

EDICULA

Educational Digital Innovative Cultural heritage related Learning Activities

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INTELLECTUAL OUTPUT:
DELIVERABLE:
LEAD ORGANIZATION:
DATE:

O1 EDICULA EDUCATIONAL TOOLKIT
D1.7 Dissemination of EDICULA toolkits
NTUA
31 August 2023



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1. Introduction

This deliverable presents the means, and a short presentation for each, by which the EDICULA Toolkit was disseminated. In particular, the various papers, events, conferences, press releases, and social media will be presented and briefly analyzed.

2. Dissemination of EDICULA Toolkit

EDICULA educational toolkit is an open-source educational platform addressing key issues in monuments' rehabilitation, disseminating gained knowledge to stakeholders, while promoting a holistic transdisciplinary documentation. The open e-courses platform are educational-oriented to disseminate and educate regarding state-of-the-art scientific transdisciplinary methodologies. The educational toolkit aims to raise awareness and provide an educational channel for access to innovation. In order to introduce and disseminate the EDICULA Toolkit to the wide audience, scientists and experts, a number of actions were realized.

The screenshot shows the Edicula Educational Platform interface. At the top, there is a navigation menu icon and the text "Edicula Educational Platform" on the left, and "You are not logged in. (Log in)" on the right. Below this is a header section with the EDICULA logo. The main content area is divided into several sections:

- Search courses:** A search bar with a "Go" button and a help icon.
- Courses:** A list of four main categories:
 - ▶ [A] ANALYSIS OF CH ASSET
 - ▶ [B] DECISION MAKING
 - ▶ [C] INTERVENTIONS
 - ▶ [D] SUSTAINABILITY
 An "Expand all" link is visible to the right of the list.
- Calendar:** A calendar for October 2023, showing days of the week (Mon to Sun) and dates (1 to 31).
- Strategic Partnership Notice:** A text box stating: "EDICULA 'Educational Digital Innovative Cultural heritage related Learning Alliance' is a Strategic Partnership for Higher Education in Erasmus+. Strategic Partnerships aim to support the development, transfer and/or".

Figure 1: The EDICULA's Toolkit interface, showcasing the 4 main categories, under which there are many categories, papers, and material uploaded.



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2.1 Relevant scientific publications

The EDICULA Toolkit was presented in relevant scientific publications, in order to better analyze the architecture and logic behind the toolkit and the categories selected, as well as the process of the educational approach, which incorporates three general scientific categories: documentation, implementation, and management. Below is a list of the relevant scientific publications.

1. A. Moropoulou, K. Lampropoulos, I. Rallis, A. Doulamis. Scientific Architecture of the educational toolkit of the project EDICULA, in: *Transdisciplinary Multispectral Modeling and Cooperation for the Preservation of Cultural Heritage*, Eds. A. Moropoulou, A. Georgopoulos, A. Doulamis, M. Ioannides, A. Ronchi. Communications in Computer and Information Science, Springer Nature (2022), vol 1574 pp 3-16

← → ↻ 🔒 researchgate.net/publication/365739884_Scientific_Architecture_of_the_Educational_Toolkit_of_the_

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Chapter PDF Available


Scientific Architecture of the Educational Toolkit of the Project EDICULA

November 2022
DOI:[10.1007/978-3-031-20253-7_1](https://doi.org/10.1007/978-3-031-20253-7_1)

In book: *Transdisciplinary Multispectral Modelling and Cooperation for the Preservation of Cultural Heritage* (pp.3-16)

Authors:

-  **A. Moropoulou**
National Technical University of Athens
-  **Kyriakos Labropoulos**
National Technical University of Athens
-  **Ioannis Rallis**
National Technical University of Athens
-  **Anastasios Doulamis**
National Technical University of Athens



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Figure 2: Screenshot of the Paper “Scientific Architecture of the educational toolkit of the project EDICULA, in: Transdisciplinary Multispectral Modeling and Cooperation for the Preservation of Cultural Heritage” at Research Gate.

2. A. Moropoulou, K. Lampropoulos, St. Roumeliotis, A. Konstanti, A. Lampropoulou. Innovative and transdisciplinary educational approach through the EDICULA toolkit, in: *Transdisciplinary Multispectral Modeling and Cooperation for the Preservation of Cultural Heritage*, Eds. A. Moropoulou, H. Doukas, Ch. Ioannidis, S. Avgerinou-Kolonia, K. Lampropoulos. Technical Annals – International Scientific Journal in Advances in Engineering, Technical Chamber of Greece, Issue 3, July 2023 (in press)



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2.2 Dissemination at Chat Lab 2021

Chat Labs are online meetings, in the context of Researchers Night, aimed at the general public, in order to bring together the public with scientists and have the opportunity to ask questions directly to the source. During 2021, which was the first time Chat Labs were launched, a special session was organized related to the rehabilitation of the Holy Aedicule of the Holy Sepulchre in Jerusalem. As the EDICULA project is taking as a starting point the emblematic rehabilitation of Holy Sepulchre, the event also introduced EDICULA Toolkit.

Following the Detailed Program of Chat Lab 2021, and the link of the specific session:

2.2.1 Detailed Program of Chat Lab 2021



Researchers' Night at NTUA Friday

24 September 2021

**From 8 in the morning until night
National Technical University of Athens**

We keep our distance – we stay connected

Online Meetings Researchers' Night Chat Labs

The Researcher's Night at NTUA is launching a new activity this year, the Chat Labs online meetings, aimed at the general public. In a friendly atmosphere, the public will have the opportunity to ask their questions directly to the source!

Public participation will take place through [pre-registration](#) in a special form on the website of the Researcher's Evening at NTUA. The connection will be made through the webex platform.

Detailed Program

Monday 27 September 2021



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17:30-18:00 **@chat_with_the_rector**

The Polytechnic Community - and not only - has the opportunity to discuss with the Rector of NTUA, Professor Andreas Boudouvis, about Research and Innovation at the Institution.

Tuesday 28 September 2021

10:00-10:30 **Biomimicry: Innovation inspired by Nature**

Lessons by nature for sustainable solutions from the Service Learning Program of the Attica Zoological Park.

16:00-17:00 **The rehabilitation of the Holy Aedicule of the Holy Sepulcher**

The new knowledge acquired in the context of the emblematic rehabilitation project of the Holy Aedicule of the Holy Sepulcher in Jerusalem, by the NTUA Interdisciplinary Team, with Scientific Responsible Professor Emeritus Tonia Moropoulou – School of Chemical Engineering, and with Academician Manolis Korre – School of Architecture, Professor Andreas Georgopoulos - School of Rural & Surveying Engineering. Professor Kostas Spyarakos and Associate Professor Charis Mouzakis - School of Civil Engineering, exceeds the limits of Scientific Research and Education, is an offer to humanity and is in dialogue with Society.

Wednesday 29 September 2021

10:45-11:30 **A Journey to the beginning of the Universe: Live connection with CERN**

Live connection with the Experiment Control Rooms of the LHC (large Hadron Collider), of Large Hadron Collider at CERN. The questions from the public, pupils, teachers and students, are coordinated by the member of the CERN Greek Committee, NTUA Professor Nikos Trakas, Coordinator of the Greek Popularization Team.

15:30-16:00 **Odor Pollution: Education for Sustainable Development**

The Mediterranean Bureau and the international network on Education for Sustainable Development "MEdIES" present online educational tools on "Odor Pollution" aimed at primary and secondary teachers.



16:30-17:00

Biosafety – Bioethics

The President of the European Research Center for Bioethics and Law, former Rector of Panteion University, Professor Ismini Kriari, moderates a discussion with the participation of the junior researcher, Dr. Anastasia Hassapi (DNAsequence SRL), exploring the applications of new technologies in biosecurity, as well as the ethical, social and legal dimensions of life sciences and new technologies.

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Thursday 30 September 2021

19:00-19:30

The interactive relationship of academic journals with society

The Director of Signum Scientific Review, Kostas Theologou, Associate Professor of NTUA, discusses issues of social construction of knowledge, but also the academic obligation to intervene in the events.

Friday 1 September 2021

10:00-10:30

The Naval Battles of the Greeks

The Vice-Rector for Research and Lifelong Education NTUA, Ioannis Chatzigeorgiou, Professor of the School of Naval Mechanical Engineering NTUA, in the context of the celebration of the 200th anniversary of the Greek Revolution, presents the Naval Battles of the Greeks.



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18:00-18:30

Be one of the BEST

Discover with the student volunteer organization BEST (Board of European Students of Technology) how to develop skills to understand the international technological environment and get in touch with the job market, meeting polytechnic students from all over Europe.



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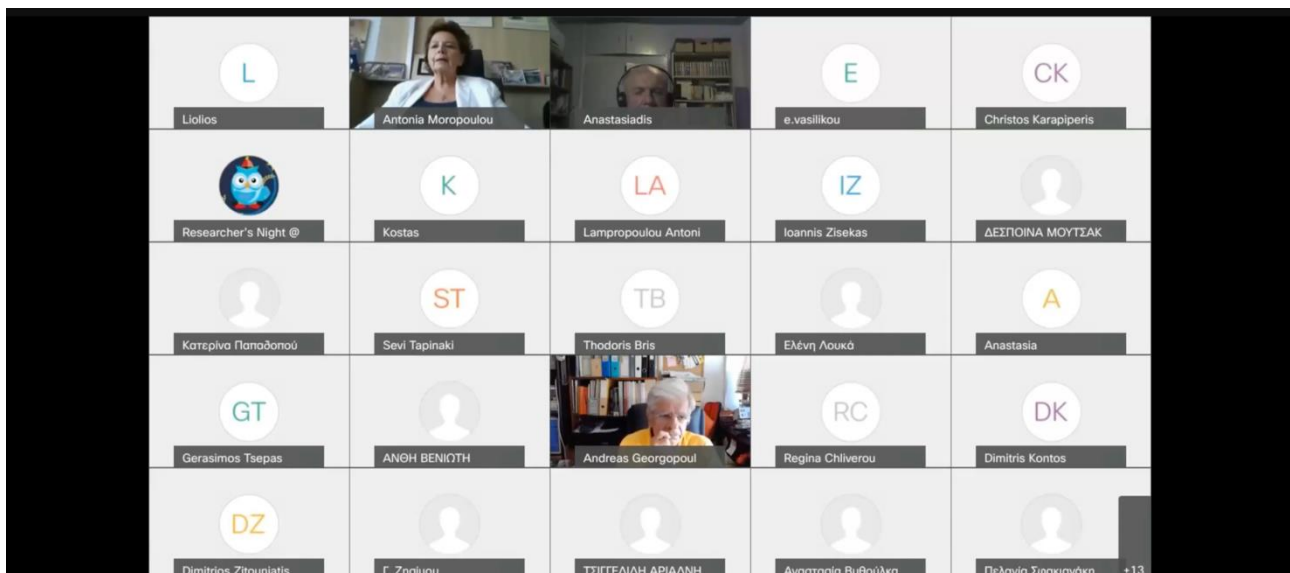


Subscribe at our channel at: <https://www.youtube.com/ntuaren>

2.2.2 Link of the Session

The Link of the Session “The Rehabilitation of the Holy Aedicule of the Holy Sepulcher” :

<https://www.youtube.com/watch?v=MzFcvLottbg&t=1s>



Chat Lab: Το έργο αποκατάστασης του Ιερού Κουβουκλίου του Παναγίου Τάφου



Βραδιά Ερευνητή ΕΜΠ
1.4 ν.λ. συντονισμένη

Εγγραφή

2



Κοινοποίηση



Λήψη



Όλα

Από Βραδιά Ερευνητή ΕΜΠ

Προβλήθηκαν

Figure 5: Screenshot of the Session related EDICULA Toolkit in the context of ChatLab 2021



2.3 Dissemination at the 3rd International Conference TMM_CH 2023

During the 3rd International Conference TMM-CH “Transdisciplinary Multispectral Modelling and Cooperation for the Preservation of Cultural Heritage Recapturing the World in Conflict through Culture promoting mutual understanding and Peace”, held on the 20-23rd of March 2023 at Eugenides Foundation Athens, Greece, a special panel discussion was dedicated to EDICULA, and the presentation of EDICULA Toolkit. Specifically, it was Panel Discussion 4 – “The Holy Sepulchre rehabilitation project: Transdisciplinarity and innovation in research and education”.

Following the Detailed Program of Panel Discussion 4, and the overview (video and pictures).

2.3.1. Detailed Program of Panel Discussion 4

| 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 | |
| <i>EDICULA Erasmus+ Strategic Partnership "Educational Digital Innovative Cultural heritage related Learning Activities"</i> | |
| 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 | |



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Figure 5: Detailed program of Panel Discussion 4

Link of the Conferences program: https://tmm-ch.com/files/TMM-CH2023_Program.pdf (Panel Discussion 4, page 9)

2.3.2 Overview of Panel Discussion 4

The full Overview of Panel Discussion 4, pictures and the video can be found under this link:

https://www.tmm-ch.com/gallery_panel4.php

The Panel Discussion 4 video can be also found under this link:

<https://www.youtube.com/watch?v=OTkgHPEF2N0>

2.3.3 Press release on Day 1 – Panel Discussions



PRESS RELEASE

3rd International Scientific Conference TMM_CH | First day of works

The National Technical University of Athens organized the 3rd International Scientific Conference **TMM_CH** under the subject θέμα « Transdisciplinary Multispectral Modelling and Cooperation for the Preservation of Cultural Heritage Recapturing the World in Conflict through Culture promoting mutual understanding and Peace» **from the 20th to the 23rd of March 2023 at Eugenides Foundation Athens, Greece**. The International Conference, with President Professor Emerita Antonia Moropoulou, co-organized with the Technical Chamber of Greece, in collaboration with international organizations and councils, scientific associations and cultural heritage protection bodies.

On the afternoon of the first day of the 3rd International Scientific Conference TMM-CH, Panel Discussion 4 took place on the topic " The Holy Sepulchre rehabilitation project: Transdisciplinarity and innovation in research and education". The Archaeologist Dr. Fredrik Hiebert, who at the time represented National Geographic, introduced the Panel, and then the speech of the President of the International Conference and head of the NTUA Interdisciplinary Team of the emblematic rehabilitation project, Prof. Emerita Antonia Moropoulou, followed.

Prof. Antonia Moropoulou pointed out the interdisciplinarity, both in the study and in the monitoring, management, and evaluation of the project, as well as the use of high-tech tools, such as non-destructive testing, realistic 3D finite element models and especially digital documentation backgrounds, also 3D, where all the information could be included. Recognized by the European Union, this methodology characterizes



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the modern applications of science and technology in heritage conservation with innovation.

Prof. Antonia Moropoulou stressed that the field of research, education and application is unified and called on the Deputy Minister of Development and Investment with responsibility for Research and Innovation, Mr. Christos Dimas, to use this collective experience in a flagship project. The Deputy Minister underlined the emblematic role of the project in the Holy Sepulchre and stressed that *"by exploiting innovation and scientific research, we can seek state-of-the-art technological solutions that not only protect and preserve our cultural heritage, but also contribute to its even greater dissemination, promotion and extroversion"*.



The President of the International Conference, Prof. A. Moropoulou, and the Deputy Minister for Development and Investments Mr Christos Dimas



Panel Discussion 4

With the presentations of the representatives of the Postgraduate Programmes for the Protection of Cultural Heritage, Prof. **Gabriele Favero** from the Sapienza University 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, Assoc. Prof. **Maria Stavroulaki** from the Technical University of Crete, Prof. **Nikolaos Zacharias** from the University of Peloponnese, Prof. **Chris Stavrakos** from the University of Ioannina, and Prof. **Andreas Georgopoulos** from the National Technical University of Peloponnese, the discussion was concluded by Rapporteur, Ms. **Antonia Lampropoulou**, representative of the Erasmus+ EDICULA Strategic Alliance "Educational Digital Innovative CULTural heritage Learning Alliance", and concluded with the common recognition of the need to form a hub for research and education 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 Centre for the Conservation of Cultural Heritage in this direction, while the President of the European Association of Polytechnic Schools SEFI, Prof. **Hannu-Matti Järvinen**, undertook to explore which polytechnic schools would



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like to collaborate on a pilot basis to implement in their education the use of the 4CH Competence Centre for the Conservation of Cultural Heritage.

In the morning, in the Panel Discussion 1 on " Historic cities and centers: New Reuse and preservation strategies applying Circular Economy", the Mayor of Rhodes, Mr. **Antonis Kampourakis**, underlined that "the Medieval City of Rhodes, one of the largest inhabited historic cities in Europe within the walls - intra muros - is called upon to face the great challenge of its sustainable preservation in a way that meets the needs of improving the quality of life of its inhabitants, developing tourism in a way that is compatible with its status as a UNESCO World Heritage City, and enhancing its historic character as a commercial, transport and cultural hub for three continents. The reuse of the historic buildings owned by the State, with a critical mass - more than 260 - creates a great opportunity that, under certain conditions and with the appropriate leverage, implementing the principles of the circular economy, can generate revenue for the benefit of the sustainable preservation of the Old Town of Rhodes and society."



Panel Discussion 1

The Deputy Mayor of Rhodes, Mr. **Stefanos Drakos**, presented important application projects in the Medieval City of Rhodes. The Deputy Mayor of Athens, Mr. **Vassilis-Foivos Axiotis**, presented the policy of the Municipality of Athens for the revitalization of the historic center and the pilot actions to make Athens a European City of zero carbon emissions. **Ms Lee Minaidis**, from the World Organization of Historic Cities, presented the new guidelines for the reuse and revitalization of historic centers, while Ms **Bonnie Burnham**, President Emerita of the World Monuments Fund, presented the new financial instruments CHiFA has created to address the funding needs in this field.

The Prof. Emeritus **Eleni Maistrou**, representing Elliniki Etairia – The Society for Environment and Culture, Prof. **Mike Turner**, representing the UNESCO Chair in Urban Design and Studies, Prof. **Stefano della Torre**, representing the Architecture Department of the Polytechnic of Milan, Prof. Emeritus **Charris Kokkosis**, expert in spatial planning and sustainable development, and **Margarita Karavasili**, representing the urban planning organization ECOCITY, contributed from their point of view, highlighting the priorities of reuse and conservation in the spirit of the circular economy, each from their perspective and based on their own experiences. The President of the International Conference, Prof. **A. Moropoulou**, stressed the need for reuse to be compatible with the character of the cultural heritage, the needs of the local community, but at the same time to create an annuity to ensure the necessary protection. She underlined the pioneering role of Rhodes, which, with the Programme Agreement with the Ministry of Culture in 1983, paved the way for historic towns to play an active role today in their management and preservation and to face modern challenges.



In Panel Discussion 2 on "Digital Heritage a Holistic Approach", with the participation of Dr. **Marinos Ioannidis**, President of the UNESCO Chair on Digital Cultural Heritage, Dr. **Angelos Amditis**, Research Director at the Institute of ICCS of NTUA, Dr. **Aikaterini Delegou** from the Laboratory of Materials Science and Engineering of NTUA, Professor **Roberto di Giulio**, representative of the 4CH Competence Centre for Cultural Heritage Conservation, Prof. **Andreas Georgopoulos**, member of the Board of Directors of the International Council of ICOMOS, Ass. Prof. **Andreas Menychtas**, from the University of Piraeus and the RESPECT project that implements the information system for the restoration project in the Holy Sepulchre, and Prof. **Konstantinos Tokmakidis**, from the Aristotle University of Thessaloniki, School of Rural and Surveying Engineering. the conclusion was that the digital documentation of monuments can create a background for the interdisciplinary synthesis of information of each discipline dealing with the monument and allow a holistic approach to the monument with implications for the recording of the identity of the cultural heritage of Europe and the world with multiple applications.



Panel Discussion 2

In Panel Discussion 3 on "Machine Learning Techniques for Cultural Heritage Preservation" and the participation of Prof. **George Stavroulaki**, from the Institute of Computational Engineering of the Technical University of Crete, Assoc. Prof. **Nikolaos Doulami**, from the NTUA and the RESPECT project, which implements the information system for the restoration of the project in the Holy Sepulchre, Assoc. Prof. **Alfredo Ronchi**, representative of the Artcast4D project, **Anna Maria Pentimalli Biscaretti di Ruffia** from the Polytechnic University of Milan, and Prof. **Ioanni Founto**, from the Department of Informatics and Telecommunications of the University of Ioannina, highlighted the potential of modern computing tools to manage large numbers of data in such a way as to create new knowledge in the fields of relevant sciences and interdisciplinary.



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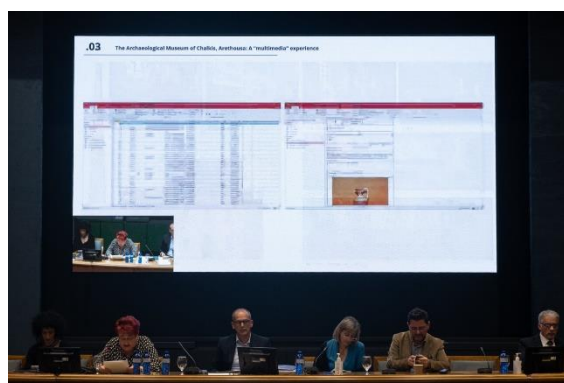
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Panel Discussion 3

In Panel Discussion 5 on "Archaeology, Archaeometry, Archaeogenetics" with the participation of **Angeliki Simossi**, Superintendent of Antiquities of Piraeus and Islands, Assoc. Prof. **Andreas Vlachopoulos**, from the Department of History and Archaeology of the University of Ioannina, Mr. **Christos Karapiperis** from DNASequences, Ms. **Maria Mertzani**, Director of Conservation of the Ministry of Culture and Sports, Ms. **Agni Terlixi**, Deputy Director of the Conservation and Restoration Laboratory of the National Gallery, and Prof. **Nikolaos Zacharias**, Dean of the School of Humanities and Cultural Studies of the University of Peloponnese, important experiences were presented, such as those of the Ephorate of Antiquities of Evia, in Antikyra, educational excavations of the University of Ioannina, the physico-chemical study of works of art in the National Gallery, the modern methods applied by the Directorate of Conservation of Ancient and Modern Monuments of the Ministry of Culture, the archaeometric methods applied by the University of Peloponnese, and the modern metagenomic methods applied by the DNASequences Company, which provide new archaeogenomic data for important projects, from the project at the Holy Sepulchre to projects of the Conservation Directorate of the Ministry of Culture, the National Gallery and others. The general conclusion of the discussion, after being told that 22,000 people watched the live streaming of the first day of work of the Preservation_CH International Conference, was that the world of archaeology is no longer closed, but open to modern techniques in science and society.



Panel Discussion 5



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2.4 Dissemination at EDICULA Synthesis Event

During the EDICULA Synthesis event, held at the Technical Chamber of Greece at 11th of July 2023, under the topic: "Advanced know-how, interdisciplinarity and professional profiles that respond to the challenges of sustainable conservation of cultural heritage", the outcomes of EDICULA and the EDICULA Toolkit were presented. Estimates speakers and guests were invited, among of them were the President of the Technical Chamber in Greece George Stasinou, the Vice- Rector for Finance, Planning, and Development at NTUA Evangelos Sapountzakis, the Rector of the Technical University of Crete Michalis Zervakis, the Scientific Responsible for the Project Professor Emeritus - NTUA, Member of the Executive Committee - Technical Chamber of Greece Antonia Moropoulou, the Deputy Minister of Education, Religious Affairs, and Sports of Greece Zetta Makri, the General Directorate for the Restoration, Museums and Technical Works Dr. Amalia Androulidaki, General Director at Ministry of Infrastructure and Transport Antonis Kotsonis, and more.

Following the PRESS RELEASE, detailed program, and the link of the event:

2.4.1 Press Release



PRESS RELEASE

Yesterday, Tuesday, 11th of July 2023, from 2:00 to 5:00 p.m., at the Technical Chamber of Greece (TEE), was held the Event of the European Program Erasmus+, of the IKY, EDICULA on the topic: "Advanced know-how, interdisciplinarity and professional profiles that respond to the challenges of sustainable conservation of cultural heritage".

The project of the Rehabilitation of the Holy Edicule of the Holy Sepulcher, included a comprehensive diagnostic study, planning of interventions, their implementation and their evaluation, is therefore an exemplary application of interdisciplinary cooperation in the protection of monuments with the focus on the one hand on the digital 3D documentation models where the contributions of all specializations and on the other hand innovation, developing and demonstrating a multi-level, scientific, technical, political management, scientifically intact and applicable in real time. EDICULA is an innovative educational approach that merges interdisciplinary collaboration and fieldwork, using both artificial intelligence and augmented and extended reality AR & XR technologies.

After the welcome speech of George Stasinou, President of the Technical Chamber of Greece on behalf of the Technical Chamber of Greece, the greeting of Evangelos Sapountzakis, Vice-Rector



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for Finance, Planning, and Development at NTUA, on behalf of the National Technical University of Athens and the greeting of Michalis Zervakis, Rector of the Technical University of Crete, on behalf of the Technical University of Crete, the Scientific Responsible for the Project Professor Emeritus - National Technical University of Athens, Member of the Executive Committee - Technical Chamber of Greece, Antonia Moropoulou, highlighted, “Today at the Technical Chamber of Greece we discussed the establishment of the interdisciplinary cooperation between studies and projects related to the protection of cultural heritage, maintaining the specifications of the individual studies and establishing the ones that are further required. The institutional framework for the formation of the Interdisciplinary Working Groups is foreseen in the P.D. 99/2018 (Article 1, par. 6) under the coordination of a licensed engineer”

TEE and the technical world have contributed to the modernization of the institutional framework of studies and projects in general and in particular to the protection of monuments in collaboration with the Ministry of Culture (Law 30/28/2022 on the specifications of studies and implementation on systems for the quality check of projects), which must be updated according to the proposals that will result from the synergy of all.

We welcome the presence of all the representatives of all specializations and technical bodies here today, as the start of a national network that will be connected to the Capacity Building at European Level and will be interconnected with the European Competence Center that we are currently preparing with the program 4CH for the Cultural Heritage. The program Erasmus+ EDICULA Educational Digital Innovative Cultural Heritage related Learning Activities in synergy with our foreign partners (Sapienza Università di Roma, Bezalel Academy of Arts and Design, PerpetielSI SRL, Israel Antiquities Authority, Hellenic Research Institute of the Alexandrian Civilization), under the coordination of the National Technical University of Athens allowed us to record the relevant know-how that today is in full disposal of everyone”. <http://edicula.eu>, <http://holysepulchreproject.ntua.gr>

The Deputy Minister of Education, Religious Affairs, and Sports of Greece, Mrs Zetta Makri, in her opening speech, stated.. “It is with great joy that I am here today among all of you, on behalf of the Minister of Education, Religious Affairs and Sports of Greece Mr Kyriako Pierrakaki, at today's event «EDICULA Synthesis Event», because the program EDICULA is part of the European Program Erasmus+, a Strategic Partnership in the field of Higher Education, which boosts the internalization and mobility and strengthens the bond between education, research, and innovation.

«EDICULA» is driven by the priorities of the program Erasmus+ for the period of 2021-2027 for the protection of the environment, the combating of the climate crisis as well as the innovative practices of the digital era, and the promotion of the social and educational values for the preservation of the European Cultural Heritage. It develops an innovative learning mechanism that supports the development of skills, social inclusion, critical thinking and the activation of the new generation.

For all the above, the Ministry of Education, Religious Affairs and Sports stands by Edicula, as in all actions and programs that have as a goal to provide high-quality education, and I hope it will be a source of inspiration for new innovative journeys”.



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Dr. Amalia Androulidaki, General Directorate for the Restoration, Museums and Technical Works, referred to the regulatory framework for the preparation of studies and the execution of works on immovable monuments and specifically to YPPOA/ATNEKE/356112/929/02-07-2019 (Government Gazette 2837/B/05-07-2019). She underlined the need to complete and update it by utilizing the cooperation of all the parties present at the event. That is why she insisted on the organization through the networking of the works of the potential national network to contribute both to the strengthening of interdisciplinarity and to the horizontal cooperation of parties, Ministries, and others. She also suggested the expansion of the network with control and certification bodies for on-site measurements at the monuments. She referred to the need of including more emblematic projects, such as the Restoration project of the Plaka Bridge in Arachthos awarded by Europa Nostra, and some among the 840 rehabilitation, conservation and restoration projects carried out by the Ministry of Culture.

Antonis Kotsonis, General Director at Ministry of Infrastructure & Transport, underlined as well the need for horizontal cooperation between the ministries for the joint protection of the country's cultural heritage and infrastructure with advanced, innovative technologies and know-how, the digitization and expansion of building registers and he underlined the need for quality education such as the five-year studies of engineers for the interdisciplinary collaboration and the introduction of innovation in studies and projects. He underlined the importance of networking in the implementation of interdisciplinarity policies that will respond to the challenges of sustainable conservation of cultural heritage and infrastructure.

Then on behalf of the Schools of the Technical University of Athens the following expressed their opinion: Assoc. Professor Elena Konstantinidou, on behalf of the Dean of the School of Architectural Engineering of NTUA, Prof. Eirini Klabatsea, Assis. Professor Kyriakos Labropoulos, on behalf of the Dean of the School of Chemical Engineering NTUA, Prof. Glykeria Kakali, Professor Charalabos Ioannidis, Dean of the School of Agronomists and Topographical Engineers - Geoinformatics Engineers NTUA, Prof. George Pantazis, President of the NTUA Teaching and Research Staff Association.

The representatives of scientific associations also expressed their opinion: Giorgos Mademochoritis, Vice-President of the Association of Graduate Architects - Panhellenic Union of Architects, Vasilis Mpardakis, President of the Civil Engineers Association of Greece, Vassilis Diamantis, President of the Panhellenic Association of Certified Environmental Engineers, Anna Gianniou, representative of the Greek Association of Town Planning, Spatial Planning and Regional Development Engineers, Athanasios Katsouras, President of the Panhellenic Association of Materials Science Engineers, Michalis Daktilidis, President of the Panhellenic Union of Graduate Engineers of Public Works Contractors, Despoina Kallidromitou, President of the Association of Greek Companies - Research Offices.

Following, the Curators of the Scientific Committees of Specialization TEE, as well as of the TEE Permanent Education Committee, expressed opinion: Prof. Irimi Koronaki, Moderator of the Scientific Committee of Mechanical Engineering, Christos Gounaris, Moderator of the Scientific Committee of Agronomists and Surveying Engineers, Prof. Anthimos Xenidis, Moderator of the



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Scientific Committee of Mining and Metallurgical Engineering, Prof. Nikolaos Ventikos, Moderator of the Scientific Committee of Shipbuilding of Engineering, Eftychia Antoniou, Member of the Scientific Committee of Spatial Planning, Urban Planning and Development Engineering, Giorgos Bazdanis, Curator of the Scientific Committee of Mineral Resources Engineering, Prof. PI Nikolaos Zafeiropoulos, Coordinator of the Education Standing Committee, Associate Professor DFT Christos Akratos, Deputy Coordinator of the Standing Committee of Education, NTUA Prof. Christos Manopoulos, Member of the Permanent Education Committee. The Vice-President of the TEE Nikos Andreadakis summarized the need for interdisciplinary processing of the specifications of studies and projects for the Protection and Cultural Heritage.

This was followed by the presentations of the partners of the Edicula program: Antonis Salakidis, CEO of PerpetielSI Srl, Dr. Kalliopi Papakosta, Hellenic Research Institute of Alexandrian Culture HRIAC, Prof. Gabriele Favero, La Sapienza University of Rome, Dr. Yuval Baruch, Director of the Israel Archaeological Service – Israel Antiquities Authority, Prof. Mike Turner, Bezalel University Academy of Arts and Design, Jerusalem. The Scientifically Responsible Professor Emeritus Antonia Moropoulou underlined as a conclusion the continuation of the international cooperation Edicula in a new program as well as the declaration of the availability of everyone to participate in the national network for the interdisciplinary cooperation for the sustainable preservation of the cultural heritage.



Photo 1. Deputy Minister of of Education, Religious Affairs, and Sports of Greece, Zetta Makri, Professor Emeritus NTUA Responsible of EDICULA Erasmus+ project, Member of the Executive Committee - Technical Chamber of Greece Antonia Moropoulou Scientifically, and General Directorate for the Restoration, Museums and Technical Works, Dr. Amalia Androulidaki.



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Photo 2. From the left: Giorgos Mademochoritis, Vice-President of the Association of Graduate Architects - Panhellenic Union of Architects, Athanasios Katsouras, President of the Panhellenic Association of Materials Science Engineers, Prof. PI Nikolaos Zafeiropoulos, Coordinator of the Education Standing Committee (TEE), Michalis Daktilidis, President of the Panhellenic Union of Graduate Engineers of Public Works Contractors, Prof. Anthimos Xenidis, Moderator of the Scientific Committee of Mining and Metallurgical Engineering, George Mpazdanis, Curator of the TEE Mineral Resources Engineering Specialty Scientific Committee



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Photo 3. From the right: Associate Professor of NTUA Elena Konstantinidou, on behalf of the Dean of NTUA School of Architecture, Professor Eirini Klabatsea, NTUA Professor Giorgos Pantazis, President of NTUA Teaching and Research Staff Association, NTUA Assistant Professor Kyriakos Lambropoulos, on behalf of NTUA Dean of Chemistry School NTUA of Engineering, Prof. Glykeria Kakali, Dr. Katerina Delegou, EDIP of Chemical Engineering NTUA, NTUA Prof. Charalambos Ioannidis, Dean of the School of Agronomists and Topographical Engineers - Geoinformatics Engineering NTUA, Dr. Kalliopi Papakosta, Hellenic Research Institute of Alexandrian Culture HRIAC, Vassilis Bardakis, President of the Civil Engineers Association of Greece, Despina Kallidromitou, President of the Association of Greek Research Firms



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2.4.2 Detailed Program



Event EDICULA Synthesis

Advanced expertise, interdisciplinarity and professional profiles that respond to the challenges of sustainable conservation of cultural heritage

Tuesday 11 July 2023 – 14.00-16.30

Technical Chamber of Greece

[Livestreaming](#) | Steering Committee Room, Nikis 4, 10563, Athens, 8th Floor

ANALYTICAL PROGRAM

Welcome Address on behalf of the Technical Chamber of Greece:

- **George Stasinou**, President TEE

Address on behalf of the National Technical University of Athens:

- Prof. **Evangelos Sapountzakis**, Vice-Rector for Finance, Planning, and Development at NTUA

Address on behalf of Technical University of Crete:

- Prof. **Michalis Zervakis**, Rector of the Technical University of Crete

Introductory Speech

- Prof. Emeritus **Antonia Moropoulou**, Scientific Responsible for the Project Professor Emeritus - National Technical University of Athens,

Opening Speeches

- **Zetta Makri**, Deputy Minister of Education, Religious Affairs, and Sports
- Prof. **Atanasios Kyriazis**, General Secretary for Research and Innovation
- Dr. **Amalia Androulidaki**, General Directorate for the Restoration, Museums and Technical Works, Ministry of Culture
- **Antonis Kotsonis**, General Director at the Ministry of Infrastructure & Transport

Speeches of the Deans of the National Technical University of Athens (NTUA)



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- Prof. **Nikolaos Lagaros**, Dean at the School of Civil Engineering NTUA
- Prof. **Nektarios Koziris**, Dean of the School of Electrical and Computer Engineering NTUA
- Assoc. Prof. **Elena Kwnstantinidou**, on behalf of the Dean of the School of Architectural Engineering NTUA, Professor Eirini Klabatsea
- Assis. Prof. **Kyriakos Labropoulos**, on behalf of the Dean of the School of Chemical Engineering NTUA, Professor Glykeria Kakali
- Prof. **Charalabos Ioannidis**, Dean of the School of Agronomists and Topographical Engineers - Geoinformatics Engineers NTUA
- Prof. **Stavros Kourkoulis**, Dean of School of Applied Mathematical and Physical Sciences NTUA
- Prof. **George Pantazis**, President of the NTUA Teaching and Research Staff Association

Speeches of the representatives of Scientific Associations

- **Giorgos Mademochoritis**, Vice-President of the Association of Graduate Architects - Panhellenic Union of Architects
- **Vasilis Mpardakis**, President of the Civil Engineers Association of Greece
- **Anastasios Efstathiou**, President of the Panhellenic Association of Mechanical and Electrical Engineers
- **Nikos Konstas**, representative of the Panhellenic Association of Chemical Engineers, on behalf of the President Aris Gorogias
- **Vassilis Diamantis**, President of the Panhellenic Association of Environmental Engineers
- **Dimitris Petropoulos**, President of the Panhellenic Federation of Unions of Public Officials Engineers Graduated from Higher Schools
- **Anna Gianniou**, representative of the Greek Association of Town Planning, Spatial Planning and Regional Development Engineers
- **Athanasios Katsouras**, President of the Panhellenic Association of Materials Science Engineers
- **Michalis Daktilidis**, President of the Panhellenic Union of Graduate Engineers of Public Works Contractors
- **Andreas Gerakakis**, President at the Association of Greek Contracting Companies
- **Michalis Kalogiannakis**, Secretary General of the Council of European Geodetic Surveyors

Speeches of the Curators of the Scientific Committees of Specialization TEE

- **Vasiliki Anagnostopoulou**, Curator of the Scientific Committee of Civil Engineering Specialty
- Prof. **Eirini Koronaki**, Curator of the Mechanical Engineering Specialization Scientific Committee
- **Christos Gounaris**, Curator of the Scientific Committee of Agronomists and Topographical Engineers
- Prof. Emeritus **Maria Loizidou**, Member of the Chemical Engineering Specialty Scientific Committee
- Prof. **Anthimos Ksenidis**, Curator of the Scientific Committee of the Specialty of Mining Engineers - Metallurgists
- Assoc. Prof. **Nikolaos Ventikos**, Curator of the Scientific Committee of Naval Engineering Specialty



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- **Eutuxia Antoniou**, Member of the Scientific Committee of Spatial Planning, Urban Planning and Development Engineering
- **Antonis Samiotakis**, Curator of the Environmental Engineering Specialty Scientific Committee
- **George Mpazdanis**, Curator of the Mineral Resources Engineering Specialty Scientific Committee
- **Nikolaos Zafeiropoulos**, Coordinator of the Standing Committee on Education
- Assoc. Prof. **Χρήστος Ακράτος**, Deputy Coordinator of the Standing Committee on Education
- Prof. **Christos Manolopoulos**, Member of the Standing Committee on Education

Speeches of the partners of the Project EDICULA Erasmus+

- **Antonis Salakidis**, CEO PerpetieISI Srl
- Dr. **Kalliopi Papakosta**, Hellenic Research Institute of Alexandrian Civilization HRIAC
- Prof. **Gabriele Favero**, University La Sapienza of Rome
- Dr **Yuval Baruch**, Head of the Archaeological Division Israel– Israel Antiquities Authority
- Prof. **Mike Turner**, University Bezalel Academy of Arts and Design of Jerusalem

SUBJECT OF DISCUSSION

The scientific and technical achievements of the Rehabilitation of the Holy Aedicule of the Holy Sepulcher in Jerusalem were the outcome of a holistic approach where Innovation functioned as the utmost crucial factor for combating the challenges of such an emblematic and complex project. Innovation is indeed the basic element for the generation of new Knowledge. This new knowledge can be diffused effectively to the general public through Education, instead of Research.

The project of the Rehabilitation of the Holy Aedicule, which includes a complete diagnostic study, planning of interventions and their implementation, constitutes an exemplary application in the field of protection of monuments, of the interdisciplinary cooperation, a result of Innovation, not only Research, but also of the process of implementation, with emphasis at the technological developments, which develops and demonstrates a multi-level scientific, technical, and political management, scientifically sound and applicable in real-time.

The introduction of the concepts of sustainability and design through a holistic approach is of pivotal importance as for the modern built environment, as for the protection of the tangible cultural heritage, which are evaluated and analyzed with appropriate techniques and methods, based on compatibility and performance criteria, which establishes the necessity of scientific support in the decision making for the management and addressing challenges in variable environments, under risks, within limited time and conditions, as well as under severe sociopolitical and religious situations and conflicts.

Therefore, the innovation that is implemented in such an emblematic monument has created a new interdisciplinary field and professional profile for the sustainable protection and management of cultural heritage through digital documentation and strategic planning of interventions, which



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allows the multispectral innovative management of data that are related to the construction of the asset, materials, and history.

EDICULA is an innovative educational approach that fuses the interdisciplinary collaboration among the sectors of applied sciences in the protection of monuments with humanities disciplines using extended reality (XR) technologies and hands on experience, to develop an educational framework to advance scientific transdisciplinary synthesis. <http://edicula.eu/>

2.4.3 Link of the Event

Youtube Link: <https://www.youtube.com/watch?v=8k-p6cDraZw>



2.5 Dissemination at Researchers' Night 2023

The European Researchers' Night is a Europe-wide public event, which displays the diversity of science and its impact on citizens' daily lives in fun, inspiring ways. Nowadays, the Researcher's Night is held every year, traditionally on the last Friday of September, in more than 370 European cities, with an aim to highlight Researchers' work and their contribution to society. In Athens, it is held every year by NTUA and this year was on the 29th of September in the Averof Building of NTUA, through it dissemination of EDICULA Toolkit was realized, as part of the event the scientists and staff involved in EDICULA present and inform attendees about it at the assigned booth. Also, presentation of the EDICULA Educational Toolkit was realized in an assigned auditorium.



Figure 3: Booth of EDICULA at the Researchers Night Athens NTUA 2023



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Figure 4: General aspect of the Researchers Night Athens NTUA 2023

Youtube Channel of Researchers' Night Athens NTUA: <https://www.youtube.com/@ntuaren>

2.6 Social Media of EDICULA

Through the social media created exclusively for EDICULA, the EDICULA Toolkit was promoted and disseminated.

Facebook: <https://www.facebook.com/ediculaproject>

Youtube: <https://www.youtube.com/@Edicula>

Websites: <http://edicula-educational-platform.eu/>, <http://edicula.eu/>

3. Conclusion

Based on all the above, a systematic dissemination of the EDICULA Toolkit was organized and realized, by different means, as events, conferences, presentations and online presence.