepared a Project proposal for conservation and restoration of the scene building which is ongoing. The Project proposal for conservation and restoration of the substructure in the eastern half of the summa cavea was prepared in 2019/2020 and is ongoing.

Condition assessment: bad for the parts which are not conserved.

The walls, vaults and arches in the eastern half of summa cavea are not conserved and they are in bad shape. The substructure of the western half of the auditorium has not been exposed, while the few small areas excavated in the past are in a very bad condition. The marble blocks from the podium, the seats and the analemata have never been conserved and it is evident that they are cracked in many places, exposed to biodeterioration by moss and grass, darkened by pollution and weathering, and some of the blocks have small chips falling off.

The conservation of the scene building is ongoing. The marble elements of the podium of the scene building, the stairs and the door jambs are included in the ongoing Project. The other marble elements require cleaning and consolidation and partial anastylosis where possible.

Documentation: Existing project for east half of the ima and summa cavea and the scene building. There are no projects for the west half of the theatre nor anastylosis of the scaenae frons.

5. THE EPSICOPAL BASILICAS AND THE BAPTISTERY (late 4th – late 6th century) (Figs. 76a–k)

Description: The Episcopal Basilica covers an area of 2.420 sq. m. It is located in the southwestern part of the city, between the Theatre and Via Sacra. There are two basilicas one on top of the other: the Early Episcopal Basilica with two building phases and the Large Episcopal Basilica also with two building phases, and the Baptistery, all dated between the late 4th and the 6th century CE.

The **Early Episcopal Basilica**, built in the late 4th century, is a three-aisle church, without a narthex measuring 29.40 m in the first phase. In the second phase the basilica was extended towards east with a new apse and total length of 34.35 m. The walls preserved up to 3.30 m (west) are built of stone and lime mortar and mud bricks in the upper parts. The central nave was paved with a mosaic floor in the opus tessellatum with a total surface of 185.50 sq. m. and the floors in the side aisles with pink mortar. The walls were decorated with wall paintings.

The **Large Episcopal Basilica** (The basilica of Bishop Philip/Basilica on the Terrace) was constructed towards the end of the 5th century. Its foundations are placed on the level of the early church, but its floor is erected on an artificial terrace 4.5 m high. The new basilica is a three-aisled church with dimensions 53 x 64 m, with galleries on the upper floor, a narthex and an atrium with three annexes on the north side. The stairs from the narthex lead to four rooms on the south side and towards the

Baptistery. It was richly decorated with marble sculpture, figural and gilded capitals, frescoes, and wall and floor mosaics. The walls were made of stone and lime mortar, except on the north wall where there are rows of tiles bound with pink mortar and crushed tiles. In the apsidal wall and on the stylobate between the aisles, the seats from the theatre were re-used. The walls are preserved from 0.30 to 5 m in height (including the foundation of the stylobate walls). The floor in the atrium was paved with sandstone slabs; in the narthex and south aisle with mosaics in opus tessellatum; the nave was paved with sectile and schist (not preserved); the floors in other parts are earthen. The marble elements of the ambo and both phases of the presbytery, along with the floor in the nave and the clergy seats in the southeast were removed due to excavations of the Early church. Part of the marble elements from the church has been deposited in and around the basilica.

The **Baptistery**, discovered in 1971 on the south side of the basilica, co-existed with the Large Episcopal Basilica. The building is quatrefoil measuring 8.80 x 9.70 m. It was built of stones and lime mortar with four semicircular niches in the corners. In the middle of the room is the circular baptismal pool made of bricks and hydraulic mortar. The parapet wall of the pool coated with white marble slabs is 0.96 m wide and rises 0.64 m above the floor. The floor is decorated with mosaics in opus tessellatum and the walls were covered with frescoes. In the last phase, a large marble kantharos made of pentelic marble used for baptism was placed in the southwest staircase of the baptismal pool. A baldachin which stood over twelve marble columns (two series of six columns) is preserved.

Excavations: 1917-1934; 1970-1978; 1981-1994; 2004-2005; 2010, 2012, 2016-2017, 2019.

Previous conservation: 1930-1940: preventive protection (cement caps on the wall in the atrium) and preventive conservation of the mosaic in the narthex, covered with tar paper and sand. The walls of the Large Episcopal Basilica and the Baptistery were conserved and partially restored in the 1980s using cement. The wall paintings from the Early Basilica were conserved in 2012, except for those found in 2019. The mosaics in the nave of the Early Basilica, in the narthex and south aisle of the Large Basilica and in the Baptistery were conserved between 2012 and 2019. Conservation research was performed in 2010-2014 on the bedding and pigments of the frescoes in the Episcopal Basilica and the Baptistery, on the bedding of the mosaics in the Early Episcopal Basilica – nave, Large Episcopal Basilica – narthex and south aisle, and in the Baptistery. In 1978/1981-86 a roof over the basilica and the Baptistery was constructed and in 2019-2020 a new roof over the Baptistery.

Condition assessment: bad for the non-conserved parts which are not under a shelter

Early Episcopal Basilica: relatively good condition, except the south wall (there is no shelter over the south aisle); the mosaic in the central nave is in good condition; the floor in the south aisle is in bad condition; there is no shelter over the area. Wall paintings are in good condition but stored in inappropriate facilities.

Large Episcopal Basilica: the walls are in good condition, except for those in the south annexes. The preserved floors are in relatively good condition, except for the floors in the south annexes and the mosaic in the narthex. Marble architectural elements which were glued in the past using inappropriate materials require re-conservation, cleaning and consolidation. The shelter is in very bad shape.

Baptistery: the walls, mosaic floor and the marble elements in the Baptistery are conserved and restored and are in good condition; minor intervention is necessary on the lower (original) parts of the walls where deteriorated sandstone should be replaced; the walls of the baptismal pool are in bad condition and conservation is necessary. The frescoes from the Baptistery are consolidated and stored in an inappropriate facility.

Documentation: Partial documentation, no projects for conservation. A project proposal for a new protective roof over the Episcopal Basilica and the Baptistery and visitors path was adopted in 2016.

6. THE EPISCOPAL RESIDENCE (late 4th - 6th century CE) (Figs. 77a-c)

Description: The building is on the north side of the Episcopal Basilica with a total surface of 1087 sq. m. Two major construction phases are visible. The 4th-5th century phase consists of a vestibule, colonnaded corridor with semicircular exedra, four rooms and an apsidal triclinium paved with sectile, and two lateral rooms. The floor levels in the vestibule and in the corridor are much lower

than the level of the Via Principalis Superior. The walls are made of sandstone and lime mortar, preserved to a maximum height of 1 m, while in the apsidal triclinium there are bricks in the upper zone of the walls. The second construction phase took place during the 6th century and is visible in the southwest part of the building where there is a room with a semicircular apse and unexcavated rooms on the eastern side, built of stones and mud. The floors in this part of the building are almost on the same level with the floor of the Episcopal Basilica. The building is identified as a Christian oratory in the 4th century and a bishop's residence later.

Excavations: 1934; 1940; 2000-2001; 2005-2006.

Previous conservation: Partial conservation in the east part using cement-based mortar. The second conservation activities were carried out in 2004 (2005-2006) when breccia was added into the binder, and as a consequence, the mortar has a different color.

Condition assessment: very bad for the non-conserved parts.

Documentation: No project documentation, no projects for conservation.

7. THE CASINO (4th – 6th century) (Figs. 78a-e)

Description: The building named Casino is located to the north of the Theatre. It occupies an area of 1195 m². The west half of the house consists of an inner peristyle court with rectangular pool (nymphaion) with multiple rooms arranged around the corridors, triclinium with octagonal fountain and bath complex with a latrine on the east. The walls are built of sandstone, bricks and lime mortar. The floor in the court is paved with sandstone slabs, and mosaic pavement is partially preserved in the corridors, northwest room and in the triclinium. The building was named Casino, but the elaborate mosaic decoration, private thermal complex, fresco decoration fragments, a few exceptionally valuable finds and the marble paved pathway on the west side that enables communication with the Episcopal Basilica, suggest that this building was actually the residence of the bishops of Stobi in the 6th century. The building dates from the 4th century and during the 6th century most of the rooms were rearranged.

Excavations: 1939-1940, 1971; 1981; 2005-2006; 2009.

Previous conservation: The walls were partially conserved in 1982 and between 2001 and 2005 using cement-based mortar. Preventive conservation was performed on the mosaic floors after their discovery and again in 2016-2017. A temporary roof was placed above the thermal part in 2012.

Condition assessment: bad for the part which is not conserved.

The walls and floors in the western part of the house including the nymphaion and the bath complex are in bad condition. Marble revetment on the fountain in the triclinium and on some of the walls require re-conservation.

Documentation: No project documentation, no project for conservation/re-conservation.

8. THE RESIDENTIAL AND COMMERCIAL QUARTER (late 5th – late 6th century CE) (Figs. 79a-e)

Description: The Residential and Commercial Quarter of Stobi dates to the final phase of urban living in the city from the second half of the 6th century. It covers an area of approximately 7500 sq. m. between the Northwest fortification wall and Via Sacra. The Residential and Commercial Quarter includes the Semicircular Court with the shops and workshops behind, shops along Via Sacra, as well as workshops along the west side of Via Principalis Superior.

The whole area of the upper terrace under consideration is divided in two parts by the newly discovered main street, 7-8 m wide, which starts at Via Sacra and leads north behind the Semicircular Court. Narrow streets which run from the main street in an east - west direction towards the Northwest fortification wall separate four insulae. A large number of separate buildings made of sandstone and mud with multiple construction phases were completely or partially excavated in 2009-2010 within the insulae. Some of the buildings have visible foundations made of stones and mortar from the earlier phase. The floors are earthen, except for a few yards and a few rooms which are paved with sandstone slabs. Also, there are walls that most likely belong to the latest phase of encroachment, made of smaller stones with mud, as well as slanted tegulae/bricks set in a fishbone-like masonry.

In a significant number of rooms stairs have been discovered, likely leading to a second floor. The walls are preserved usually to a height between 30 and 80 cm. The architectural elements and decorations in this part of the city are usually reused parts of older buildings, grave stelae, etc.

The only house which is completely uncovered is the House with Triclinium, located north of the Semicircular Court. It consists of a large, paved courtyard surrounded by several rooms connected through corridors. To the south of the courtyard there is a large triclinium paved with bricks. On the west side of the triclinium a large storage room was uncovered, while on the east side, a few rooms which were used as kitchen facilities. The building has walls that were made of stones and mortar in the earlier phase. Walls made of stones and mud were also discovered, belonging to the latest phase.

Excavations: 1932, 1933, 2003 (shops on Via Sacra and Semicircular Court); 2009-2010; 2012-2013.

Previous conservation: Partial conservation on the west rooms of the Semicircular Court done in the 1950s (?) and in 2003. The conservation project for architectural remains of the whole building started in 2018 and is almost completed. The shops next to Porta Heraclea were conserved in 2003. The House with Triclinium was completely conserved in 2012. The cement-based mortar was used in conservation.

Condition assessment: bad, except for conserved parts.

Documentation: Except for the Semicircular Court and workshops on the convergence of Via Sacra and Via Principalis Superior, there is no project documentation nor any project for conservation for the remainder of the complex.

9. DOMUS FULLONICA (3rd – 6th century CE) (Figs. 80a-d)

Description: The textile workshop is one of the residential buildings located on the highest terrace along Via Principalis Superior, covering an area of 1111 sq. m. It consists of an open courtyard surrounded by 32 rooms, including two rooms identified as triclinia. In one of the rooms adjacent to the large triclinium, remains of a hypocaust system were discovered. The floors in most of the rooms are made of beaten earth. The exception are the remains of pavement with stone slabs in the triclinium, the peristyle and Room 23 where a hypocaust system was uncovered. The walls were built of stones and mortar and mud bricks in the upper zones. The large triclinium is the exception, where there are bricks in the masonry of the apsidal wall. The building existed for a long time. Different phases date from the 3rd to the late 6th century CE.

Excavations: 1925-1926; 1934-1936; 1970-1976.

Previous conservation: 1980; 1986. Re-conservation was carried out in 2004-2005 using cement-based mortar.

Condition assessment: good, except for the floors and hypocaust in Room 23.

Documentation: No project documentation, no project for re-conservation.

10. THE PRISON (4th - 6th century CE) (Figs. 81a-b, 82)

Description: The Prison is located on the east side along the street Via Principalis Superior, between the Theodosian Palace and the Episcopal Residence. The revealed remains occupy an area of around 400 sq. m. The name was given due to a discovery of a skeleton in one of the subterranean chambers. The chronology and the purpose of the building are not precisely defined. It consists of a large rectangular room with walls made of stone and mud on the west side and two rectangular subterranean chambers with barrel vaults to the east. Their walls are built of sandstone and yellow lime stones bonded with lime mortar. The entrance in the first (west) subterranean chamber is preserved with the lintel, while the vault is partially collapsed. The second (east) subterranean chamber is narrower and its vault is partially collapsed as well. The height of the subterranean chambers varies up to 2 m due to the unexcavated levels. The superstructure above the rooms is partially preserved with part of the floor level.

Excavations: 1920s.

Previous conservation: no.

Condition assessment: very bad

Documentation: No project documentation, no project.

11. THE THEODOSIAN PALACE (4th – 6th century CE) (Figs. 81a-b, 83a-c)

Description: The Theodosian Palace occupies an area of 1330 sq. m. on the middle terrace at Stobi, between Via Principalis Superior, Via Principalis Inferior and Via Theodosia. The building got its name from earlier researchers at Stobi who considered that the Emperor Theodosius I, while visiting Stobi, stayed in the most luxurious residential quarters. The residence consists of a large peristyle court with corridors and a large fountain/nymphaion, 11 rooms around the courtyard including a large triclinium to the south and a vestibule with corridors on the east. The floors in the north and west corridors are covered with mosaic floors in opus tessellatum, the court in opus segmentatum, the triclinium is covered with sectile, while the four smaller apsidal rooms on the northwest side are covered with mosaics in opus tessellatum and opus sectile. The walls are built of sandstone and lime mortar. Most of the architectural marble is preserved in fragments and left in the courtyard.

Excavations: 1920s, 1927-1929; test trenches in 1970s; 2014-2015.

Previous conservation: In the 1920s the walls were protected with cement caps. In 2005-2006 conservation was carried out on the eastern part of the house, the courtyard and north wall using cement-based mortar. Preventive conservation was carried out on the mosaic floors in the 1970s. The mosaics at the east end of the north corridor and the one in Room 2 were placed on aluminum honeycomb carriers in 2012.

Condition assessment: very bad for the non-conserved part. Some of the walls are collapsing, the mosaics in the western rooms are in bad shape.

Documentation: Partial project documentation, no project.

12. THE HOUSE OF PARTHENIUS (4th - 6th century CE) (Figs. 81a-b, 84a-b)

Description: The southeastern part of the Theodosian Palace is considered a separate house, called House of Parthenius. Both houses share the same walls, but do not have direct communication. The House of Parthenius is the smallest of all the residences discovered so far, covering an area of 500 m². The house has six rooms and an open courtyard with two porticos and a rectangular pool/nymphaion, surrounded by rooms. The northeast apsidal room likely served as an exedra, with a mosaic floor made in opus sectile. On the southeast side of the peristyle there is a large rectangular room with a mosaic floor in opus tessellatum. Two-thirds of the floor in the room is covered in mosaic in opus sectile, and one-third is paved with stone slabs, 40 cm higher than the mosaic floor. On the south side of the building, there is a long corridor with two rooms. The walls are made of sandstone and lime or pink mortar (nymphaion) and most of the marble architectural elements are preserved in the courtyard.

Excavations: 1930s.

Previous conservation: partial conservation in 2003 using cement-based mortar, except in the courtyard, exedra and the corridor on the northwest side. In situ conservation on the mosaic floor is ongoing.

Condition assessment: very bad for the non-conserved part. The west part with the nymphaion is in very bad shape.

Documentation: Partial project documentation, no project.

13. THE HOUSE OF PERISTERIA (4th – 6th century CE) (Figs. 85a-e)

Description: The second largest residential building in Stobi is located in the central area of the middle terrace. The name derives from the inscription in the mosaic floor, discovered in one of the triclinia. The building covers 2596 sq. m. and consists of 49 rooms, including two triclinia, a private bath of five rooms and a peristyle courtyard with rectangular pool/nymphaion. Kitchen and storage rooms are in the west half of the house. A few stairways were discovered throughout the house,

suggesting that the house had two stories. In rooms 1 (peristyle), 2 (porticos), 4 (west triclinium), 5, 6, 7, 8, 9, 11, 12, 13 and 14, the floors are paved with stone slabs. The east triclinium (Room 3) is paved with a mosaic floor. Almost all walls that belong to this complex building were built of sandstone and lime mortar, while in the walls in the east triclinium and in the bath, bricks are used in the masonry. Parts of the architectural elements and decorations are located in the house.

Excavations: 1933-1934; 1965-1966, 1971; 2001; 2005; 2011.

Previous conservation: Partial conservation in 1975-1976, 1983, 1987, 1990, 2002-2005 using cement based mortar. The mosaic and the fountain in the east triclinium were conserved in 2012. The mosaic was placed on reinforced cement-based bedding.

Documentation: No project documentation, no project.

Condition assessment: bad for the un-conserved part. The west and northwest part of the house including the thermal complex are in bad shape. The nymphaion in the peristyle and the mortar on the walls is slowly deteriorating. The stone slab floor pavement in the west triclinium has large cracks.

14. THE CITY FOUNTAIN (4th – 6th century CE) (Fig. 86)

Description: It occupies an area of 25.17 m² and it is located at the northeast corner of the House of Peristeria. It was built of re-used marble elements from older buildings. The water was brought by a covered channel under the street Via Principalis Inferior which also supplied the Large Bath. Before it reached the basins of the fountain, the water was accumulated in a long reservoir from where it flowed through the spouts.

Excavations: 1968.

Previous conservation: 1968. The basin was reconstructed with cement mortar and thick iron grid. The reservoir was reconstructed with sandstone slabs, cement mortar and iron spouts.

Condition assessment: The cement basin and the bottom of the reservoir are deteriorating.

Documentation: No project documentation, no project.

15. THE LARGE BATH (4th - 6th century CE) (Figs. 87a-d)

Description: It occupies an area of 936.4 m² in the central part of the site, at the intersection of the streets Via Principalis Inferior and Via Axia, near the main entrance. The first room is an apodyterium with stone benches along the walls. A frigidarium was built in the same rectangular space as the apodyterium. The thermal part with a hypocaust heating system with five fireplaces continues towards the southeast. The larger part belongs to the tepidarium and the smaller to the caldarium which has several bathtubs. To the northeast, there are a court and a small latrine, while to the east there is one more segment of the bath with semi-circular pools, considered to be another frigidarium. The walls of the building were built of sandstone, bricks and lime mortar. The thermal part is mainly built of bricks, stones and marble slabs, lime and hydraulic mortar. The floor in the apodyterium and in the latrine are paved with sandstone slabs and lime mortar.

Excavations: 1931; 1933; 1963, 1965; 1970.

Previous conservation: 1965; 1970.

Condition assessment: bad

Although there were conservation and restoration activities in the past, there are weakened, damaged or disintegrated parts (mortar joints have fallen off in certain places, disintegrated sandstone and bricks and lichens).

Documentation: No project documentation for re-conservation, no project.

16. THE HOUSE OF POLYCHARMOS (2nd – mid 5th century CE) (Figs. 88a-e)

Description: The House of Polycharmos is located on the corner of Via Principalis Inferior and Via Axia, covering an area of 807 sq. m. It consists of 16 rooms in a rectangular ground plan with a central

peristyle with a nymphaeum built of sandstones and lime mortar. The triclinium and several smaller rooms are located to the east. The room with an irregular square shape to the south of the peristyle has been identified as an exedra. The floors are paved with sandstone slabs, mosaic in the corridors of the peristyle and mosaic in the triclinium. The house was a residential building in the ownership of Tiberius Claudius Polycharmos - the father of the Jewish community and his family from the 2nd to the early 5th century CE. Parts of the architectural marble elements and decorations are still in the house.

Excavations: 1930s.

Previous conservation: 1963, 1968, 1991 using cement-based mortar.

Condition assessment: good

The walls are covered with lichens, and the sandstone has deteriorated in places.

Documentation: No project documentation for re-conservation, no project.

17. THE CENTRAL (SYNAGOGUE) BASILICA (mid-5th – 6th century CE) (Figs. 89a-c)

Description: This building got its name because of the remains of an ancient Synagogue discovered below the Central Basilica.

Central Basilica: The Central (Synagogue) Basilica is adjacent to the Palace of Polycharmos to the north covering an area of 670 sq. m. The basilica has three aisles with an apse to the east, a narthex and an atrium to the west. The atrium consists of a few asymmetrical rooms and a peristyle with a fountain to the north. The narthex and the aisles are paved with bricks, while the nave was paved with stone slabs (not preserved). The nave is separated from the aisles with a colonnade of five columns of which only the bases are preserved. A combination of stone slabs and bricks was used for the paving of the rooms of the peristyle and the porticos of the atrium, while all of the other rooms have beaten earth floors.

Synagogue (2nd- mid-5th century CE): The archaeological excavations below the floor level of the Central Basilica have revealed the remains of two building phases of the Synagogue. The remains of Synagogue II are only partially preserved, while the most important room where the believers gathered is below the nave and partially under the northern aisle of the Central Basilica. On the eastern side of the room there are remains of the bimah. The floor of this room is covered in mosaics which have been removed and are exhibited near the Old Train Station and guard house.

Excavations: 1931; 1963-1965; 1970-1974.

Previous conservation: The Central Basilica was completely restored in 1970-1971, 1984-1991 and 1994. The remains of the Synagogue were only preventively treated between 1968 and 1970, when the mosaic floor was removed, placed on concrete carriers and displayed near the Old Train Station, except for a few segments which are in storage. Preventive conservation was carried out on the exhibited mosaic in 2010.

Condition assessment: good for the basilica; bad for the remains of the Synagogue.

The basilica is in good condition, except for the brick pavement in the narthex and aisles.

The visible walls of the Synagogue have not been treated and are in a very bad shape. The mosaic incurred significant damages during the conservation activities when they were removed from the Synagogue and placed on concrete carriers.

Documentation: No project documentation for re-conservation, no project.

18. SMALL BATH (4th – 6th century CE) (Figs. 91a-c)

Description: The Small Bath has nine rooms and occupies an area of 296 sq. m. The larger room in the north part is defined as an apodyterium. A semicircular room to the west is the frigidarium. To the south there are three aligned apsidal rooms, the first of which is a tepidarium with a small pool and the other two were likely the caldarium with a hypocaust system under the floor. The walls were built of sandstone, bricks and lime mortar. The floors in the apodyterium, the latrine, and the two rooms at the east are paved with sandstone slabs. The tepidarium, frigidarium and the rooms

at the west end have reconstructed schist floors. The remaining two apsidal rooms which had a hypocaust system have preserved the lower floor made of lime mortar and part of the suspensure which supported the upper floor.

Excavations: 1931, 1962-1963.

Previous conservation: 1968 using cement-based mortar.

Condition assessment: good

Some parts are weakened, damaged or disintegrated (mortar joints have fallen off in certain places, disintegrated sandstone and bricks and lichens).

Documentation: No project documentation for re-conservation, no project.

19. THE CIVIL BASILICA (5th – 6th century CE) (Figs. 92a-c)

Description: The building covers an area of 566 sq. m. and is located between the North Basilica and Central (Synagogue) Basilica. It has simple architecture consisting of three aisles with an apse on the eastern side of the nave. The walls are built of local sandstone and lime mortar. The excavations in this area uncovered remains of four different buildings, with multiple phases of construction. No remains of the floors or decorative elements such as mosaics, architectural decoration or wall paintings were discovered. The function of the building has not been established. It is assumed that it is a civil basilica.

Excavations: 1937; 1956-1957; 2001, 2004-2005.

Previous conservation: 2004 and 2005 using cement-based mortar.

Condition assessment: good for the major part of the building; bad for the non-conserved walls on the west rooms and earlier phases.

Documentation: No project documentation for re-conservation, no project.

20. THE NORTH BASILICA (5th – 6th century CE) (Figs. 92a, 93a-d)

Description: The North Basilica covers an area of 743 sq. m. and is located to the north of the Civil Basilica. The basilica has three aisles and an apse, a narthex with side annexes, an atrium and a quatrefoil baptistery on the northern side. The walls of the basilica were built of sandstone and lime mortar, and bricks in some places. The nave most likely had a mosaic floor (not preserved); the south aisle, the side annexes and the narthex were paved with bricks; the north aisle, atrium and the southern annex were paved with sandstone slabs; the baptistery was paved with a combination of bricks and fragments of marble slabs. In the northern annex there is a partially preserved mosaic floor in opus tessellatum. The area of the North Basilica during the Middle Ages was used for burial. Graves dating from the 9th to the 12th centuries and a grave from the 14th century have been discovered.

Excavations: 1937; 1955; 1959; 1975; 1982.

Previous conservation: 1955; 1959; 2004/5 using cement-based mortar.

Condition assessment: good for the conserved part, except for the baptistery, the atrium and marble elements.

Documentation: No project documentation for re-conservation, no project.

21. FORTIFICATION WALLS (5th – 6th century CE) (Figs. 94a-f, see also Fig. 4 - the general ground plan)

Description: The early Roman fortification wall (1st – 3rd century CE) was uncovered in small part along Crna River, and it is not visible today. The Late Antique fortification wall was discovered along the northwest, southwest and south sides. The inner east wall was partially uncovered. At the northwest side the outer face and the crown of the wall are exposed along its complete length of

318.3 m, including five towers. On the southwest and south sides it is exposed in length of 372 m, with six towers and two gates: main city gate Porta Heraclea and a not fully excavated new gate is in its southern part. The east inner fortification wall has been exposed in two locations: over the Building with Arches (Library) with length of 35 m and one square tower and at the southeast end uncovered in length of 64.8 m and one square tower at the joint with the south defensive wall.

The width of the wall varies between 1.85 to 2.4 m, except in certain places where the wall is double and is 5.4 m wide. The preserved height is from 0.25 m in some places, up to 4-5 m. There are a few construction phases and repairs using various building materials: large marble or sandstone blocks in the lower rows and especially on the corners of the towers, and rectangular sandstone and lime mortar. The second phase is characterized by smaller sandstone and low-quality lime mortar and mud. Slight differences are noticed in the inner east fortification, where marble seats and blocks of the theatre were reused, while in the upper parts there are rows of bricks.

The main city gate - Porta Heraclea is located in the southwest part of the defensive wall. The gate is a dipylon i.e. a double gate with two thresholds at a distance of almost 9 m and a 3.25 m wide inner gate. On the east and the west side it is closed with perpendicular walls. On the outer side, two parallel walls have been discovered, and some of the scholars interpret them as remains of the proteichisma. Another gate built with reused theatre seats in the lower zone is located almost at the end of the southeast part of the wall. The gate was sealed in the 6th century.

Excavations: 1972; 1976 (Early Roman wall along Crna River, today not visible); 1930; 1972 (Porta Heraclea); 1992 (southwest wall and six towers); 2010 (southeast wall and one tower); 2009-2010 (northwest wall and five towers); 1972; 1973; 1974-1977 (inner east wall and one tower - part above the Building with Arches); 2008 (the south part).

Previous conservation: 1976 (part over the Building with Arches and one tower); 2001 (southwest wall with six towers) using cement-based mortar.

Documentation: Complete conservation project exists for the northwest wall and five towers; for the remaining part there is no documentation, no project.

Condition assessment: bad for the non-conserved parts

BUILDINGS OUTSIDE OF THE CITY WALLS

22. THE CEMETERY BASILICA (5th – 6th century CE) (Fig. 95a-d, see also Fig. 4 - the general ground plan)

Description: The Cemetery Basilica is located outside the city wall, around 250 m southwest from the Porta Heraclea, at the Western cemetery. The basilica occupies an area of 580 sq. m. and it has three aisles, a double apse on the east and a narthex on the west side. Two annexes are attached on both sides of the narthex. A crypt with three arcosolia approachable by a stairway is attached to the east of the south annexes. The entrance is not documented; however, the church was probably entered by a colonnaded porch to the east of the north annexes. Only the nave had a mosaic floor, which is not preserved today. Around 50 tombs were excavated in and around the church, of which 36 were found under the floor. Ten of the tombs have vaulted construction of bricks with plastered and painted walls, while the crypt is covered by a cross vault made of bricks. The other tombs are cysts made of sandstone slabs.

Excavations: 1918; 1924; 1936; 1968.

Previous conservation: Preventive conservation of the cross vault above the crypt in 1968.

Condition assessment: very bad

Documentation: No project documentation for re-conservation, no project.

23. BASILICA EXTRA MUROS (5th – 6th century CE) (Fig. 96a-c, see also Fig. 4 - the general ground plan of the site)

Description: The Basilica Extra Muros is located in the immediate vicinity of the southwestern fortification wall. The building covers an area of 2250 sq. m. and has three aisles, a double apse to the east, a narthex with side annexes to the west and a baptistery to the south. The walls were built with sandstone and lime mortar, while the inner apse was built with stones and mud. The floors in

the side aisles of the basilica are made of beaten earth, while the floor in the narthex was covered with stone slabs, the nave and the presbyterium have mosaic floors, and the walls were decorated with frescoes of which only small fragments have survived. Parts of architectural elements and decorations have been placed next to the building. In the period from the 9th to the 11th century, the remains of the basilica were reused in the construction of residential and other non-religious buildings. In the altar area, a small chapel was raised around which burials were performed.

Excavations: 1992; 2002-2004.

Previous conservation: 2003; 2005 using cement-based mortar. Preventive conservation was carried out on the mosaic floors, while the remains of the fresco decoration were removed, placed on new carriers and stored in Depot 4.

Condition assessment: good, except for the baptismal pool and eastern half of the mosaic in the nave.

Documentation: No project documentation for re-conservation, no project.

24. THE OTTOMAN-ERA BRIDGE (Fig. 97, see also Fig. 4 - the general ground plan of the site)

Foundations of the stone and mortar pillars for the Ottoman Bridge are visible in the Crna River. They have never received any treatment.

APPENDIX 10: STORAGE FACILITIES (SUMMARY OF PHYSICAL CONDITIONS)

1. OLD TRAIN STATION (Figs. 98-99)

Description: The station was built in the early 20th century and was used for the maintenance of the railway line Skopje - Thessaloniki. In Macedonian Railroads there is no documentation for its construction. The building is 9.16 x 16.74 m, with an altitude of +3.75 and a height of the ridge at 7.52 m, covering an area of 153.34 sq. m. on the ground level, and as much in the attic. It is a rectangular building with two rooms, one smaller than the other, with a height up to 3 m, built with massive stone walls with a wooden roof construction covered with roof tiles, under which an attic was created. The construction between the floors was made with wooden beams covered with canes and steel bars. The floor in the larger room is made of concrete, without a finishing layer, while in the smaller room it is wooden. The façade was covered with mortar multiple times. In the smaller room in 1971 a museum exhibition was created with 5 showcases and free-standing sculptures, while using the larger room to store material from the excavations. The exhibition was closed and objects removed in 2009, as a consequence of the bad condition of the building. On the southern side, facing the site, there are multiple buildings of temporary character, serving as storage rooms for stone monuments, mosaics, frescoes and other types of material; the room consisting of a low stone wall and tin, a semicircular hangar, a small room without a roof, and two fenced cages with a tin roof.

Previous activities: 1971: adaptation of the smaller room for a temporary exhibition (Fig. 4); 2009: exhibition is closed because of danger to visitors from the deterioration of the roof (Fig. 2); 2011-2012: both rooms of the Old Train Station are cleaned and the finds that were stored there were moved to Depot 5; 2014: material that was stored in the adjacent improvised storage (pottery, bricks, marble fragments, sculptures, stucco decoration) was temporarily transferred in the larger room of the Old Train Station.

Condition assessment: very bad

Documentation: Complete project for adapting the existing building - Old Train Station into a "Visitors center and the building of toilettes and porticos on the archaeological site Stobi", under No. 0308-16-897/2015, including a complete project for the architecture, building-construction project, projects for the electricity, water supply, drainage, sewage, as well as fire protection, proposing a complete reconstruction of the building with the improvement of complementary surrounding space. The projects envision a complete restoration (replacement of the ceiling and roof, replacement of windows and doors, renovation of walls and floors). Both rooms on the ground level are intended for exhibition areas, while the attic would be transformed into a meeting hall and an educational space. On the back southern side of the building, an open courtyard is surrounded by a portico in which a lapidarium would be organized, while the middle part would be a cafeteria with an open bar for visitors. Two toilets are planned to be built on the western side of the building.

2. STORAGE FACILITIES

Description:

Depot 1, 3, 4 (Figs. 100a-d): Wooden cabin built in 1995, with ten rooms, four of which are used as storage facilities. The building is placed on low concrete bedding, it has ceramic tile floor, wall of wooden planks and gypsum boards, double glass windows with wooden frames and asbestos roof. Depot 1 is a room of 370 sq. m. which is used for primary storage of all moveable archaeological material from ongoing excavations. Depot 3 is a room of 16 sq. m. where fragments of fresco, stucco and floor and wall mosaics are stored. Depot 4 is a room of 26 sq. m. to which in 2019 the central room of the building was added with a total area of 60 sq. m. The depot is used for temporary storage of marble fragments. It is equipped with an alarm system. Only minor repairs have been done so far.

Depot 2 (Figs. 101a-e): It is located in the basement of the main office occupying 57 sq. m. The basement part where Depot 2 is located has walls of stone and mortar, a ceramic tile floor and PVC

windows. It is used for storage of the museum collection (museum material and museum objects made of ceramics, glass, metal and other materials). Renovated in 2008 and 2012 and equipped with an alarm system, video surveillance and temperature and humidity control.

Depot 5 (Fig. 102a-d): Wooden cabin built in 1995, with 29 rooms and occupies an overall area of 563 sq. m. The building has a wooden floor, walls of wooden planks and gypsum boards, windows with double glass and wooden frames, and an asbestos roof. NI Stobi uses the rooms of the building for storage of the so-called study (mass) material (pottery, glass, stone, marble, metal, animal bones, fresco and anthropological material) and tools for archaeological excavations. Only minor repairs have been done so far.

Depots 6, 7 (Fig. 103): Located to the south of the Old train station (improvised hangars made of tin in the 1970s). Contains study material from the excavations in the 1970s, fresco, stucco and mosaic fragments. No repairs have been done so far.

Condition assessment: except for Depot 2 all other storage facilities are in very bad condition.

Documentation: Since all of them are temporary structures, and according to the Law no project was required, there is no documentation.

3. LABS

Description: Large room (Depot 1) of the cabin is used for processing of the archaeological material during implementation of the projects (Figs. 100a-b). A wooden yellow cabin with a porch placed in 2010 near the riverbed of Crna is adapted for conservation of mosaics and frescoes (Fig. 104). One cabin located near Crna river and renovated in 2019, has four rooms adapted for conservation of moveable finds: one for pottery and glass, one for conservation of stone monuments and one room was adapted for metal conservation. The fourth is an office for mosaic conservation.

Condition assessment: bad, except for the cabin with labs and offices for moveable finds.

Documentation: Since all of them are temporary structures, and according to the Law no project was required, there is no documentation.

APPENDIX 11: COLLECTIONS OF MOVEABLE FINDS (ASSESSMENT OF THE PHYSICAL CONDITIONS)

1. MOSAICS IN STORAGE

Description: Many of the mosaic floors discovered in the buildings in Stobi were removed from their original position for conservation treatment. Some have been returned in their original location, while others are in storage because they were found in fragments or there was no possibility to preserve and exhibit them in their original position. Fragments of mosaic floors from the following buildings are currently in storage:

- **Large Episcopal Basilica:** Both phases of the mosaic floor from the south aisle; the mosaic from the first phase of the narthex; the mosaic segments from the nave and the fragments from the mosaic in the south annex.
- **Early Episcopal Basilica:** Negatives in the bedding of the sectile floor in the presbytery are kept in storage.
- **Building with Arches:** The eastern half of the mosaic on the second floor was completely removed and put in storage.

Previous conservation: Both phases of the mosaic in the southern aisle of the Large Episcopal Basilica were removed from their original bedding during the 1970s and placed on concrete carriers. In 2018-2019 a re-conservation was carried out and both phases were placed on aluminum honeycomb carriers. The mosaic from the first phase in the narthex was removed in 2016. The sectile bedding from the Early Episcopal Basilica was removed in 1991, while the parts of the mosaic from the second floor of the Building with Arches were removed in the 1970s.

Documentation: Drawings of the mosaics in the Large Episcopal Basilica exist on the ground plans of the entire building, as well as sections and details exist in paper and digital form. The mosaics in the Building with Arches are documented on drawings.

Condition assessment: A mosaic fragment from the first phase in the narthex of the Large Episcopal Basilica which was removed in 2016 is in good condition. Both phases of mosaic pavement in the south aisle of the Large Episcopal Basilica are in good condition after re-conservation. The mosaic fragments of the second floor in the Building with Arches and from the south annexes of the Large Episcopal Basilica are in good condition.

2. PAINTED AND STUCCO DECORATION

Description: Painted wall and stucco decoration are frequent in various buildings at Stobi, although they were found mainly in fragments. Fragments were discovered in the destruction layers of the buildings during the excavations, with the exception of the stucco and painted wall decoration in Casa Romana, Early Episcopal Basilica, Baptistery, Basilica Extra Muros and in a few tombs in the West Cemetery where they were found on the walls. The only wall decoration still in situ is in the tomb discovered below the floor of the Cemetery Basilica.

In most cases, painted wall decoration was applied on bedding made of two layers of clay strengthened with straw and layer of lime plaster in-between, while the decoration was rendered on a thin layer of lime plaster using earthen pigments. Most of the decoration is geometrical and floral, and rare figural decoration is preserved in fragments and comes from the upper zone in the Early Episcopal Basilica, in the Baptistery and Casa Romana. They are of exceptional significance because of their rarity and uniqueness, especially those from the Early Episcopal Basilica, the Baptistery and Casa Romana.

Quantitative analysis: Most of the fragments of painted wall and stucco decoration discovered up until 2009 are stored in wooden boxes in the improvised tin hangar built behind the Old Train Station. Prior to 1979, 442 wooden boxes with fragments were recorded in the inventory book including 10 larger panels and 21 smaller fragments detached from walls of the Episcopal and the Central (Synagogue) Basilicas, 43 panels of painted decoration and stucco detached from Casa Romana

and seven pieces from the Baptistery. Some of the wooden boxes with painted fragments (from the Baptistery) were removed from the improvised hangar and stored in Depot 3. Fragments of painted and stucco decoration of the Building with Arches are stored in Depot 3 and 5.

90 fragments (130 sq. m.) from the Early Episcopal Basilica are stored in Depot 3. 413 cardboard boxes of fragments found during the excavations in the south aisle of the Early Episcopal Basilica in 2017 and 2019, are stored in Depot 5. The total surface is hard to estimate because of the fragmentary preservation.

Previous conservation: Fragments discovered in the destruction layers of the buildings during the excavations were lifted using gauze and organic or synthetic glues and stored in wooden boxes in the storage facilities at the site. They received preventive conservation (cleaning or consolidation of the edges) or were stored without any conservation treatment. The wall decoration found still in situ on the walls of buildings was detached from the walls and also put in storage. Most received a conservation treatment and were placed on wooden carriers and canvas. In general, the materials used for conservation treatments and storage facilities are inappropriate for fragile fresco and stucco decoration. During the conservation of the wall paintings from the Early Episcopal Basilica in 2001-2004, 2010-2012 and 2019, 80 panels were detached, conserved and placed on aluminum honeycomb carriers. The conservation of 80 fragments (100 m²) was completed while 10 fragments detached from the south wall in 2019 are in the process of conservation. The wall paintings from Casa Romana were conserved in the 1970s.

Documentation: There are two notebooks for the process of conservation, one inventory notebook from the 1970s (paper and scanned) and complete documentation for fresco conservation of the Early Episcopal Basilica from 2011 (paper and digital).

Condition assessment: The 80 conserved fragments of frescoes from the Early Episcopal Basilica are stable and in a good state of preservation after the conservation, while the remaining 10 are in the process of conservation. The remaining fragments are in bad condition because of lack of conservation, inappropriate materials used in conservation and inappropriate storage.

3. CERAMIC AND GLASS FINDS

Description:

Ceramic finds: Finds made of clay are divided in three categories: ceramic vessels, terracotta figurines and lamps. Building materials made of clay such as roof tiles, pipes, as well as various types of weights are not included here. Finds made of clay belong to four collections: Prehistory, Pre-Roman, Roman and Late Antique.

Ceramic vessels include tableware (various types of plates, bowls, cups, flasks, pitchers), cooking vessels (casseroles, jugs), storage (pithoi) and transport vessels (amphorae). Their size varies from 5-30 cm for table and cooking wares and 1 m or more in height for storage and transport vessels. The vessels are usually wheel made, but there are mold-made examples and a few handmade examples. There are plain, glazed, slipped or painted vessels and a few examples with burnished surfaces. The quality of the clay and firing differs in the various periods.

The terracotta figurines are mold made, plain or coated in white and overpainted with various colors which are rarely preserved on the surface. Their size varies between 10 and 15 cm in height.

Ceramic oil lamps are made on a potter's wheel or are in molds, usually with a relief decoration on the disk and with plain, glazes or slipped surfaces. Their size also varies between 5 and 10 cm in length and 5 cm in height.

Glass finds: Glass finds which are vessels belong to two collections: Roman and Late Antique, while other objects made of glass (window glass, jewelry and weights) are not included here. Glass vessels are mainly small sized shapes, up to 20 cm in height (flasks, cups, bottles and plates). They are made of colored glass in a free blowing technique, but there are also examples of mold-blown vessels and core-formed vessels. There are examples decorated with an incision or in relief.

Documentation: Finds made of clay and glass are recorded in the following museum registry documentation:

- Entry book: museum objects and museum material from the excavations 2009-2019 are recorded; museum objects and museum material from 1963 to 2008 found in the Depot 2 are recorded; museum material found in the hangar, Depots 5, 6 and 7 from 1963-2008 are not recorded yet due to the long process of recording and legal transfer of rights by the Directorate for Protection of Cultural Heritage.
- Inventory book: museum objects from all four collections discovered in the excavations 2009-2017 are recorded; museum objects from the excavations 1963-2008 and 2017-2019 which belong to Prehistory and Pre-Roman collections are recorded; recording of museum objects from the excavations 1963-2008 and from 2017-2019 which belong to Roman and Late Antique collections is ongoing.
- Card index: museum objects from all four collections discovered in the excavations 2009-2017 are recorded; museum objects from the excavations 1963-2008 and 2017-2019 which belong to Prehistory and Pre-Roman collections are recorded; recording of museum objects from the excavations 1963-2008 and from 2017-2019 which belong to Roman and Late Antique collections is ongoing.
- Catalogue: museum objects from all four collections discovered in the excavations 2009-2017 are recorded; museum objects from the excavations 1963-2008 and 2017-2019 which belong to Prehistory and Pre-Roman collections are recorded; recording of museum objects from the excavations 1963-2008 and from 2017-2019 which belong to Roman and Late Antique collections is ongoing.
- For the museum objects and museum material discovered between 2009 and 2019 there is abundant digital photo documentation, while drawings exist for museum objects and for the museum material which was selected for field inventory only for those discovered between 2008 and 2012.
- For the museum objects discovered between 1963 and 2009 there is scarce photo and technical documentation.

Quantitative analysis: The total number of museum objects made of clay and glass is: 1552 ceramic vessels, 308 terracotta figurines, 245 lamps and 191 glass objects. The abundant study (museum) material (fragments of ceramic vessels, figurines, lamps and glass vessels) collected in the excavations at the site since the 1960s is impossible to calculate before the inventory and calculation is finished for all finds stored at Stobi's depots (several hundred thousand).

Ceramic finds:

- Prehistoric periods collection: 3 ceramic vessels.
- Pre-Roman period collection: 36 ceramic vessels, 11 terracotta figurines, 11 oil lamps.
- Roman period collection: 1328 ceramic vessels, 297 terracotta figurines, 193 oil lamps
- Late Antique period collection: 185 ceramic vessels, 41 oil lamps.

Glass finds:

- Roman period collection: 141 glass vessels.
- Late Antique period collection: 50 glass vessels.

Previous conservation: Some of the finds selected as museum objects made of clay and glass in all four collections are completely preserved, some are restored of the existing fragments, some have missing parts reconstructed, while others are fragmented examples. All finds are cleaned of dirt during the archaeological excavations, while the conservation treatment consists of removal of salts and gluing or restoration of the missing parts. Between 2013 and 2019, 72 ceramics and 96 glass finds from all the collections were subjected to conservation analysis and are included in three conservation projects. During the International workshop for conservation of Roman and Late Roman pottery and Glass (2010-2018), 60 ceramic vessels were re-conserved.

Total number of conserved ceramic finds:

- Prehistoric and Pre-Roman periods collection: 24 ceramic museum objects have been partly reconstructed and stabilized and others were subject to treatment.
- Roman period collection: approximately 400 ceramic finds are conserved and partly reconstructed of which approximately 200 require re-conservation.
- Late Antique period collection: 40 ceramic museum objects have been subject to conservation treatment and reconstruction.

Total number of conserved glass finds:

- Roman and Late Antique periods collections: 96 museum objects made of glass were included in two conservation projects.

Condition assessment: The museum objects and part of the museum material made of clay or glass are kept in Depot 2. Ceramic objects are kept on metal shelves and the glass objects are kept in wooden cabinets. The items as well as the material are sorted according to year of excavation, starting in 1963 to the present day. The humidity and the temperature are regulated. The depot was renovated in 2013. Large storage vessels are kept in Depot 5 because of their size

The huge amount of study (museum) material is kept in Depot 5, and part of the material excavated in the 1970s is kept in the tin hangar behind the Old Train Station. The study (museum) material with a field inventory number is placed on wooden shelves, where the majority of the remaining study (museum) material is kept in plastic bags and plastic crates.

In conclusion, the ceramic and glass items are well managed and stored in regulated conditions. The study (museum) material in other depots is in inappropriate storage facilities, without controlled temperature and humidity and proper shelves and exposed to various animals and insects.

4. METAL FINDS

Description: The metal finds in the collections of NI Stobi belong to different categories: jewelry, weapons, utilitarian objects, weights, votive objects, lamps and coins. The metal finds are made of different types of metal alloys: gold, silver, bronze, iron, lead, brass, and pewter. Some objects were made of a combination of these metals: bronze and iron; gold and silver; silver and bronze; lead and bronze; iron and lead; or combination of lead, bronze and iron. Some are a combination of metal and other materials: gold and semiprecious stones; bronze and glass; silver and glass; combination of bone and gilded glass; bone and bronze; lead and pewter; combination of gagat (jet), glass, silver, and gold; combination of glass, iron and silver. One object is made of wood and bronze. Objects were made using different techniques: casting, molding and hammering. The most common technique was casting. Most of the coins at Stobi are made of bronze, but there are also silver and a few gold coins. There are bronze coins coated with silver as well. Their size varies from 1-2 cm to 50 cm.

Quantitative analysis: The total number of metal finds is 3108. 545 of them are museum items separated into three collections: Pre-Roman, Roman and Late Antique.

- 16 objects belong to the Pre-Roman collection: 13 are made of bronze and three of iron. Of those objects made of bronze, three are categorized as miscellaneous finds and nine are jewelry. Three iron objects are categorized as miscellaneous finds.

- 205 metal objects belong to the Roman period collection: 99 are made of bronze, 58 of gold, 24 of iron, 16 of silver and eight of lead. Some of the bronze, silver and gold objects are combined with other materials.

- Bronze objects: 55 miscellaneous finds; 41 jewelry, 1 weapon; 1 weight.
- Iron objects: 14 miscellaneous finds; 4 jewelry; 1 weapon.
- Silver objects: 14 jewelry; 2 miscellaneous finds.
- Lead objects: 4 miscellaneous finds; 3 weapons; 1 weight.

- 325 objects belong to the Late Antique collection: 15 are made of bronze, 74 of iron, 28 of lead, six of silver and one of gold (fragments of gold sheet on the mullion capital).

- Bronze objects: 108 miscellaneous finds; 50 jewelry; 50 weights; 5 lamps; 2 weapons.
 - Iron objects: 50 miscellaneous finds; 20 weapons; 4 jewelry.
 - Lead objects: 19 weights; 7 weapons; 2 miscellaneous finds.
 - Silver objects: 4 jewelry; 2 miscellaneous finds.
- Collection of coins contains 8965 coins, of which 848 are museum items:
- Coins from the Classical period: 2 silver and 16 bronze coins; total: 18 coins.
 - Coins from the Republican period: 2 silver and 7 bronze coins; total 9 coins.
 - Coins from the Roman Imperial period: 1 silver coin; 17 antoniniani (coins made of silver and bronze - bronze core and silver coating); 48 bronze coins; total 66 coins.
 - Coins from the Late Roman period: 1 gold coin; 491 bronze coins of which 12 are antoniniani; total 492 coins.
 - Coins from the Early Byzantine period: 5 gold coins; 257 bronze coins; total 262 coins.
 - Coins from the Ottoman period: 1 silver coin.
 - General numismatic collection: 1 silver coin.

Documentation: Metal objects and coins are recorded in the museum entry book, according to their field inventory number. Each coin has a field inventory card and a digital photograph, stored on the server. Of those metal finds which are selected as museum items, 395 objects have complete records in the museum documentation: inventory card, inventory book and catalogue of museum finds. For the remaining 150 objects, preparation of museum documentation is ongoing. The coins which are selected as museum items are recorded in museum inventory cards, museum inventory book and catalogue.

• 304 metal objects and 4753 coins from the excavations 2009-2012 are included in the Project for conservation of metal finds from 2015. Only 150 coins and a small number of objects were treated.

Condition assessment: Five metal objects from the Pre-Roman collection are conserved. Four of them are in good condition, and for one object, re-conservation is necessary. 41 metal objects from the Roman collection are conserved. Six of them are in bad condition, and for four objects re-conservation is necessary. 83 objects from the Late Antique collection are conserved. 17 of them are in bad condition, and for six objects, re-conservation is necessary.

During the excavations from 2009 until 2018, a total number of 8965 coins were discovered, and only 1291 have been conserved. The method applied is mechanical cleaning. Numismatic collection includes 6852 coins discovered during the archaeological excavations 1963-2008. The coins from 1963-1982 excavations and from 2007-2008 are conserved and recorded in field inventory cards. A chemical method was applied in the conservation, and all of them are stable. 2441 coins from 1982-2006 excavations are not conserved.

All metal finds and coins are stored in Depot 2, where the humidity and temperature are controlled. 416 metal objects selected as museum items are stored in the Depot 2 as well, along with 2563 metal objects (study material) and 10115 coins which are not conserved. For 11 metal objects and 172 coins, re-conservation is necessary.

5. MARBLE AND OTHER STONE FINDS

Description: The collection of finds made of various types of marble or other types of stone consists of architectural decoration, sculpture, inscriptions, reliefs, and funerary monuments. Most of the architectural decoration is on the site, close to the building to which they belong. The others are stored in Depots, 3, 4, 5, 6 and 7. Most of the other finds made of stone, such as millstones, vessels and weights are included in the Roman and Late Antique collections.

The museum collection of stone finds consists of objects classified in three large groups (sculpture, architectural decoration and inscriptions) discovered during the archaeological excavations at Stobi

between 2009 and 2019. The objects are made in the technique of carving different types of local and imported marble and green sandstone.

Quantitative analysis: The museum collection of stone decoration contains 81 objects which are also mainly preserved in fragments.

- Sculpture - 36 museum objects: 3 pedestals for statues; 15 fragments of statues; 10 heads of statues; 6 fragments of torso, 1 bust and 1 stele.
- Inscriptions - 16 museum objects, 10 fragments, 1 votive and 4 grave monuments.
- Architectural decoration - 31 museum objects, 12 capitals, 6 bases and 13 fragments of architectural decorative elements.

Documentation: The museum objects and fragments determined as museum material (study material) discovered between 2009 and 2019 are recorded in the museum documentation: entry book, inventory book, inventory cards and catalogue of museum finds.

The abundant stone finds discovered between 1963 and 2008 are still in the process of being recorded, including those which are on the site, near the buildings, and thus their total number cannot be estimated.

Condition assessment: 72 objects from the museum collection of NI Stobi are located in Depots 3 and 4, except for the statue of Isis which is in the room adjacent to Depot 3 and 4, used as a lab for field processing of the finds. Seven objects which are located on the site (some of them still built into the buildings) were included in the museum collection by mistake: column base, 3 capitals, 2 funerary steles and a marble block. During the review of the collection, the senior curator responsible for the collection recommended that these objects have their status changed and be excluded from the museum documentation. One museum object – the head of Harpocrates is exhibited in the Archaeological Museum of Macedonia in Skopje.

Previous conservation: 41 objects were included in three conservation projects, two of which have been finished, while the last one is still ongoing.

In the period between 2009 and 2019, preventive conservation (cleaning and consolidation) has been done on 62 objects: 33 fragments of sandstone slabs with inscriptions, 16 slabs made of different types of marble, 2 secondary used marble slabs of a sarcophagus, 3 sandstone pedestals for statues with inscriptions, 3 marble heads of statues, 1 marble kantharos, 1 marble phiala, 1 marble torso of a statue and 2 fragments of sculpture. 33 columns (twelve shafts of columns, nine bases, eleven capitals) which belong to the baldachin over the baptismal pool were restored and placed in their original position.

- 36 pieces of sculptures have been cleaned; 14 were mechanically cleaned and consolidated. The existing fragments of the statue of Aphrodite have been restored and placed on a pedestal.

The remaining objects in the museum are not conserved and generally they are in good or satisfactory condition and require usual measures of protection such as cleaning of the surface of dirt and calcification, and consolidation.

- 15 objects that belong to the category of inscriptions have been cleaned. Preventive conservation was done on nine inscriptions. The activities involved mechanical and chemical cleaning and consolidation.
- 31 pieces of architectural decoration have been cleaned from soil sediments, and only three have been subject of preventive conservation – two impost capitals and one fragment with relief decoration of a lion. The remaining objects are in good or satisfactory condition and they only need cleaning and consolidation.

An aerial photograph of an ancient archaeological site, showing a complex of stone walls and foundations. The site is characterized by several large rectangular enclosures and smaller structures, some with decorative elements like columns or carvings. The ground is dry and dusty, with some sparse vegetation. The overall layout suggests a well-planned urban or institutional complex.

FIGURES
FOR APENDIX
9 AND 10



Fig. 72a. Casa Romana, during the excavations in the 1970s

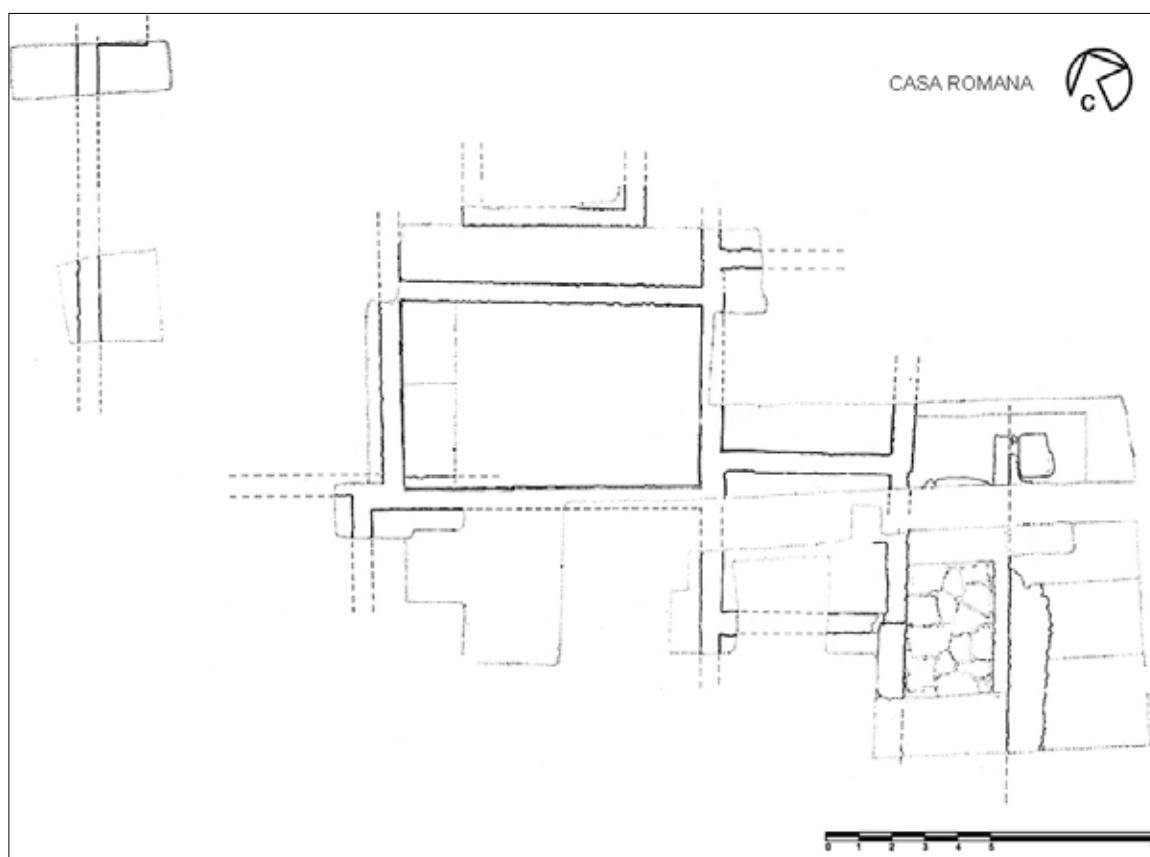


Fig. 72b. Casa Romana, ground plan



Fig. 73a. Building with Arches (Library), orthophoto, 2020

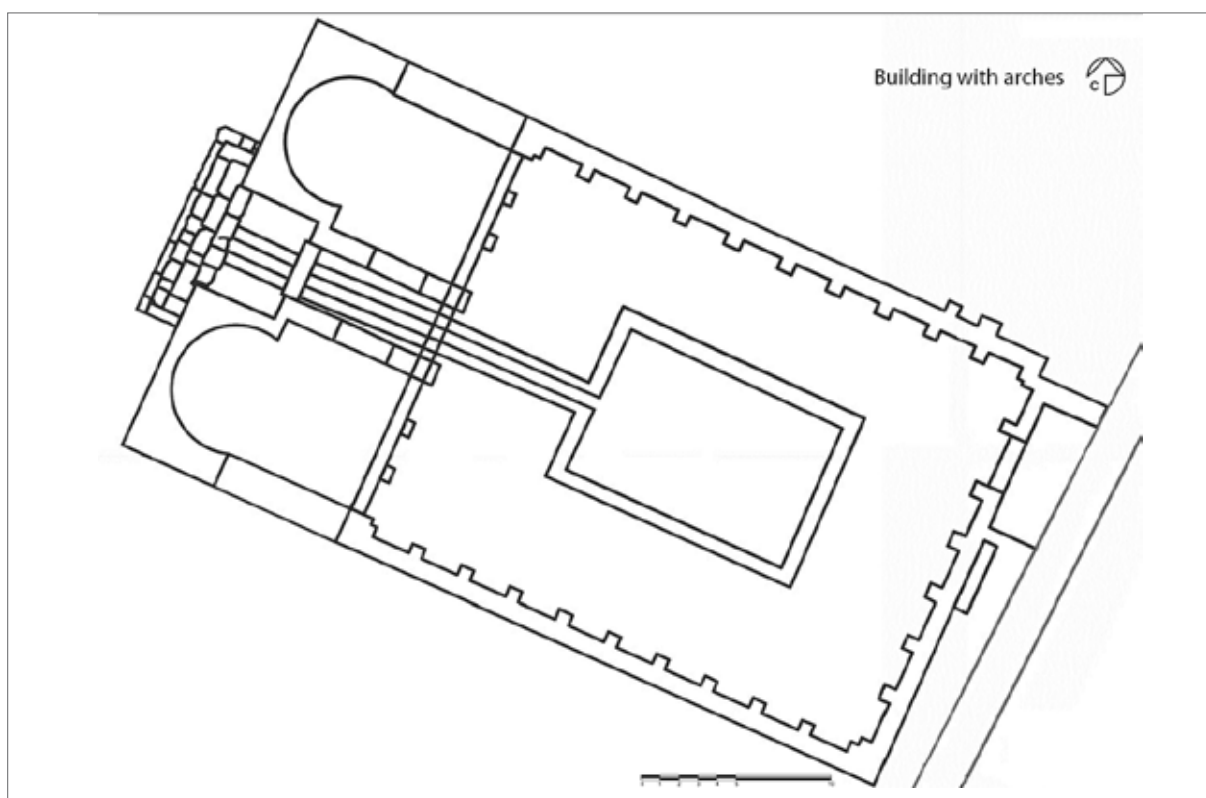


Fig. 73b. Building with Arches (Library), ground plan



Fig. 73c. Building with Arches (Library), during the excavations in 2009, view for W



Fig. 73d. Building with Arches (Library), view of the arches on the north wall of the large hall



Fig. 73e. Building with Arches (Library), sectile floor in the south apsidal room



Fig. 74a. Temple of Isis and surrounding complex, orthophoto, 2017



Fig. 74b. Temple of Isis and surrounding complex, ground plan



Fig. 74c. Temple of Isis, view from NE, after conservation in 2012



Fig. 74d. Temple of Isis, subterranean chamber



Fig. 75a. Theatre, orthophoto, 2019

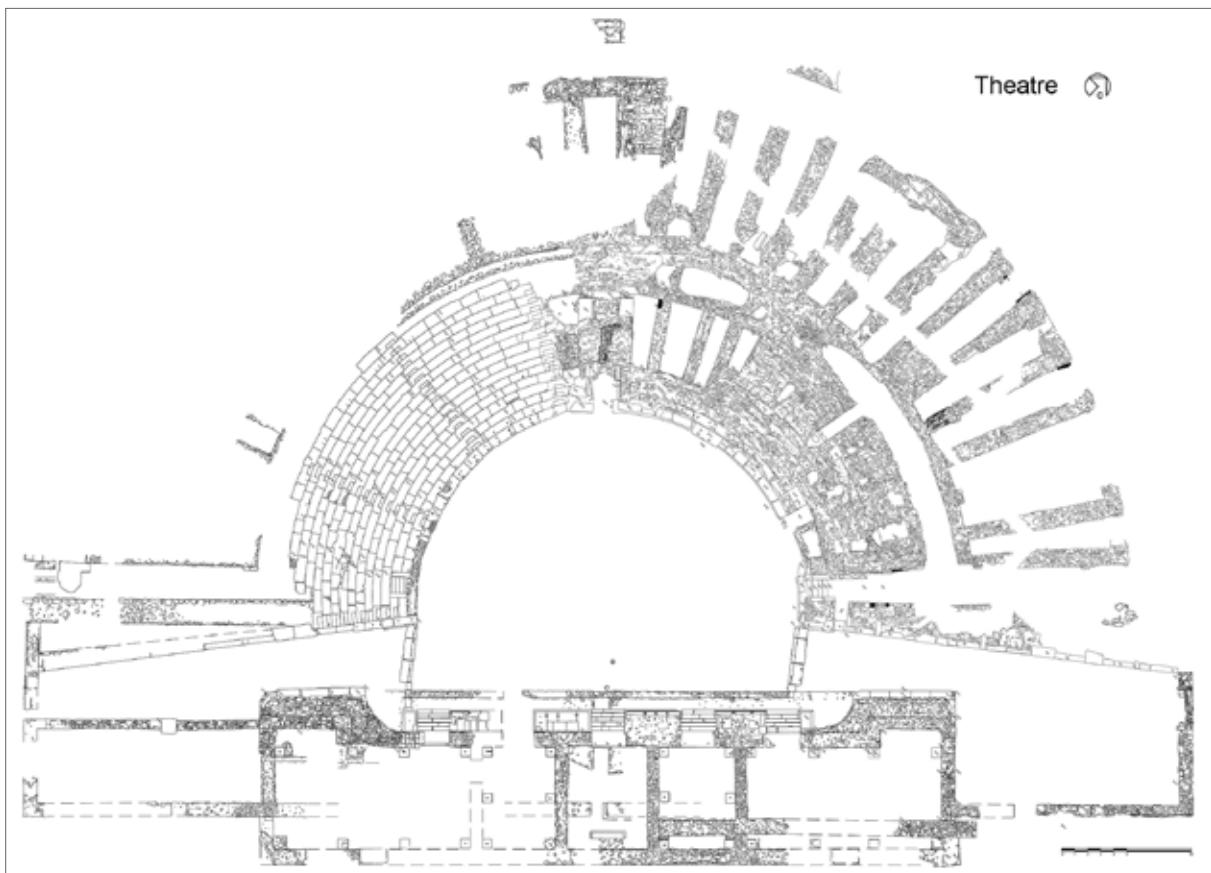


Fig. 75b. Theatre, ground plan



Fig. 75c. Theatre, marble seats preserved in situ in the west half of ima cavea.



Fig.75d. Theatre, central circular corridor during the excavations in 2014



Fig. 75e. Theatre, scene building



Fig. 76a. Episcopal Basilicas and the Baptistry, orthophoto, 2020

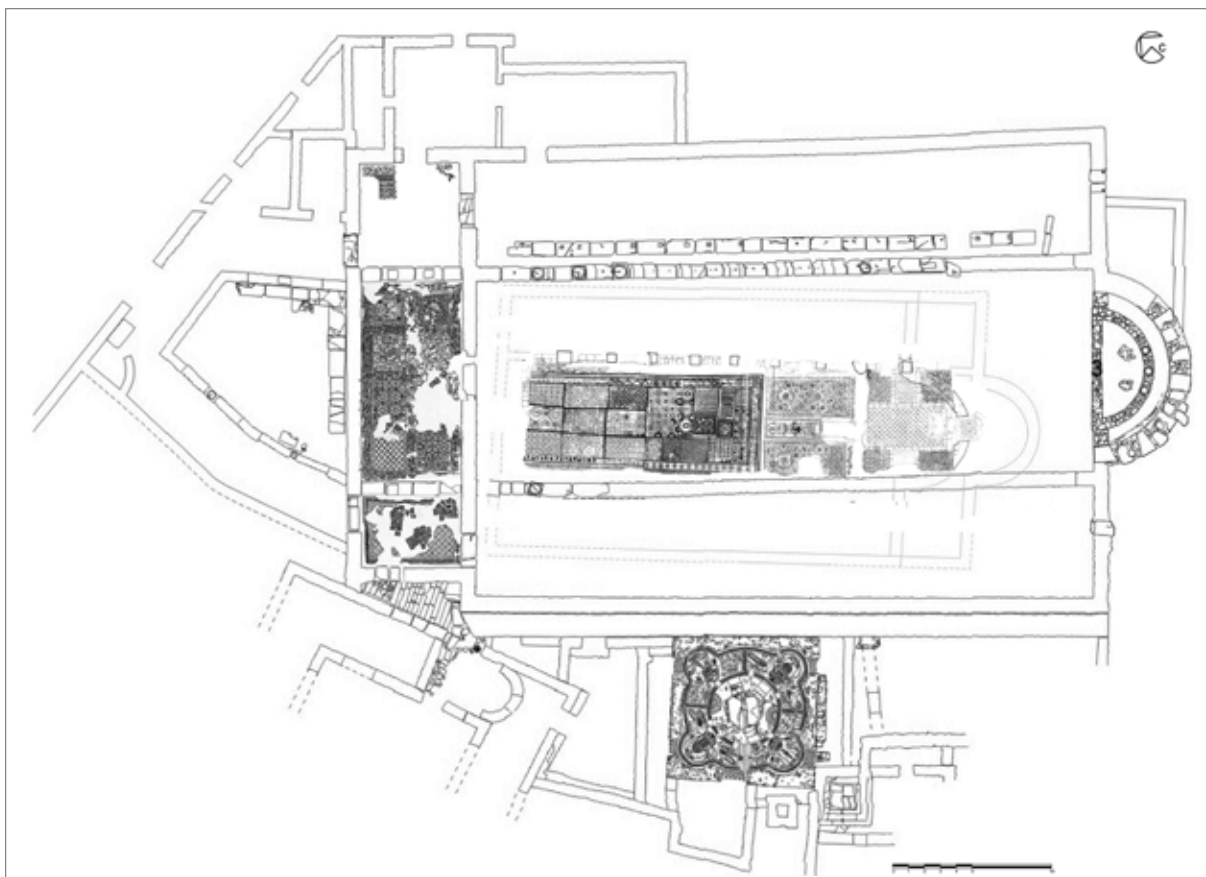


Fig. 76b. Episcopal Basilicas and the Baptistery, ground plan



Fig. 76c. Episcopal Basilicas, view from W, 2009



Fig. 76d. Early Episcopal Basilica below the nave of the Large Episcopal Basilica, view from NE



Fig. 76e. Mosaic floor in the nave of the Early Episcopal Basilica, 2014



Fig. 76f. The atrium of the Large Episcopal Basilica, view from S.



Fig. 76g. The north aisle of the Large Episcopal Basilica, view from W



Fig. 76h. Mosaic in the narthex of the Large Episcopal Basilica, 2018



Fig. 76i. Southwest annexes of the Large Episcopal Basilica



Fig. 76j. Baptistery



Fig. 76k. Baptistery after conservation of the mosaic floor and marble columns of the baldachin



Fig. 77a Episcopal Residence, orthophoto 2017

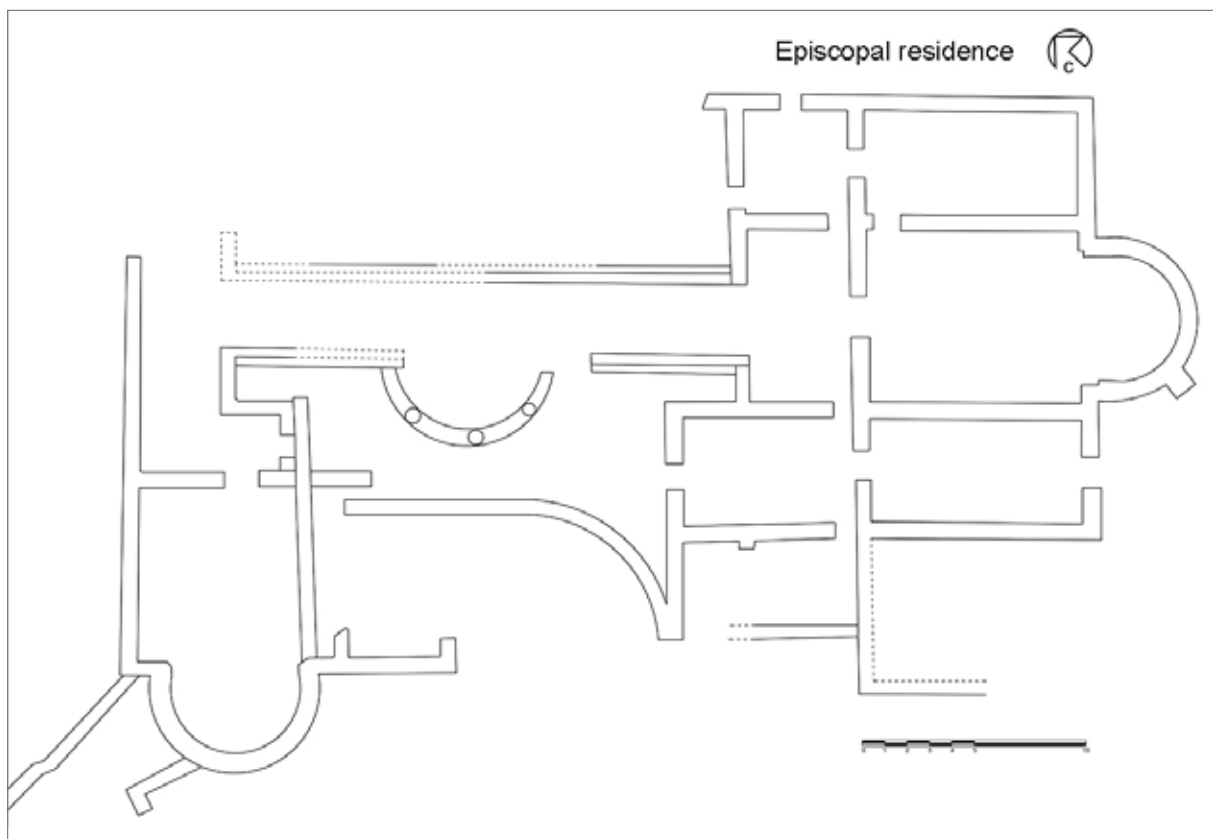


Fig. 77b. Episcopal Residence, ground plan



Fig. 77c. Episcopal Residence, view from W



Fig. 78a. Casino, orthophoto 2017

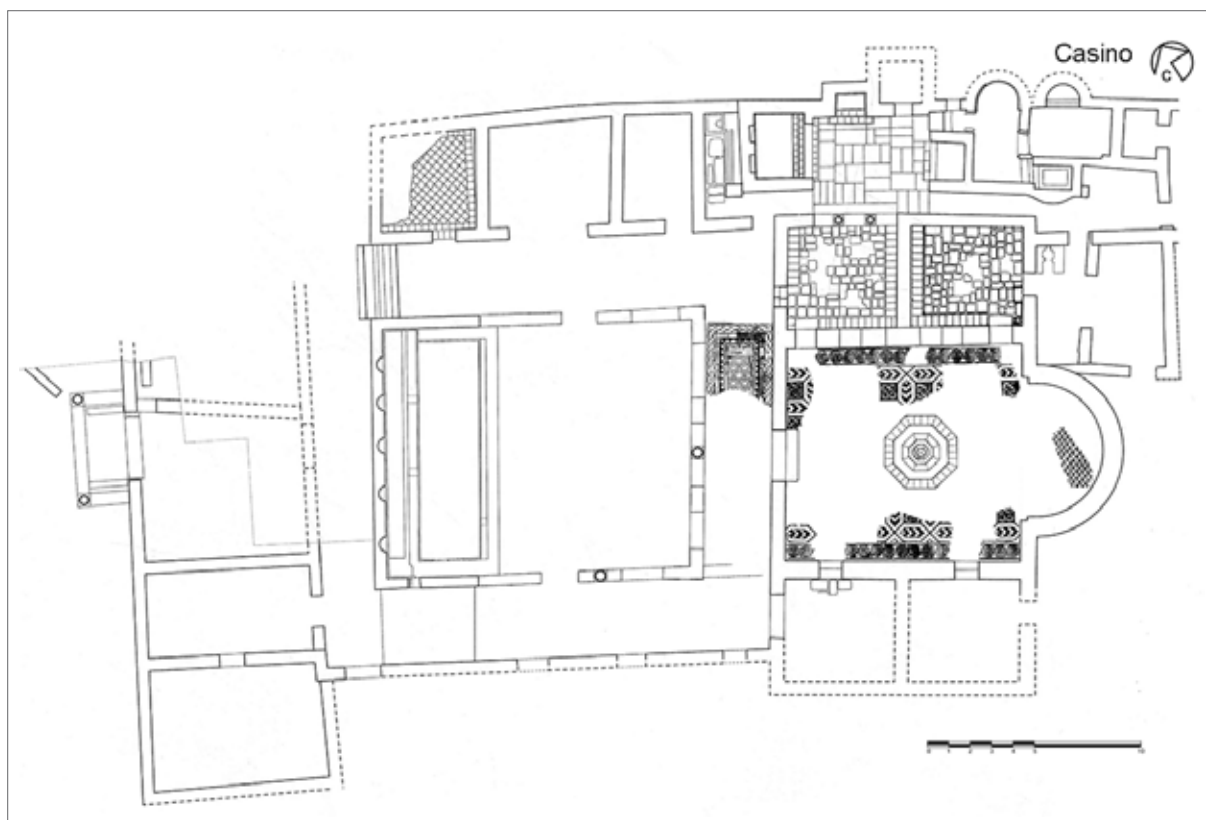


Fig. 78b. Casino, ground plan



Fig. 78c. Casino, view from W, 2010



Fig. 78d. Casino, view from N, 2010



Fig. 78e. Casino, mosaic floor in the room to the north of the court, 2009



Fig. 79a. The Residential and Commercial Quarter, Semicircular Court, House with a Triclinium, orthophoto, 2017

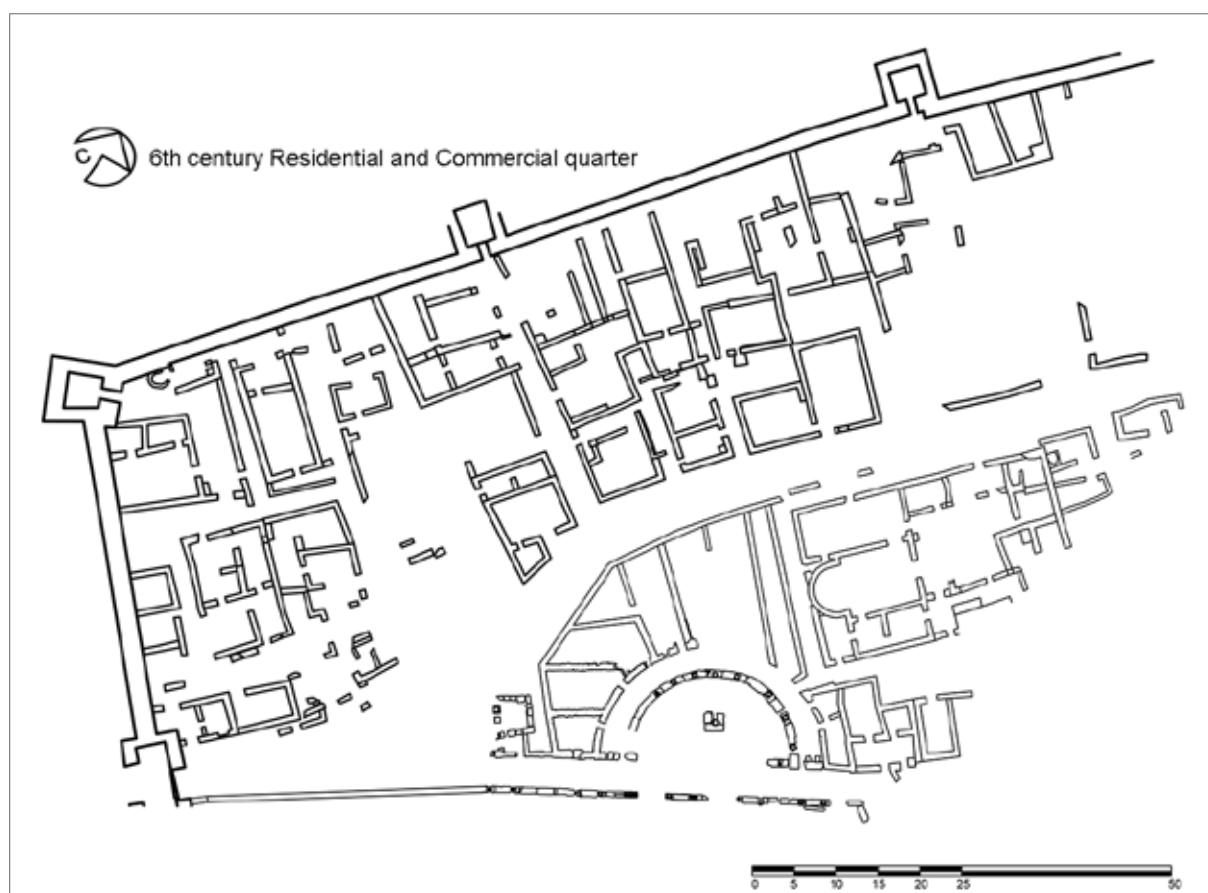


Fig. 79b. The Residential and Commercial Quarter, Semicircular Court, House with a Triclinium, ground plan



Fig. 79c. The Residential and Commercial Quarter, after the excavations in 2010, view from NE on the main street and neighboring buildings



Fig. 79d. The Residential and Commercial Quarter, after the excavations in 2010, view from SW



Fig. 79e. House with a Triclinium, after the excavations in 2010



Fig. 79f. House with a Triclinium, after the conservation in 2010



Fig. 80a.
Domus
Fullonica,
orthophoto,
2017

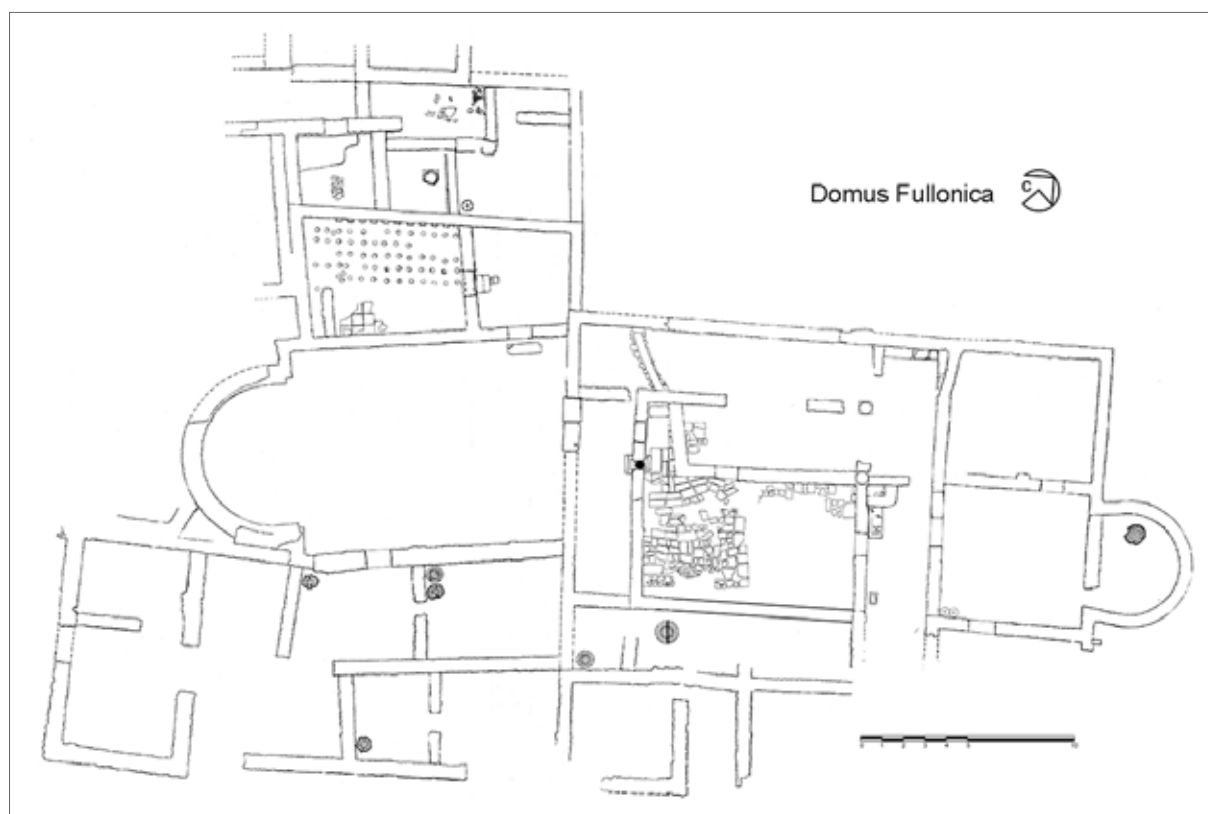


Fig. 80b. Domus Fullonica, ground plan



Fig. 80c. Domus Fullonica, the triclinium, view form N



Fig. 80d. Domus Fullonica, view from W



Fig. 81a. Prison, Theodosian Palace and House of Parthenius, orthophoto 2017

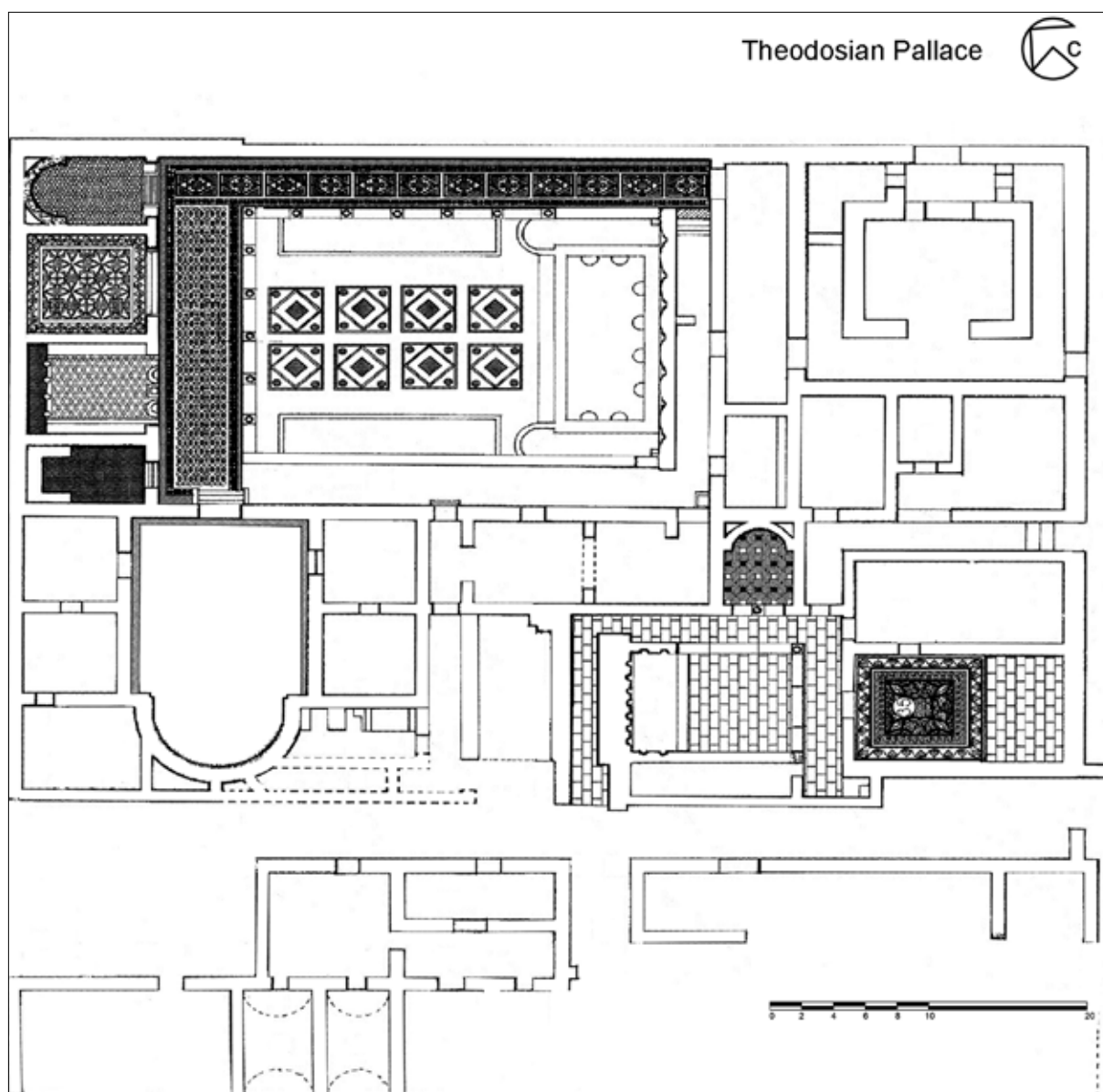


Fig. 81b. Prison, Theodosian Palace and House of Parthenius, ground plan



Fig. 82. Prison, view form SE, 2015.



Fig. 83a. Theodosian Palace, view from SW.



Fig. 83b. Theodosian Palace with the mosaic and sectile floors, view from W



Fig. 83c. Theodosian Palace, mosaic floor after the conservation in 2012



Fig. 84a. House of Parthenius, view on the peristyle court from S



Fig. 84b. House of Parthenius, view on the western rooms



Fig. 85a. House of Peristeria, orthophoto 2017

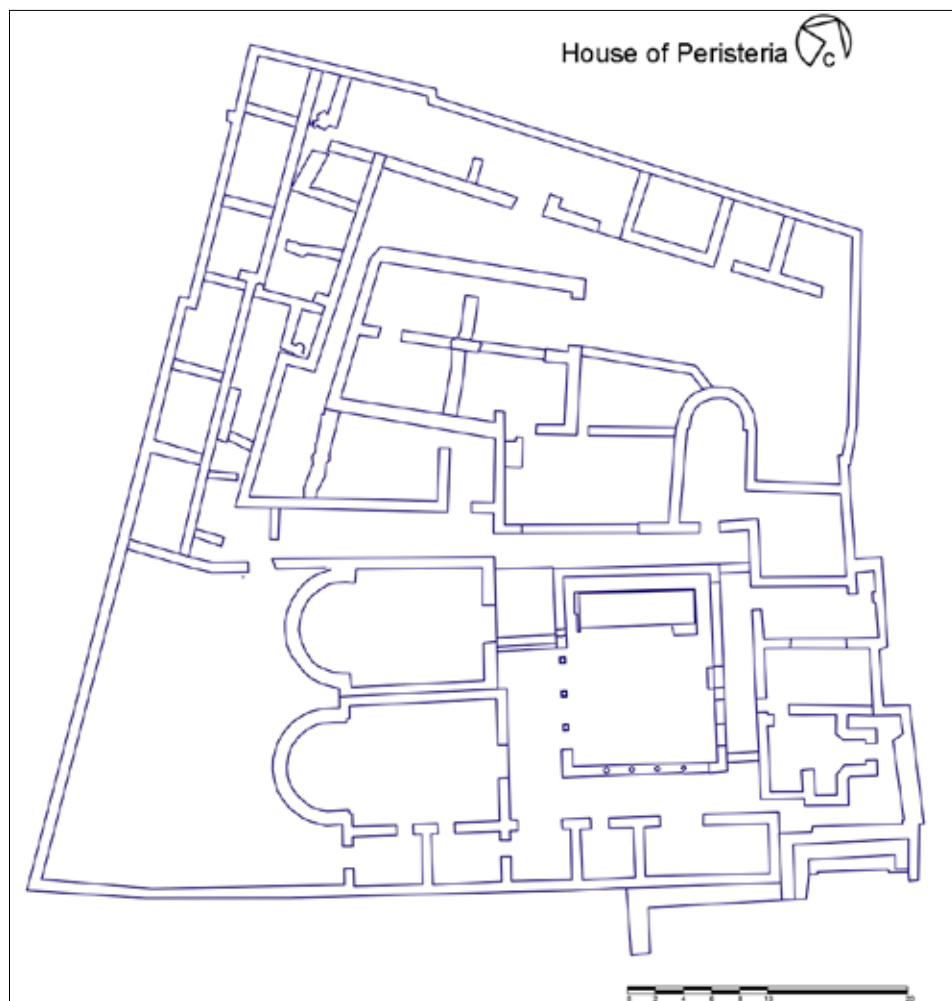


Fig. 85b. House of Peristeria and City Fountain, ground plan



Fig. 85c. House of Peristeria, view from NW



Fig. 85d. House of Peristeria, view of the peristyle court



Fig. 85e. House of Peristeria, mosaic floor in the east triclinium, after the conservation in 2012



Fig. 86. City Fountain



Fig. 87a. Large Bath, orthophoto 2017

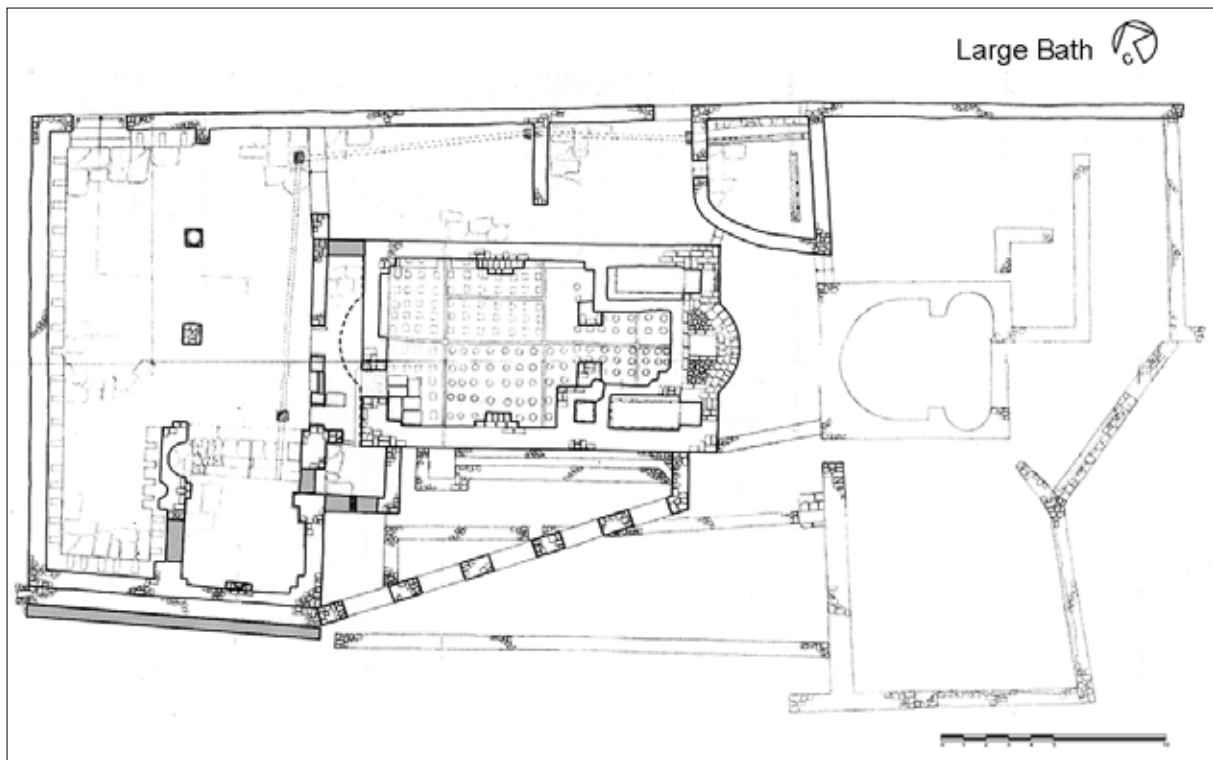


Fig. 87b. Large Bath, ground plan



Fig. 87c. Large Bath, view on the hypocaust floor from W



Fig. 87d. Large Bath, the praefurnium

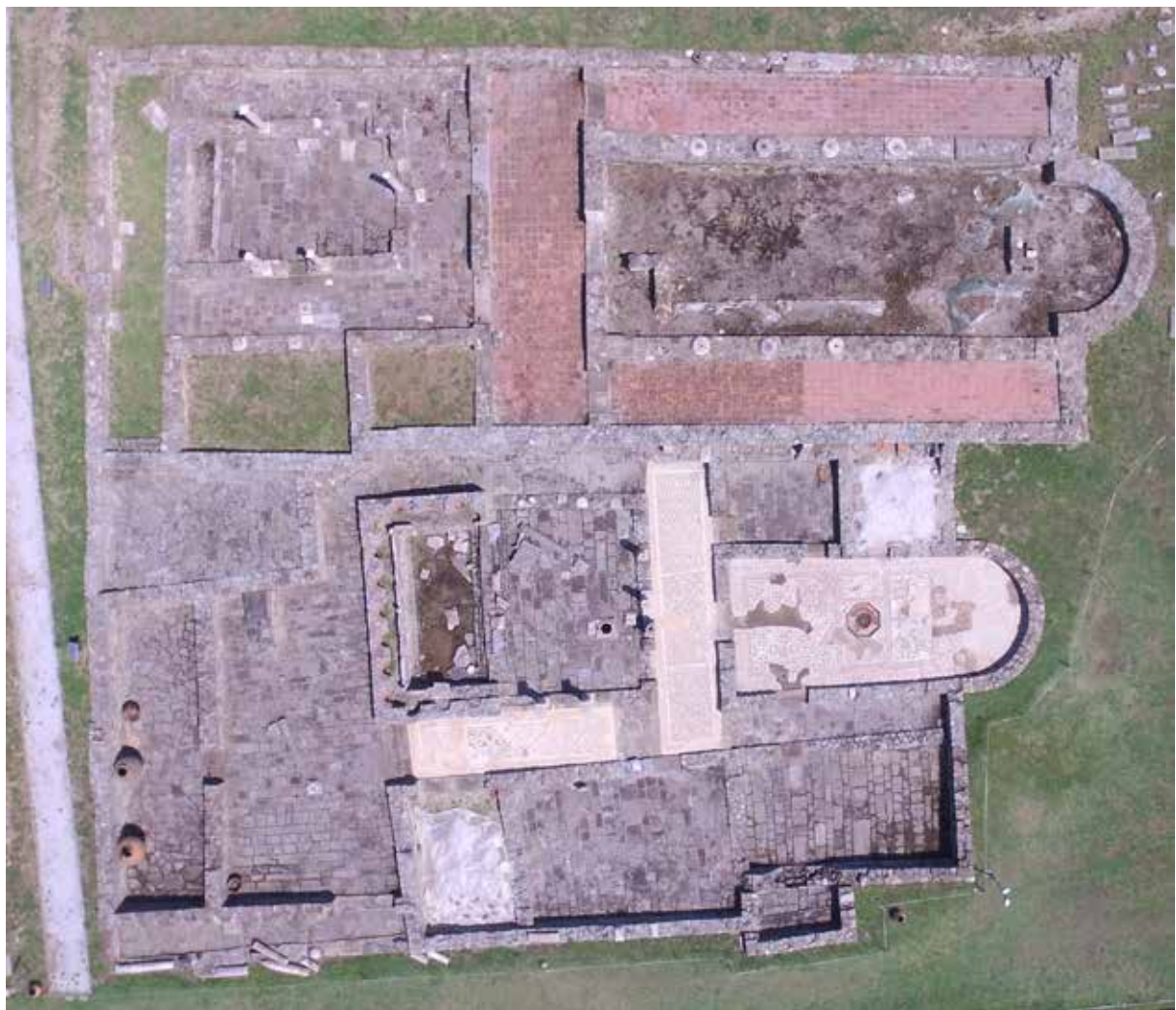


Fig. 88a. House of Polycharmos and Central (Synagogue) Basilica, orthophoto 2017

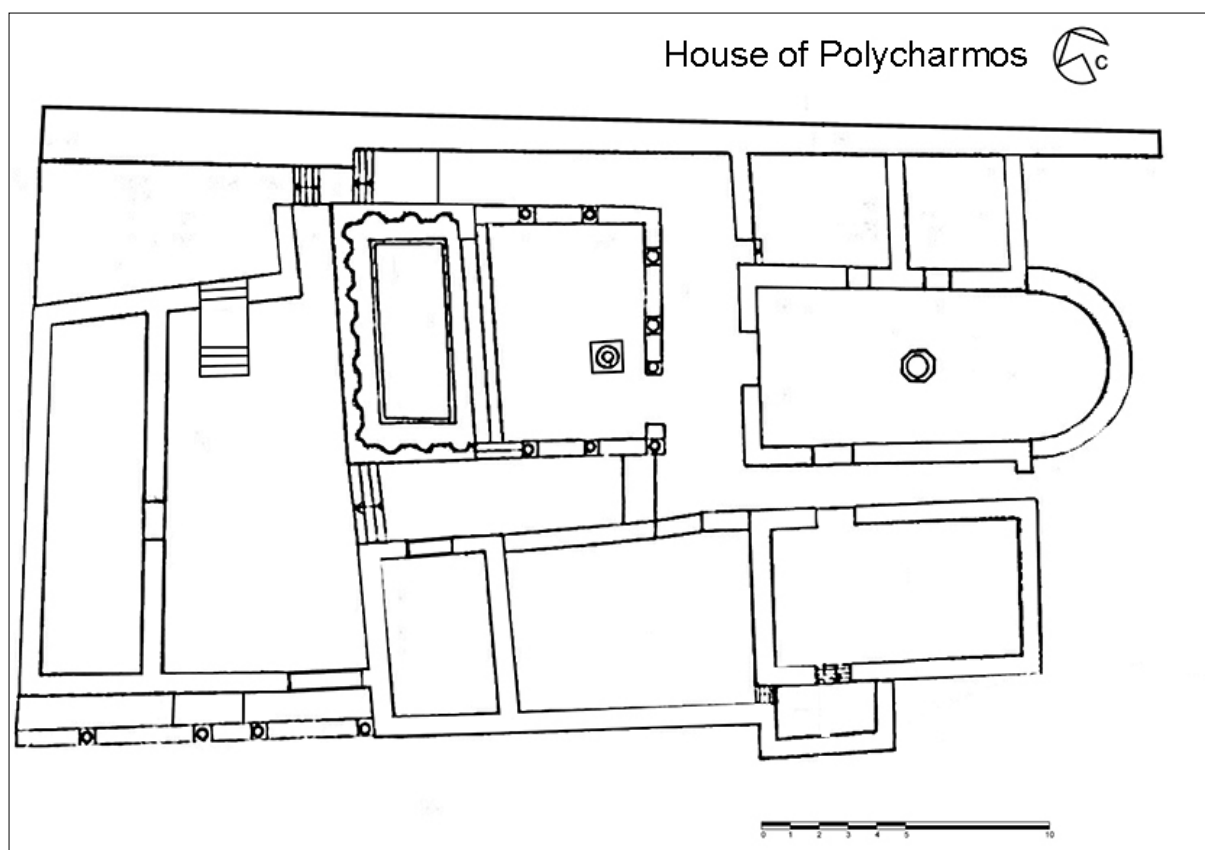


Fig. 88b. House of Polycharmos, ground plan



Fig. 88c. House of Polycharmos, view on the peristyle court from NE



Fig. 88d. House of Polycharmos, view on the court and triclinium, from W



Fig. 88e. House of Polycharmos, mosaic floor in the triclinium



Fig. 89a. Central (Synagogue) Basilica, view from W

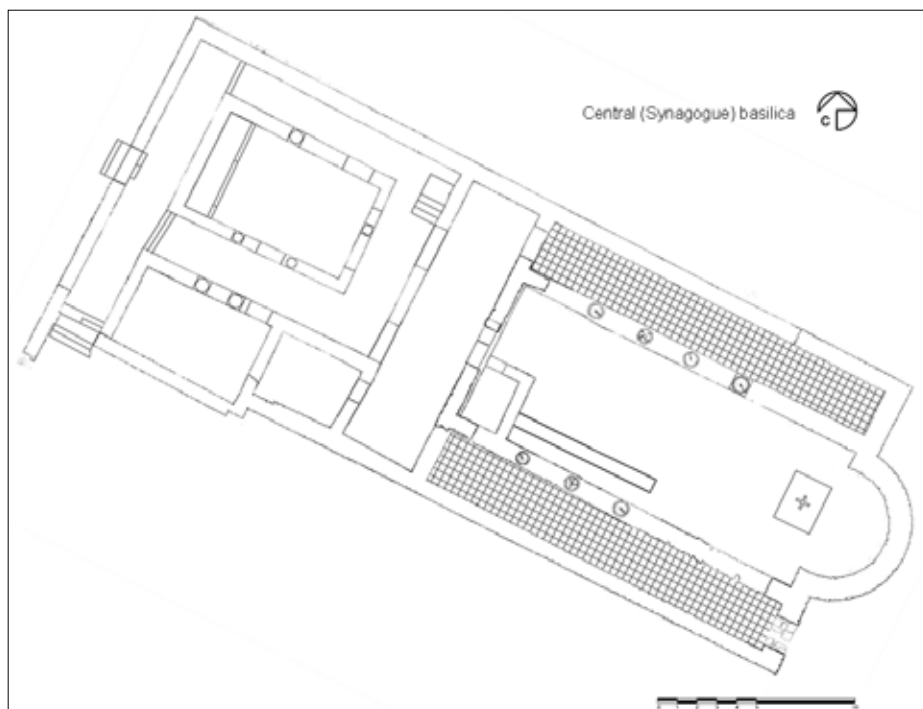


Fig. 89b. Central (Synagogue) Basilica, ground plan



Fig. 89c. Central (Synagogue) Basilica, view from NW

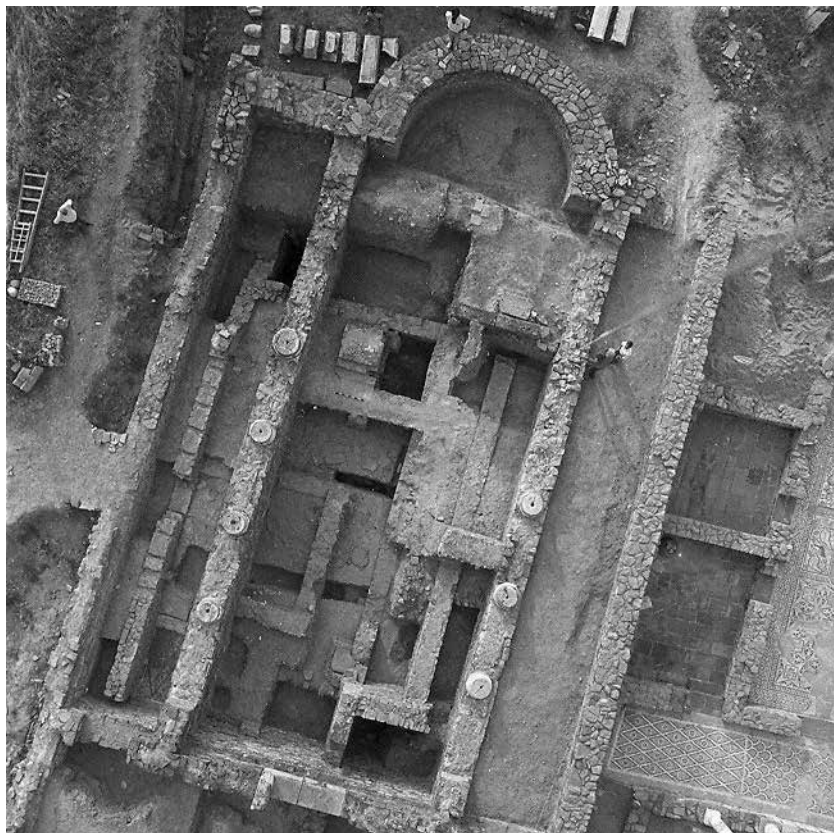


Fig. 90a. Central (Synagogue) Basilica, aerial photo on the remains of the Synagogue during the excavations in the 1970s



Fig. 90b. Mosaic from the Synagogue, relocated near the guard's house

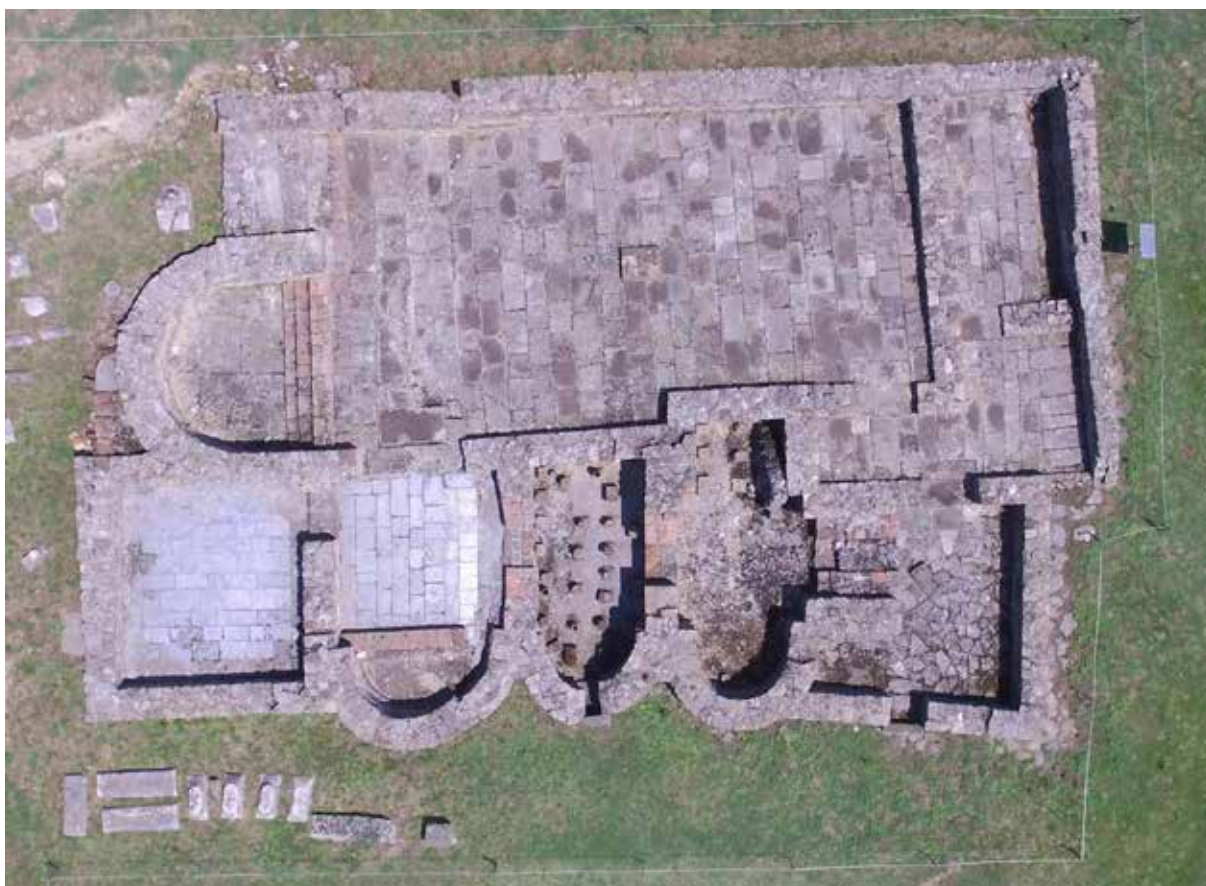


Fig. 91a. Small Bath, orthophoto, 2017

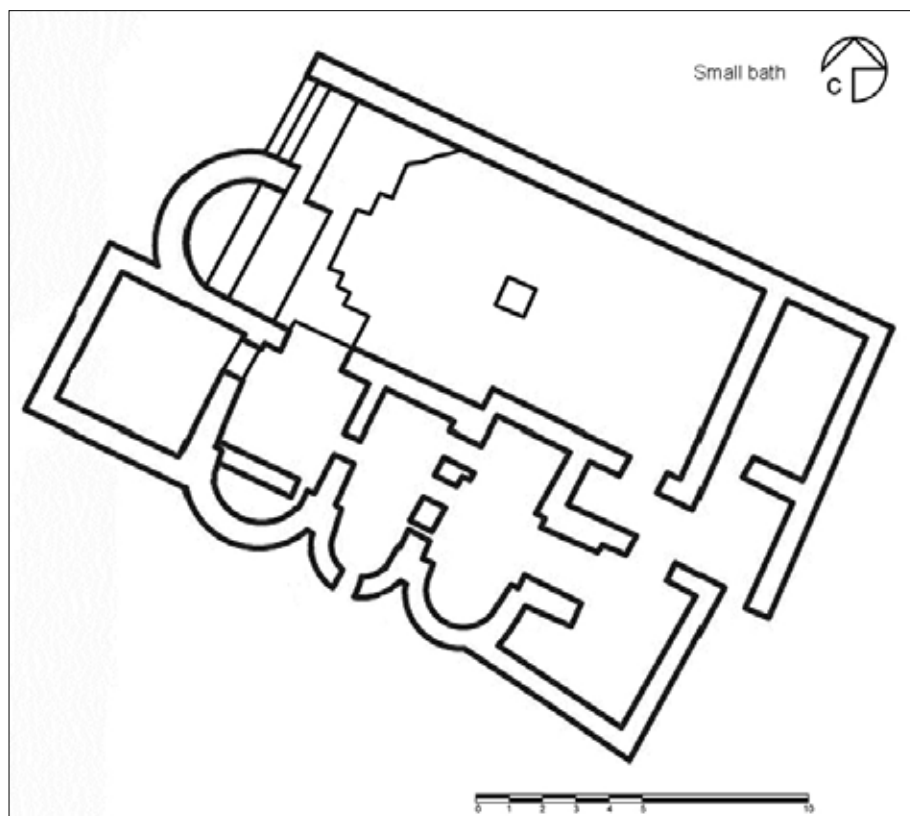


Fig. 91b. Small Bath, ground plan



Fig. 91c. Small Bath, view from W



Fig. 92a. Civil and North Basilica, orthophoto, 2017



Fig. 92b. Civil Basilica, view from W

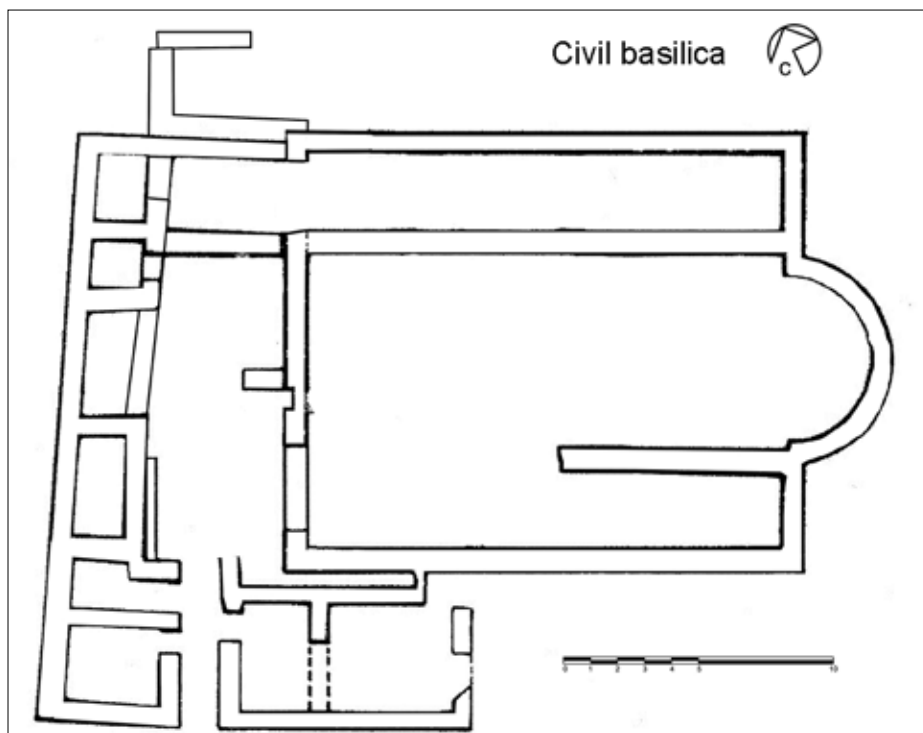


Fig. 92c. Civil Basilica, ground plan



Fig. 93a. North Basilica, view from W

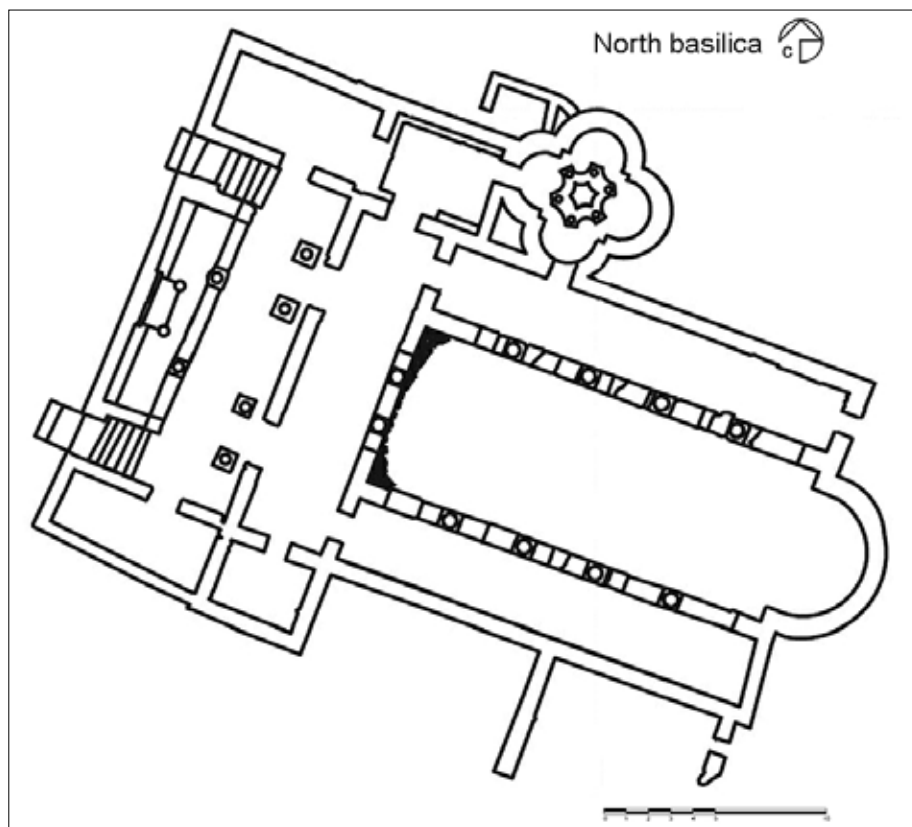


Fig. 93b. North Basilica, ground plan



Fig. 93c. Baptistry of the North Basilica



Fig. 93d. North Basilica, view towards the atrium, from NE



Fig. 94a. Fortifications, aerial view of Stobi from S, visible northwest and southeast section of the wall



Fig. 94b. Southeast corner of the fortification walls



Fig. 94c. Porta Heraclea, view from S



Fig. 94d. Section of the northwest fortification wall after the excavations in 2010



Fig. 94e. South section of the inner east wall, after the excavations in 2008



Fig. 94f. Section of the inner east wall above Building with Arches



Fig. 95a. Cemetery Basilica, after cleaning in 2010, view from east



Fig. 95b. Cemetery Basilica, view from north on the narthex with graves



Fig. 95c. Cemetery Basilica, entrance to the cross-vaulted tomb



Fig. 95d. Cemetery Basilica, the interior of the cross-vaulted tomb



Fig. 96a. Basilica Extra Muros, orthophoto 2017



Fig. 96b. Basilica Extra Muros, view from W



Fig. 96c. Basilica Extra Muros, mosaic in the nave



Fig. 97
Ottoman
bridge



Fig. 98. Old Train Station

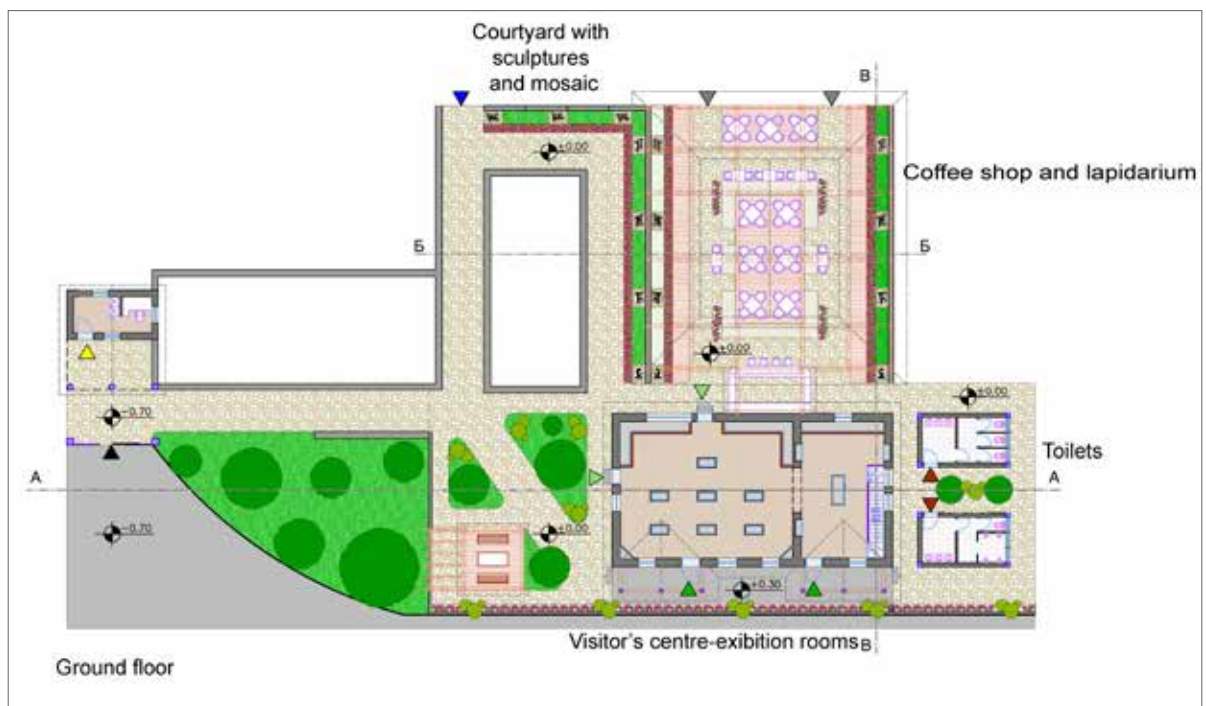


Fig. 99. Project proposal for the Visitors center



Fig. 100a. Storage facilities: depots 1, 3 and 4



Fig. 100b. Storage facilities: depot 1 used as room for processing of the finds from current excavations



Fig. 100c. Storage facilities: depot 3 used for storage of frescoes



Fig. 100d. Storage facilities: depot 4, used for storage of marble finds



Fig. 101a. Main office: depot 2 is in the basement of the cabin



Figs. 101b-e. Storage facilities: depot 2 used for storage of small finds (pottery, glass, metal, bone)



Fig. 101c



Fig. 101d



Fig. 101e



Figs. 102a-d. Storage facilities: depot 5 used for storage of study material and tools



Fig. 102b



Fig. 102c



Fig. 102d



Fig. 103. Storage facilities: tin hangar used for storage of various finds in the 1970s



Fig. 104. Lab for mosaic and fresco conservation

APPENDIX 12: LIST OF PROJECTS

Building name	Significance	Necessary activities	Status/progress	Priority/ Emergency due to risks of damages	Estimated budget EUR/MKD
Building with Arches	Exceptional				
excavations		excavations in the large hall for the purpose of conservation		urgent	10000 EUR 616.800 MKD
projects to be prepared for:		walls	ongoing	urgent	3500 EUR 215.900 MKD
		marble wall decoration	technical documentation and project design	low priority	5500 EUR 340.000 MKD
		shelter with visitors path	project design	medium priority	15000 EUR 925.000 MKD
conservation/ restoration		walls		urgent	180000 EUR 11.101.801 MKD*
		marble elements		low priority	30000 EUR 1.851.000 MKD*
		shelter with visitors path		medium priority	impossible to estimate without the project
preventive measures		sectile floors		medium priority	5000 EUR 308.400 MKD
Episcopal Basilica and the Baptistry	Very important				
excavations		south aisle		urgent	10000 EUR 616.800 MKD
projects to be prepared for:		new shelter and visitors path	development of the project	urgent	20000 EUR 1.233.540 MKD
		walls of the sw annexes and tomb	technical documentation and project preparation	urgent	4000 EUR 246.710 MKD
		marble elements	technical documentation and project preparation	medium priority	3000 EUR 185.000 MKD
		support for the altar and mosaic floor in the south aisle	technical documentation and project preparation	medium priority	4000 EUR 246.710 MKD
conservation/ restoration		shelter and visitor's path		urgent	impossible to estimate without the project

		walls of the sw annexes and the tomb		urgent	40000 EUR 2.468.000 MKD
		marble elements and altar		medium priority	20000 EUR 1.233.600 MKD
		support for the altar and mosaic floor		medium priority	52000 EUR 3.207.200 MKD
		frescoes from the south wall	completion of the conservation	urgent	7000 EUR 431.800 MKD
Theatre	Very important				
excavations		east half of the summa cavea	ongoing	urgent	200000 EUR 12.335.334 MKD*
		west half of the Theatre		medium priority	350000 EUR 21.586.836 MKD*
projects to be prepared for:		west half of ima cavea	technical documentation and project preparation	medium priority	4000 EUR 246.710 MKD
		marble elements of the scene building		medium priority	5000 EUR 308.383 MKD
conservation/ restoration		east half of the summa cavea and scene building	ongoing		400000 EUR 24.670.700 MKD
		restoration of the marble seats in the east half of ima cavea		urgent	1800000 EUR 111.018.014 MKD*
		west half of the ima cavea including marble seats		medium priority	600000 EUR 37.006.004 MKD*
		marble elements of the scene building			200000 EUR 12.335.340 MKD*
The Complex around the Temple of Isis	Very important				
excavations		on the whole east-southeast part of the complex	ongoing	medium priority	
projects to be prepared for:		walls of the east-southeast part of the complex	technical documentation and project preparation	medium priority	
conservation/ restoration		walls of the east-southeast part of the complex			impossible to estimate without the project
Casa Romana	Very important				

excavations		for the purpose of conservation	cleaning of the whole area	urgent	3000 EUR 185.000 MKD
projects to be prepared for:		walls	technical documentation and project preparation	urgent	5000 EUR 308.400 MKD
		wall decoration/ stucco and fresco	technical documentation and project preparation	medium priority	1500 EUR 92.515 MKD
conservation/ restoration		walls		urgent	20000 EUR 1.233.600 MKD
		wall decoration/ stucco and fresco		medium priority	15000 EUR 925.150 MKD
Prison	Very important				
excavations		for the purpose of conservation	cleaning of the area	urgent	3000 EUR 185.000 MKD
projects to be prepared for:		walls of the prison	technical documentation and project preparation	urgent	2500 EUR 154.192 MKD
conservation/ restoration		walls of the prison		urgent	20000 EUR 1.233.600 MKD
Northwest fortification wall	Very important				
excavations		for the purpose of conservation		urgent	within the conservation project
projects to be prepared for:		project is prepared		/	/
conservation/ restoration		curtain walls and towers 325 m + 5 towers		urgent	830000 EUR 51.191.639 MKD*
Cemetery Basilica	Very important				
excavations		for the purpose of conservation	cleaning of the whole area	urgent	3000 EUR 185.000 MKD
projects to be prepared for:		walls and tombs	technical documentation and project preparation	urgent	3000 EUR 185.000 MKD
conservation/ restoration		walls and tombs		urgent	70000 EUR 4.317.367 MKD

Residential and Commercial Quarter from the 6th century	Very Important	no activity			
excavations		for the purpose of conservation (in several phases)	cleaning the area	high	20000 EUR 1.233.540 MKD
projects to be prepared for:		walls	technical documentation and project preparation	high	3500 EUR 215.870 MKD
conservation/ restoration		walls		high	100000 EUR 6.167.670 MKD
Synagogue Basilica	Very important				
excavations		/	cleaning	medium priority	2000 EUR 123.360 MKD
projects to be prepared for:		walls		medium priority	1000 EUR 61.680 MKD
		mosaic floor (?)	strategy needed		
conservation/ restoration		walls		medium priority	8000 EUR 493420 MKD
House of Peristeria	Very important				
excavations		cleaning for the purpose of cons. in the W part of the house		high	10000 EUR 616.800 MKD
projects to be prepared for:		walls in the west part of the house		high	5000 EUR 308.400 MKD
conservation/ restoration		walls in the west part of the house		high	100000 EUR 6.167.670 MKD
House of Parthenius	Very important				
excavations		small scale excavations in the south rooms		high	3000 EUR 185.000 MKD
projects to be prepared for:		walls in the western half of the house		urgent	1000 EUR 61.680 MKD
conservation/ restoration		walls in the west and south part of the house		urgent	70000 EUR 4.317.367 MKD
mosaic floor		ongoing conservation		high	

Theodosian Palace	Very important				
excavations		/	/	/	/
projects to be prepared for:		walls in the western and southern part of the house		urgent	800 EUR 49.341 MKD
		mosaic floors		medium priority	1500 EUR 92.515 MKD
conservation/ restoration		walls in the western and southern part of the house		urgent	100000 EUR 6.167.670 MKD
		mosaic floors		medium priority	20000 EUR 1.233.540 MKD
		marble elements cleaning and consolidation		medium priority	3000 EUR 185.000 MKD
Casino	Very important				
excavations		small scale excavations in the court for the purpose of conservation.		high	3500 EUR 215.870 MKD
projects to be prepared for:		walls in the court and northern part of the house		urgent	4000 EUR 246.710 MKD
conservation/ restoration		walls in the court and northern part of the house		urgent	100000 EUR 6.167.670 MKD*
Episcopal Residence	Very important				
excavations		for the purpose of identification of the building phases and con.		urgent	7000 EUR 431.740 MKD
projects to be prepared for:		walls		urgent	2500 EUR 154.190 MKD
conservation/ restoration		walls		urgent	hard to estimate prior to establishing the building phases and strategy for conservation

Semicircular Court and shops along Via Sacra	Very important				
excavations		for the purpose of conservation		urgent	5000 EUR 308.400 MKD
projects to be prepared for:			project is prepared	/	/
conservation/ restoration		walls	to be completed	urgent	20000 EUR 1.233.540 MKD
North Basilica	Very important				
excavations		/	/	/	/
projects to be prepared for:		the atrium		urgent	2500 EUR 154.190 MKD
conservation/ restoration		the atrium		urgent	15000 EUR 925.150 MKD
lichen treatment		lab and field testing	foreign expert	urgent	10000 EUR 616.800 MKD
lab analysis		petrographic analysis and origin of stones and marble		low priority	3000 EUR 185.000 MKD

* In phases

