EDICULA

Educational Digital Innovative Cultural heritage related Learning Activities

Project Code: 2020-1-EL01-KA203-079108

NATIONAL TECHNICAL UNIVERSITY OF ATHENS [GREECE]

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ISRAEL ANTIQUITIES AUTHORITY [ISRAEL]

HELLENIC RESEARCH INSTITUTE OF THE ALEXANDRIAN CIVILIZATION [GREECE]

INTELECTUAL OUTPUT: **O5 EDICULA SYNTHESIS**
DELIVERABLE: **D5.1 Educational analysis of the innovation of the Holy Sepulchre research**
LEAD ORGANIZATION: NTUA
DATE: 31 August 2023

Co-funded by the Erasmus+ Programme of the European Union

Table of contents:

1. Introduction

This deliverable elucidates the educational aspects of the innovation in the Holy Sepulchre research. It identifies the appropriate educational approaches in transferring innovation per discipline and per professional background.

This deliverable is related to **Task 5.1: Learning from the innovation of the Holy Sepulchre research.**

The educational analysis of the innovation of the Holy Sepulchre research (D5.1) has been developed, discussed and evaluated in all multiplier events: Primarily within TMM_2018 Innovation session, E3 "EDICULA Innovation session and EDICULA Educational session" in December 2021 within TMM_CH 2021. This analysis has been ameliorated during the E1 "Jerusalem hands-on workshop" in April 2022 and the E2 "Alexandria Immersive workshop" in June 2022. It was finalized in March 2023 within specific panels of TMM_CH 2023, so that it can go in depth through the collaborative work of European and international scholars.

2. The exemplary project of the Holy Aedicule rehabilitation

The Holy Aedicule is a monument of unique value for the Christian World and not only, emblematic for the values it transmits to humanity across borders. It is an achievement which highlights Greek and European Know-how, Innovation and Expertise in the field of cultural heritage protection. Through the interest and media coverage it attracted, it has demonstrated Greece and Europe's position as a world leader in the digital transformation of the Cultural Heritage "Industry". It still functions as a flagship for Europe in relation to objectives related to digitally-driven interdisciplinary cultural heritage protection. As demonstrated in the rehabilitation of the Holy Aedicule, Cultural Heritage has a potential to tear down walls, borders and stereotypes by fostering dialogue and freedom in exchange of ideas, practices and people. The Holy Aedicule rehabilitation project, as well as the social accessibility achieved, highlights the role of Cultural Heritage protection in contributing to cultural, religious and social inclusion and openness towards a multicultural and tolerant World.

2.1 The Holy Aedicule rehabilitation as a source of innovation

The Holy Sepulchre rehabilitation has served as a prime use case, where innovation was the multiplier lever for identifying the crucial parameters and supporting the best solutions to the challenges posed. Moreover, the stages of rehabilitation demanded the continuous and dynamic application of innovation in order to address emerging engineering challenges.

The Holy Sepulchre rehabilitation has demonstrated that it is not always feasible to have all data available. However, through the application of innovation and scientific and engineering thinking, appropriate solutions can be developed, adjusted as required and evaluated regarding their effectiveness throughout all stages of the research. In this framework, the Holy Sepulchre research functions as a prime course that demonstrates the effectiveness of innovation supporting the problem-based learning.

2.2 Innovation serving as the enabling factor to successfully address the various challenges in the field of Cultural Heritage protection and enhance its sustainability

This was demonstrated by the scientific and engineering achievements in the project of the Holy Aedicule rehabilitation, where a holistic approach was adopted to reach the project objectives.

In particular, the innovative methodology contributed to the rehabilitation project's goals to:

- ensure structural integrity, compatibility, performance of materials & interventions
- preserve and highlight the values
- ensure sustainability

Innovation has been catalytic for the rehabilitation of the Holy Aedicule in:

- selecting and designing compatible and effective materials
- prospecting the non-visible layers of the Aedicule as a major tool for its rehabilitation
- the geometric and digital documentation
- the assessment of effectiveness of the grouting materials and procedure by advanced NDT to facilitate decision making
- ensuring the structural integrity
- revealing and interpreting findings to preserve and highlight the values of the monument, i.e.
    - the burial monument's morphology
    - archaeometric results stemming all historic periods from the Constantinean era to Byzantine, Crusaders, Renaissance and Komnenos restoration eras
    - metagenomics and bioinformatics: Microbioat characterization of building materials of high historical and archaeological significance
    - the frescoes of the chamber of the tomb
    - the exterior façade inscriptions
    - historic representation of the Holy Aedicule evolution by digital correlations
    - archaeological semantics of the underground area of the Holy Sepulchre Church
- ensuring sustainability in the pilgrim's attitude
- risk assessment approach, i.e.
    - reversing the connected risks and ensuring sustainability
    - 3D digital non-destructive prospection of underground risks
    - 3D geometrical documentation of underground environment
    - foundation interventions proposed for the underpinning, reinforcement, water and humidity control
    - multimodal performance health monitoring
- minimum invasive and maximum compatibility and performance with historical materials and structures

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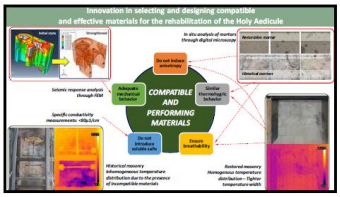
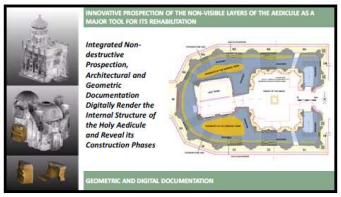
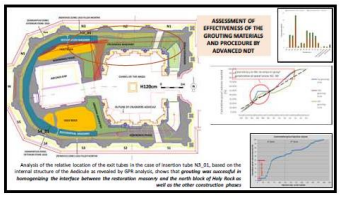
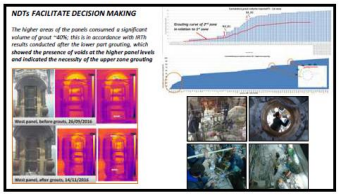
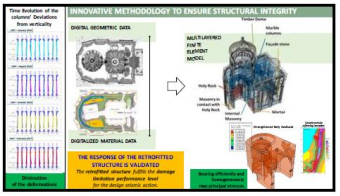
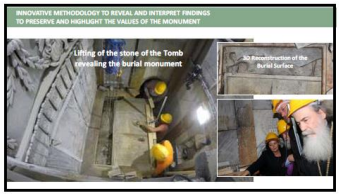


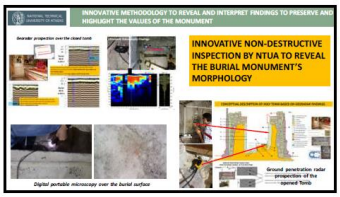


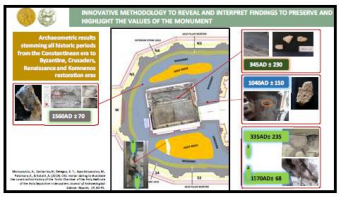


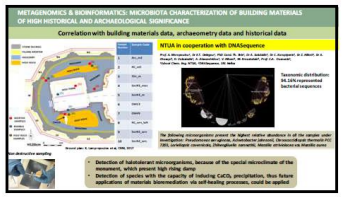


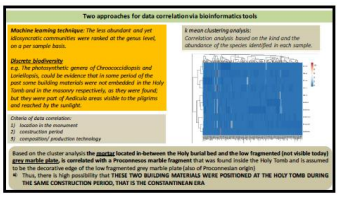


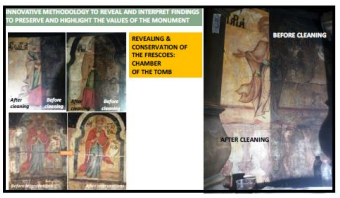


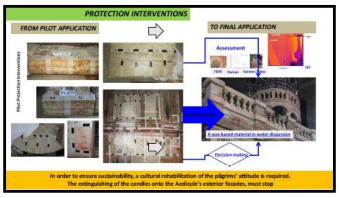


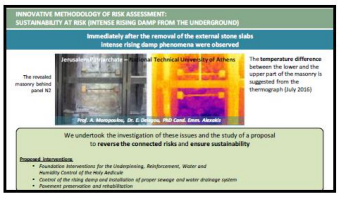


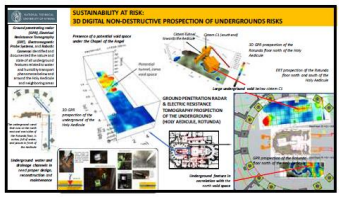


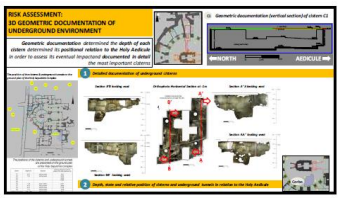


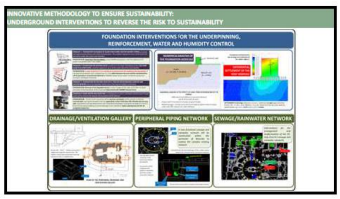


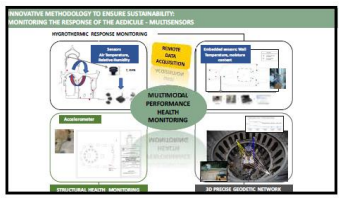


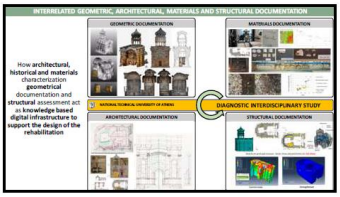


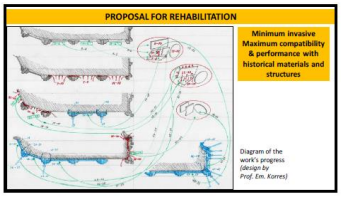


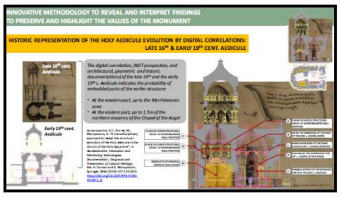


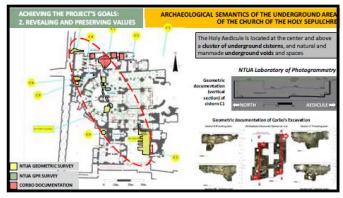










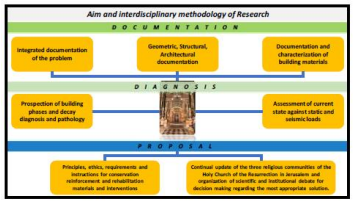


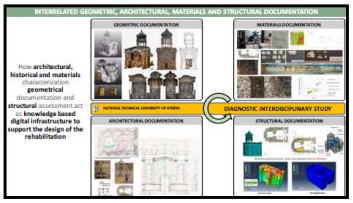
2.3 Dynamic digital documentation as a core space of integration

This interdisciplinary project, within a holistic approach, merges capabilities and know-how from the scientific fields of architecture, civil engineering, surveying engineering, materials science and engineering, information technology, archaeometry and archaeology.

Throughout the project, innovative and high-measuring technologies were applied - with emphasis on non-destructive techniques - to fully document the Holy Aedicule, assess its state of preservation, identify the causes of the observed damages, and monitor all rehabilitation interventions.

Architectural, historical and materials characterization, geometric and architectural documentation and structural assessment act as knowledge based digital infrastructure to support the design of the rehabilitation. Thus, a fragmented approach by merging all necessary information through the 3D data, and the optimization of planning of all stages of the rehabilitation works while addressing case-specific limitations, provides the basis for transdisciplinarity.

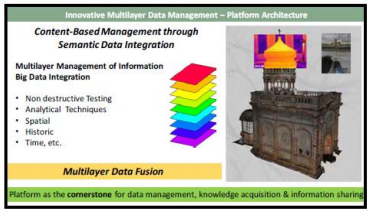




2.4 Innovative multilayered data management

In cooperation with RESPECT Project “An exemplary information system and methodology for the integrated management, analysis and dissemination of digital cultural heritage data coming from the rehabilitation of the Holy Aedicule of the Holy Sepulchre” (Project T2EDK-03741) an integrated Information System Platform has been created:

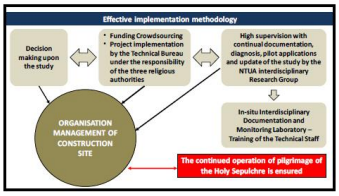
- establishing and developing transdisciplinarity
- utilizing the information created through the rehabilitation project
- setting interelationships
- creating a digital infrastructure where information can be assigned spatially for further correlation with others
- offers modular functionalities
- standing extendable, applicable to other cases, transferable

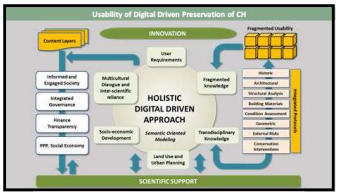


2.5 Scientific support to decision making

The integrated scientific management of the project has been recognized as the only prerequisite that can successfully face the risks and uncertainties that arise during the progress of the works.

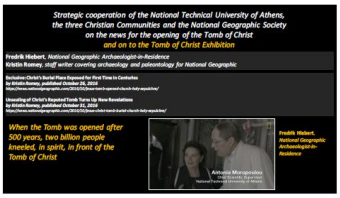
Continuous scientific documentation, monitoring and assessment of all acquired data, in real scale and real time comprises the scientific support to decision making. Hence, the integrated governance of the project is achieved on the basis of the study, as well as the scientific reports throughout the implementation of the study.

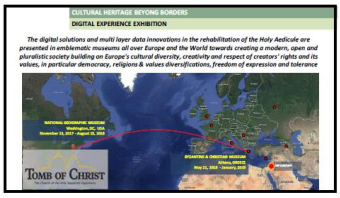




2.6 Innovation enhancing social accessibility: Bringing the world to the tomb of Christ

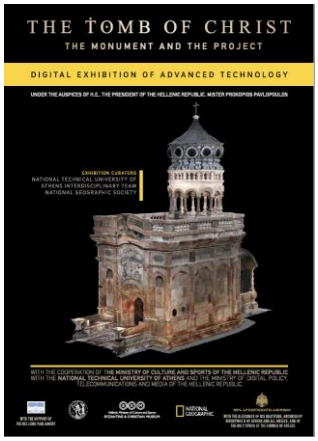
Innovation through digital solutions and multi-layer data management in the rehabilitation of the Holy Aedicule has enabled strategic cooperations, such as with the National Geographic Society, in order to present a digital exhibition experience of the rehabilitation project and the Tomb of Christ, highlighting values of creativity, democracy and freedom of expression, while respecting religions and values diversifications.





A Digital Exhibition of Advanced Technology "The Tomb of Christ: the monument and the rehabilitation works of the Holy Aedicule of the Holy Sepulchre" was held at the Byzantine and Christian Museum in Athens from May 21st, 2018 until January 31st, 2019, under the cooperation of the Ministry of Culture and Sports of Greece and the National Technical University of Athens with the Ministry of Digital Policy, Telecommunications and Media of Greece, under the auspices of the Presidency of the Hellenic Republic, and the Hellenic Parliament.

The exhibition is based on the scientific material that the National Technical University of Athens Interdisciplinary Team has produced for the design and scientific supervision of the Holy Aedicule's rehabilitation, and the interactive exhibition "Tomb of Christ" that is being held at the National Geographic Museum in Washington DC, since November 15th 2017 until the end of August 2018.

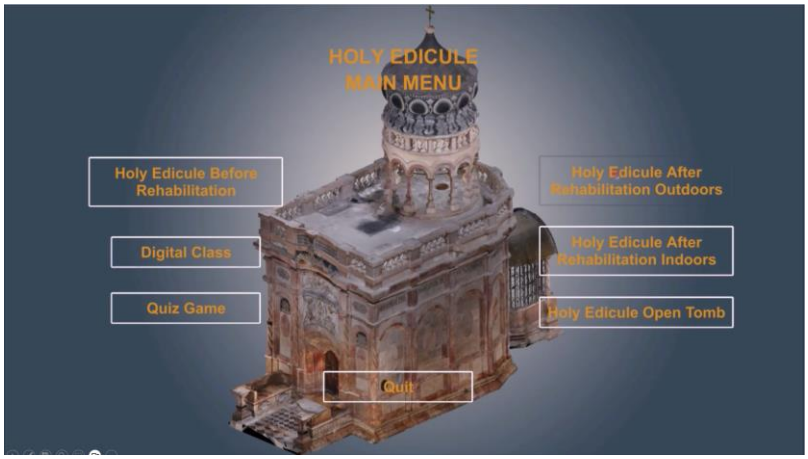


3. Educational analysis of the innovation of the Holy Sepulchre Research

Innovation is not perceived in EDICULA as a self-rationale, but as an enabling process of implementing a synthetic approach in addressing comprehensive technical, scientific and social challenges. In this context the ever-continuing Holy Sepulchre research serves as the basis of designing appropriate educational tools (see O1) that cover the wide range of relevant issues in cultural heritage protection and rehabilitation, but more important introduce to students and educators the advantages of high-quality data creation and retrieval with state-of-the art non-destructive, analytical and computational methods and techniques. Indeed, some of these tools were presented in E1 and E2 multiplier events and are the focus of hands-on education (O3), where the students, educators and general public are acquainted with the information these tools can provide within the boundaries of a complex technical project of social significance.

3.1 Educational approach through digital games

The innovation applied and created as part of the Holy Sepulchre research is also reflected in the EDICULA digital games (O4), forming the core element of such an educational approach. More importantly, the project digital content and systematic organization of multidisciplinary data serves to support the creation of effective games that present the achievements of the Holy Sepulchre project in a more “public-friendly” attitude. Indeed, the main lesson from the Innovation of the Holy Sepulchre, and the one which EDICULA is focusing on, is the need to fuse various data in a three-dimensional digital environment of analysis. Innovation, thus, is a fundamental factor of a multilevel, scientific/technical/political management methodology, which is scientifically concise and applicable in real time, and which serves as a core tool for transferring Innovation to Society, through Education.



4. Multiplier Event E1 the Holy Sepulchre Hands-on Experience

The Holy Sepulchre Hands-on Experience is a multiplier event that was organized in Jerusalem. Jerusalem is One Land, Two Peoples and Three Monotheistic Religions, and reflects the message of unity through development. Thus, it has been the ideal environment to teach that innovation is the amplifier of research towards sustainability.

Innovation oriented educational synthesis has the context of embedding, within the learning experience, the process of utilizing innovation to address scientific and engineering challenges, and functioning as a synthesis tool that fuses and merges multilevel knowledge into effective solutions. New knowledge that has been produced within the emblematic project of the exceptional rehabilitation of the Holy Aedicule of the Holy Sepulchre in Jerusalem and its urban context has served as the prime outcome that strongly supports this transformation, where interdisciplinarity, effectiveness, transparency, holistic and digital integration of fused data and social acceptance have advanced the field of protection of monuments.

The selected name for the Multiplier Event “The Historic City of Jerusalem, The Holy Sepulchre: A Hands-on Experience” clearly demonstrates this vision.

The Event was under the responsibility of Bezalel Academy of Arts and Design as the leading organization, with a close collaboration of the Israel Antiquities Authority. Both institutions served as the Local Organizing Committee. The National Technical University of Athens and Sapienza University of Rome, as well as the Hellenic Research Institute of Alexandrian Civilization and PerpetielSI SRL, were among the participating organizations.

The main case study was the Holy Sepulchre with an additional case study in Jerusalem. The participants were mainly from two groups:

- BEZ students with a strong architectural background
- IAA experts with a strong archaeological research background

Starting on Sunday April 3rd, 2022 in the morning and ending on Wednesday April 6th, 2022 at noon, the General Program of the Multiplier Event was designed for three and a half days. The Program included three main aspects:

- Setting and Context [one-day activity assigned on the first day], connected to a Public Event [set on the evening of the second day]
- Hands-on Experience [one and a half day assigned on the second and part of the third day]

- Workshop summary and Transnational Project Meeting [two half days assigned on the third and fourth days]

4.1 E1 Setting and Context

The first part of Multiplier Event E1 was devoted to Setting and Context. Getting acquainted with the many conservation and preservation aspects of the Rehabilitation Project of the Holy Aedicule and getting familiar with the Old City of Jerusalem, its cityscape within the walls and its multi-layered historic character. Understanding the setting of the Holy Sepulchre in the Cristian Quarter, and the Holy Aedicule within the Holy Sepulchre – the Historic Monument. All those characteristics were emphasized by means of an urban walk from Jaffa Gate to the Holy Sepulchre followed by a tour of the Greek Orthodox complex surrounding the Historic Monument. Setting and Context also required an in-depth site visit to the Holy Sepulchre and the Holy Aedicule, as the prime case study of the EDICULA Project.

Setting and Context included a visit at the Tower of David Museum by means of a two hour tour of the complex: a Multi Period Cultural Heritage Site, situated at the meeting point between the Eastern and Western parts of the city, expressing the continuing dialogue between ancient and modern Jerusalem with many uses of one space through history, posing ongoing architectural, conservation and preservation challenges. Welcoming all communities by emphasizing the importance of Jerusalem to Judaism, Christianity, and Islam.

The second part of the Setting and Context was devoted to a series of professional lectures given by the NTUA Team, intended to deepen the information initially provided during the keynote lecture at the opening of the day, regarding the Rehabilitation Project of the Holy Aedicule. The General Manager of the Tower of David Museum concluded the day with a short lecture on aspects of real-life dilemma's arising during the latest rehabilitation project of the complex. The day was concluded with a Daily Summary.

The Citadel – Tower of David Museum Jaffa Gate, Old City of Jerusalem

10:00 - 10:20	Opening of the Multiplier Event in Jerusalem Architect A. Sela Wiener (BEZ)
10:20 - 10:50	Opening lecture: The Rehabilitation of the Holy Aedicule of the Holy Sepulchre Prof. A. Moropoulou (NTUA)
11:00 - 11:40	Urban Walk Prof. M. Turner (BEZ); Architect Y. Tzahor (IAA)
11:40 - 14:30	Site visit: The Historic Monument and its surroundings Dr. Architect Mitropoulos
14:30 - 15:30	Arrival to the Citadel (as a group) & Lunch Break
15:30 - 17:00	**Learning from the Holy Sepulchre and Holy Aedicule:** Dynamic integrated geometric documentation of the monument before, during and after the rehabilitation – Perspectives through RESPECT project Prof. A. Georgopoulos (NTUA) Non-destructive prospection of the Holy Aedicule's structural history within the Holy Sepulchre environment Dr. K. Lampropoulos (NTUA)

Characterization, archaeometry, archaeogene of building materials of the Holy Aedicule – Compatibility of conservation interventions

Dr. E. Delegou (NTUA)

17:00 - 17:30 Daily summary

4.2 E1 Jerusalem Public Event

The Public Event "The Historic City of Jerusalem, The Holy Sepulchre: A Hands-on Experience" took place on the Second Day of the Multiplier Event, on Monday April 4th 2022, between 18:00-20:00 (GMT+3) at the Hansen House in Jerusalem and live-streamed via Zoom as a Webinar.

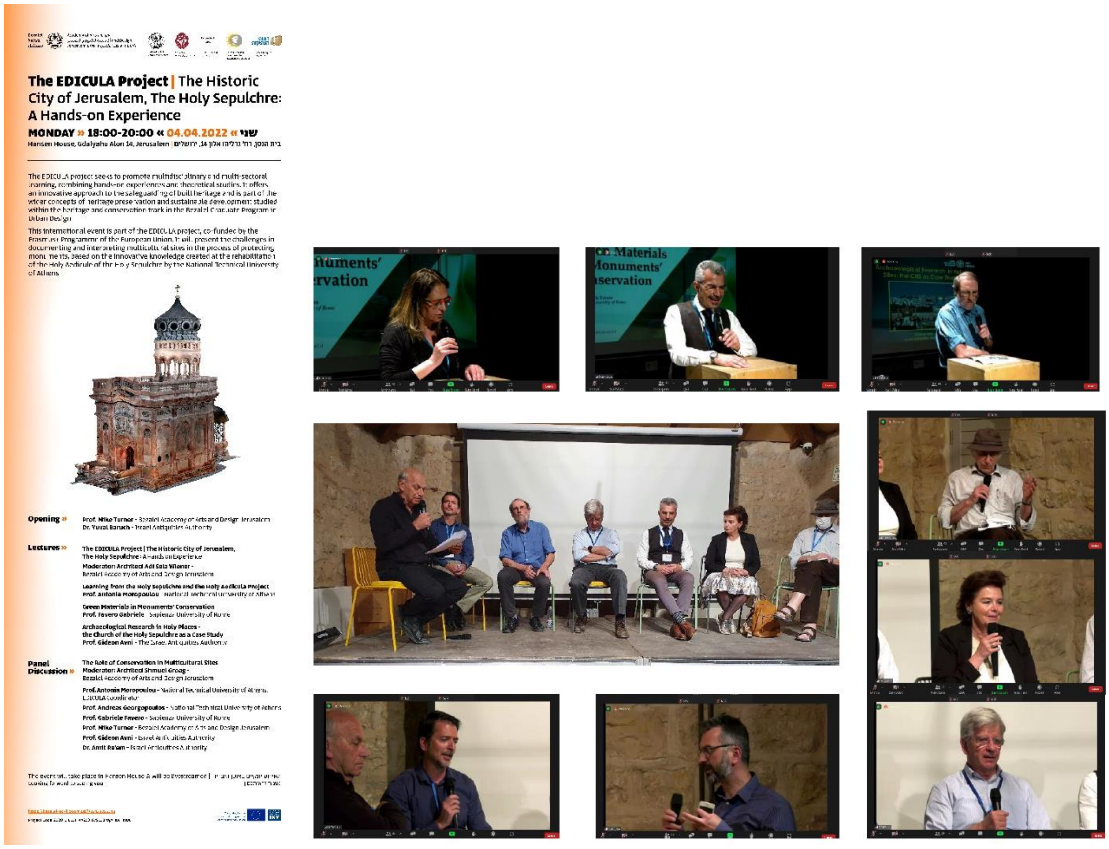
The Public Event composed of two parts – lectures followed by a panel discussion, presented the challenges in documenting and interpreting multicultural sites, as part of the process of protecting monuments, based on the innovative knowledge gained during the rehabilitation of the Holy Aedicule of the Holy Sepulchre by the National Technical University of Athens.

The EDICULA Project | **The Historic City of Jerusalem, The Holy Sepulchre: A Hands-on Experience**

Moderator: Architect Adi Sela Wiener

Opening	Prof. Mike Turner – Bezalel Academy of Arts and Design
	Dr. Yuval Baruch – Israel Antiquities Authority
Lectures	Learning from the Holy Sepulchre and the Holy Aedicula Project
	Prof. Antonia Moropoulou - National Technical University of Athens
	Green Materials in Monuments' Conservation
	Prof. Gabriele Favero - Sapienza University of Rome
	Archaeological Research in Holy Places – the Church of the Holy Sepulchre as a Case Study
	Prof. Gideon Avni – The Israel Antiquities Authority
Panel Discussion	The Role of Conservation in Multicultural Sites
	Moderator: Architect Shmuel Groag
	Prof. Antonia Moropoulou - National Technical University of Athens, EDICULA Coordinator
	Prof. Andreas Georgopoulos - National Technical University of Athens
	Prof. Gabriele Favero - Sapienza University of Rome
	Prof. Mike Turner - Bezalel Academy of Arts and Design
	Prof. Gideon Avni - Israel Antiquities Authority
	Dr. Amit Re'em - Israel Antiquities Authority

The recording of the public event is available at https://youtu.be/qRanZDwT-0c



5. Multiplier Event E2 The Alexandria Immersive Experience

The "EDICULA Immersive Event" has opened the discussion to other case studies. Innovative scientific methodologies developed within the emblematic rehabilitation of the Holy Aedicule of the Holy Sepulchre in Jerusalem mark future trends in the protection of cultural heritage.

The experience from the Holy Aedicule rehabilitation project demonstrated the array of issues related to CH protection and preservation, triggering a dynamic, open-minded, and multi-disciplinary discussion regarding the main thematic areas that are addressed in the EDICULA project, fusing experience from all partners.

The Alexandria Hands-on Workshop was organized between 1-3 June 2022 by the Hellenic Research Institute of Alexandrian Civilization (HRIAC), supported by the Patriarchate of Alexandria and all Africa, the Consulate General in Alexandria and the Hellenic Community of Alexandria.

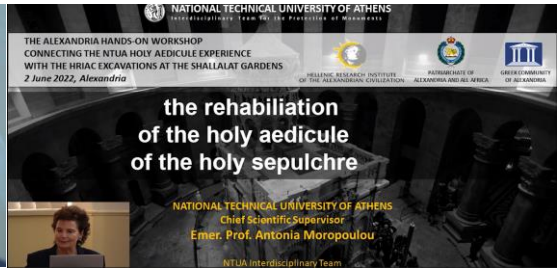
5.1 E2 Alexandria Public Event

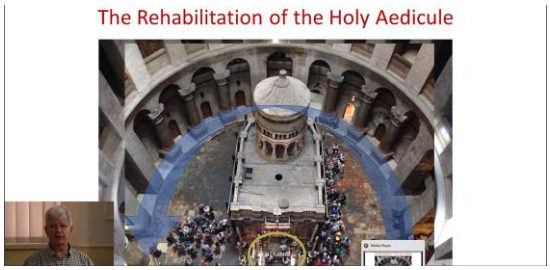
A public event was held on June 2nd, 2022 in HRIAC Library at the Greek District, within the framework of E2 Alexandria Immersive Experience

The rehabilitation of the Holy Aedicule of the Holy Sepulchre in Jerusalem was presented within the public event with the following presentations:

- Introductory speech by Dr. K. Papakosta
- Inaugurations: Representatives from the Patriarchate of Alexandria and all Africa, the Consulate General in Alexandria and the Hellenic Community of Alexandriaet als

- Prof. A. Moropoulou: The rehabilitation of the Holy Aedicule of the Holy Sepulchre in Jerusalem
- Prof. A. Georgopoulos, Dr. K. Lampropoulos: 3Dimensional geometric documentation of the Holy Aedicule and the RESPECT open access data platform: A challenge for EDICULA
- Dr. A. Delegou: Hands-on methodology in Protection of Monuments using Non Destructive Techniques
- Dr. K. Papakosta: The excavation works at the Shallalat Gardens in Alexandria. Meeting the innovations of the Holy Aedicule rehabilitation within EDICULA: New perspectives in excavation strategies





The event and the results of the workshop were recorded and were presented at the upcoming EDICULA "Educational Digital Innovative Cultural Heritage related Learning Alliance" Erasmus+ Multiplier Event in Athens.

6. Multiplier Event E3 EDICULA innovation and educational Sessions within TMM_CH Conferences

The EDICULA Innovation Sessions within 2021 and 2023 TMM_CH Conferences have addressed innovative scientific methodologies and challenging projects marking future trends in the protection of cultural heritage, initiating a universal conversation within a holistic approach, merging capabilities and know-how from the scientific fields of architecture, civil engineering, surveying engineering, materials science and engineering, information technology and archaeology, as well as heritage professionals on restoration and conservation and policy makers in cultural heritage.

The EDICULA Innovation Sessions within 2021 and 2023 TMM_CH Conferences have highlighted the combined utilization of digital documentation technologies with innovative analytical and non-destructive techniques, computational and digital techniques and archaeometric methods supporting the creation of a transdisciplinary multispectral modelling towards the sustainable preservation of cultural heritage. Thus, the EDICULA Innovation Sessions have enhanced and revealed a critical dimension of the preservation of cultural heritage along with social participation and communication.

The EDICULA Educational Sessions within 2021 and 2023 TMM_CH Conferences have functioned as a first-rate opportunity to apply innovation and latest technological advancements, while in parallel, preserving the values and the authenticity of monuments. This complex problem is a useful "case study" for education in

general, emphasizing the benefits of transdisciplinarity, the advantages of "engineering" thinking and interaction with social carriers and end users.

In these sessions a top to bottom educational approach were analyzed, in order to:

- apply the experience from the higher education curricula reformation into the secondary education, with emphasis in providing background skills for synthetic thinking.
- apply the experience from the educational toolkit development into the primary education, with emphasis in STEAM education
- apply the experience from the digital games into the lifelong education, and into the enrichment of the primary and secondary educational tools,
- promote a Joint Master Degree in the field of protection of monuments which is currently at early stages of development in the European educational area

The main guidelines of the EDICULA project were illustrated. The sessions have been an important opportunity to exchange ideas and to gather feedbacks from the stakeholders attending the conference. The results of O2 EDICULA curricula reformation were illustrated with respect to the established indicators (enrollments; graduated students; student satisfaction level, published scientific papers and contribution at scientific congresses, new research collaborations/projects) and to the criticalities that had been addressed.

6.1 E3 Innovation session within TMM_CH 2021

A Panel Discussion with the title: "The Holy Sepulchre rehabilitation project: An emblematic source of innovation" was organised by EDICULA within TMM_CH 2021 Conference on December 13th, 2021.

The Panel 1 Round Table Discussion was moderated by NTUA Professor Tonia Moropoulou and was attended by the Deputy Minister of Development and Investments, Christos Dimas, the Deputy Minister of Foreign Affairs responsible for Hellenism Abroad, Andreas Katsaniotis, Vicky Bafataki from the Sciacca International Awards, Bonnie Burnham from the Cultural Heritage Finance Alliance CHiFA and the World Monuments Fund, Fulgencio Sanmartín as a representative of the European Commission, Assistant Professor Adi Sela Wiener from the Bezalel Academy of Arts and Design, Dr . Kalliopi Limnaiou-Papakosta from the Hellenic Institute of Alexandrian Culture, Dr. Yotam Asscher from the Israel Antiquities Authority, Panagiotis Fouzas from the PerpetielSI company, and Associate Professor Gabriele Favero from the Sapienza University of Rome, who summarized the discussion.

The dynamics of the innovations introduced by the research, the study, the scientific supervision and the project for the rehabilitation of the Holy Tomb of the Holy Sepulcher at all levels were underlined.

The video has been uploaded to https://youtu.be/R7QZ0oXfugc

TMM 1321 CH

Panel discussion 1: The Holy Sepulchre rehabilitation project: An emblematic source of innovation *EDICULA Erasmus+ Strategic Partnership "Educational Digital Innovative CUltural heritage related Learning Activities"- Innovation Session*
Georgopoulos Andreas, Professor, National Technical University of Athens, School of Rural, Surveying and Geoinformatics Engineering – International Council of Monuments and Sites ICOMOS, Member of the Board – member of the NTUA Interdisciplinary Team scientific responsible for the Holy Aedicule's rehabilitation of the Holy Sepulchre in Jerusalem- **Rapporteur**
Bafataki Vicky, Journalist, Archaeologist – Giuseppe Sciacca International Awards, General Secretary
Sanmartín Fulgencio, Policy Officer at European Commission
Sela Wiener Adi, Adjunct Lecturer, Bezalel Academy of Arts and Design, Urban Design Master's Degree Program – ICOMOS Israel, Cultural Routes Scientific Committee, Cultural Routes – Edicula Consortium
Asscher Yotam, Israel Antiquities Authority, Artifacts Treatment and Laboratories Department, Analytical Laboratory, Director, Edicula Consortium
Papakosta Kalliopi, Archaeologist, Hellenic Research Institute of Alexandrian Civilization HRIAC – Head of the excavation at the Shallalat Gardens in Alexandria, Edicula Consortium
Salakidis Antonios, CEO PerpetielSI SRL, Edicula Consortium
Favero Gabriele, Associate Professor, Sapienza University of Rome, Master's Degree Programme, Science and Technologies for the Conservation of Cultural Heritage - Edicula Consortium
With the presence of His Beatitude, **Archbishop Hieronymus II of Athens and All Greece**

6.2 E3 Educational session within TMM_CH 2021

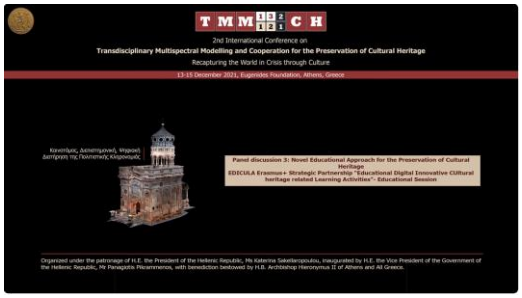
A Panel Discussion with the title: "Novel Educational Approach for the preservation of Cultural Heritage" was organised by EDICULA within TMM_CH 2021 Conference on December 13th, 2021.

The Panel 3 Round Table Discussion was moderated by NTUA Professor Tonia Moropoulou, and was attended by Professor Maria Arakadaki from the Aristotle University of Thessaloniki, Professor Kostas Karadimas from the National Technical University of Athens, Antonia Lampropoulou from the EDICULA Alliance, Lecturer Anna Koboviko-Katz from the Technion University of Technology in Israel, Dr. Paraskevi Pouli from the Technology and Research Foundation, Professor Mike Turner from the UNESCO "Urban Design and Conservation" Headquarters in Jerusalem, Professor Elisabetta Zendri from Ca' Foscari University of Venice, and Associate Professor Gabriele Favero from the University of Sapienza of Rome, who summarized the discussion.

The impact and transferability of the curricula reformation has been improved through interaction with other similar Master Programs.

Particular emphasis was placed on the transfer of know-how attempted by the EDICULA project with the University of Sapienza in Rome and the Bezalel Academy of Arts and Design in Jerusalem, and the corresponding seminar course was evaluated as a model of the NTUA Interdepartmental Postgraduate Program in "Monument Protection", which was jointly attended by postgraduate students of all three Universities. The next level of the transfer of know-how was onsite at the excavation in the Shallalat Gardens in Alexandria, under HRIAC's responsibility.

The video has been uploaded to https://youtu.be/GnCc85TWWyk?si=x5dcV07dgs7jVMEU



13.12.21|15:00-16:30 Auditorium

Panel discussion 3: Novel Educational Approach for the Preservation of Cultural Heritage *EDICULA Erasmus+ Strategic Partnership "Educational Digital Innovative CUltural heritage related Learning Activities"- Educational Session*
Moropoulou Antonia, Professor, National Technical University of Athens, School of Chemical Engineering - EDICULA Erasmus+ Strategic Partnership Project Coordinator – **Moderator**
Arakadaki Maria, Associate Professor, Aristotle University of Thessaloniki, School of Architecture - AUTH Post-Graduate MSc Program "Protection, Conservation and Restoration of Civilization Monuments", Director
Caradimas Costas, Professor, National Technical University of Athens, School of Architecture - NTUA Post-Graduate MSc Program "Protection of Monuments", Director
Bakolas Stelios, Associate Professor, National Technical University of Athens, School of Chemical Engineering - NTUA Post-Graduate MSc Program "Protection of Monuments" Direction "Materials and Conservation Interventions", Studies Director
Lampropoulou Antonia, National Technical University of Athens - EDICULA Erasmus+ Strategic Partnership, Evaluator of Curricula Reformation
Lobovikov-Katz Anna, NB Haifa School of Design, Senior Lecturer - Technion Israel Institute of Technology, Teaching Fellow (Senior Lecturer)
Pouli Paraskevi, Researcher, Foundation for Research and Technology-Hellas, Institute of Electronic Structure and Laser FORTH-IESL – OPTO-CH summer courses
Turner Mike, Professor, Bezalel Academy of Arts and Design Jerusalem - UNESCO Chair in Urban Design and Conservation Studies - EDICULA Erasmus+ Strategic Partnership, Steering Committee member
Zendri Elisabetta, Associate Professor, University Ca' Foscari of Venice, Department of Environmental Engineering, Informatics and Statistics - University Ca' Foscari of Venice MSc Program "Conservation Science and Technology for Cultural Heritage", Coordinator
Favero Gabriele, Associate Professor, Sapienza University of Rome, Master's Degree Programme, Science and Technologies for the Conservation of Cultural Heritage - EDICULA Erasmus+ Strategic Partnership, Steering Committee member – **Rapporteur**

6.3 E3 EDICULA Session within TMM_CH 2023

A Panel Discussion with the title: "The Holy Sepulchre rehabilitation project Transdisciplinarity and innovation in research and education" was organised by EDICULA within TMM_CH 2023 Conference on March 20th, 2023.

With the positions of the representatives of the Postgraduate Programs for the Protection of Cultural Heritage, Prof. Gabriele Favero from the University of Sapienza in Rome, Prof. Danielah Smits Possek from the Bezalel Academy of Arts and Design in Israel, Prof. Emeritus Ioanna Papagianni from the Aristotle University of Thessaloniki, Prof. Maria Stavroulaki from the Technical University of Crete, Prof. Christos Stavrakos from the University of Ioannina, Prof. Nikolaos Zacharias from the University of Peloponnese, and Prof. Andreas Georgopoulos from the National Technical University of Athens, the discussion was concluded by the Rapporteur, Mrs. Antonia Lampropoulou, EDICULA representative, and ended in the common acceptance of the need to form a research and education hub in the Mediterranean, for the sustainable

preservation of cultural heritage, with open workshops in the historic cities of the Mediterranean, such as Athens, Rhodes, Jerusalem, Alexandria, Rome, Venice and others. The representative of the European Commission, Mr. Sanmartin Fulgencio, underlined the need for synergy with the 4CH Competence Center for the Conservation of Cultural Heritage, in this direction, while the President of the European Society for Engineering Education SEFI, Prof. Hannu-Matti Järvinen, undertook to investigate which Polytechnic Schools would like to cooperate as a pilot in order to experimentally apply the educational toolkit created in the framework of the Erasmus+ EDICULA program.

The video has been uploaded to https://www.youtube.com/watch?v=0TkgHPEF2N0

TMM 2023 CH

20.03.23|16:00-18:30 **Auditorium**

Panel discussion 4: The Holy Sepulchre rehabilitation project: Transdisciplinarity and innovation in research and education ***EDICULA Erasmus+ Strategic Partnership "Educational Digital Innovative CUltural heritage related Learning Activities"***
Moropoulou Antonia, Professor, National Technical University of Athens, School of Chemical Engineering - Head of the NTUA Interdisciplinary Team and Chief Scientific Supervisor of the Holy Aedicule's rehabilitation in the Holy Sepulchre in Jerusalem - **Moderator**
Dimas Christos, Deputy Minister for Research and Innovation, Ministry of Development and Investments of the Hellenic Republic
Hiebert Fredrik, Dr. Archaeologist at the Project as National Geographic Society
Favero Gabriele, Professor, Sapienza University of Rome, Master's Degree Programme, Science and Technologies for the Conservation of Cultural Heritage - EDICULA Erasmus+ Strategic Partnership, Steering Committee member
Sanmartín Fulgencio, Policy Officer at European Commission, Competence Centre for Conservation of Cultural Heritage
Smits Possek Danielah, Architect, Bezalel Academy of Arts, School of Architecture, Master's Program in Urban Design Studies, Head
Järvinen Hannu-Matti, Professor Tampere University, President of SEFI European Society for Engineering Education
Belavilas Nikolaos, Professor, National Technical University of Athens, School of Architecture - NTUA Post-Graduate MSc Program "Protection of Monuments", Director
Bakolas Stelios, Associate Professor, National Technical University of Athens, School of Chemical Engineering - NTUA Post-Graduate MSc Program "Protection of Monuments" Direction "Materials and Conservation Interventions", Studies Director
Papayianni Ioanna, Professor Emeritus, Aristotle University of Thessaloniki, School of Civil Engineering - MSc Program "Protection, Conservation and Restoration of Civilization Monuments" representative
Georgopoulos Andreas, Professor of National Technical University of Athens, Board member of the International Council of Monuments and Sites ICOMOS
Maravelaki Pagona-Noni, Professor, Technical University of Crete, School of Architecture – MSc Program "Protection, valorization and conservation of Monuments and Sites", representative
Stavrakos Christos, Professor, University of Ioannina Governing Council, Department of History and Archaeology – MSc Program "Byzantine Studies", Secretary General of the International Association of Byzantine Studies
Zacharias Nikos, Professor, University of Peloponnese, Department of History, Archaeology and Cultural Resources Management - School of Humanities and Cultural Studies, Dean – MSc Program "Cultural Heritage Materials and Technologies", Director
Lampropoulou Antonia, National Technical University of Athens - EDICULA Erasmus+ Strategic Partnership - **Rapporteur**