International Summer School on

HISTORIC MASONRY STRUCTURES

8th Edition

24 August – 6 September 2026

Benevento, Italy

Organising Institutions

KEIKO non-profit Association · University of Sannio, Department of Engineering

Supporting Institutions

Università di Salerno · Università Roma Tre · Universidad Politécnica de Madrid

Contributing Teaching Institutions

Università degli studi di Trieste · ETH Zurich

historicmasonrystructures@gmail.com – www.himass.org

PROGRAM BOOKLET

International Summer School on
HISTORIC MASONRY STRUCTURES

8th Edition

Event Organisation
Università degli Studi del Sannio
KEIKO Non-Profit Association

August 24th – September 6th 2026

Partner Universities

PROGRAM BOOKLET

International Summer School
historic masonry

UNIVERSITÀ DEGLI STUDI DEL SANNIO
Benevento

Topics

Structural Analysis of Historic Masonry Structures
Historic Masonry Case Studies
Limit Analysis and Heyman's Theory
Graphic Statics of Arches, Vaults, Domes
Membrane Equilibrium Analysis for Vaults
Numerical Methods for Masonry Assessment
Seismic Response and Assessment of Masonry Structures
The "Tile Vault Workshop"

Teachers

Maurizio Angelillo
Philippe Block
Alessio Bortot
Gianmarco de Felice
Paula Fuentes Gonzales
Santiago Huerta
Antonino Iannuzzo
John Ochsendorf
Esther Redondo

Young Lecturers and Tutors

Ricardo Maia Avelino
Alessandro Dell'Endice
Amal Gerges
Habib Katouli
Pietro Meriggi
Andrea Montanino
Fabian Bernal Orozco Barrera
Vittorio Paris
Giulia Piccinin
Natalia Pingaro
Tvrtko Renic
Felix Rodriguez
Marialuigia Sangirardi
Ilaria Scarcelli
Anjo Weichbrodt

Guest Lecturers

Ignacio Gil Crespo
Matthew DeJong
Rana Dubeissy
José Lemos
Gabriele Milani
Giulio Mirabella
Nicola Nodargi
Eugenio Ruocco
Valentina Russo
Marianne Saba
Paolo Vitti

Teaching assistants

Martina Bocci
Chiara Cirabisi
Francesca De Cola
Maria Parente
Elizabeta Šamec

UNISANNIO Organising Committee

Andrea Cusano
Ciro Del Vecchio
Nicola Fontana
Rosario Gatto
Antonino Iannuzzo
Giuseppe Maddaloni
Gustavo Marini
Roberto Tartaglia

Programme

This International Summer School aims to provide the fundamental theoretical and applied tools to analyse Historic Masonry Structures combining engineering, architecture, restoration and history of construction. The Summer School on Historic Masonry Structures is designed to gather researchers and scholars from the different fields of structural masonry, construction history and restoration to share their experiences on the history, design rules, construction methods and assessment tools of historic masonry structures. At the end of the programme the results of the field-work campaign will be presented by the students.

Course work

Course days will be focused on a general theme and are planned to include morning and afternoon sessions. Several days will end with a keynote lecture dealing with specific problems from the practical or theoretical work of one of the teachers or PhD students.
The morning sessions are devoted to introductory lectures delivered by experts in ancient masonry structures. Each lecture will last for about an hour, allowing enough time for questions and discussion. The afternoon sessions will be mostly dedicated to workshops, some of which will be exploratory and allow the students to question and develop their understanding. Others will have seminar character, with groups of students giving presentations about selected case studies in the range of the day's main theme.

Field work

Four historic structures in the city of Benevento will be analysed by groups of students. First, they will document the actual state using traditional drawing techniques as well as a variety of more advanced instruments. The information collected will be then used to build the structural model and assess their safety, detect possible damage and propose suitable repairs. This work will be complemented by documentary sources to support the understanding of the structural behaviour of vaults, arches and domes.

Accommodation

Students will be lodging at the "Complesso residenziale di San Vittorino".
Address: Via Tenente Pellegrini, 18-24, 82100 Benevento BN, Italy

The monastery of San Vittorino was a female Benedictine foundation in Benevento, established around the year 910 nearby an already existing church and dissolved in 1806. Together with the abbeys of Santa Sofia, San Pietro and San Modesto, it was one of the four major monasteries of Lombard foundation in the city. The structures of the monastery, rather stratified, in the 17th century came to include an entire block, between the current via Raffaele Pellegrini, via delle Assise, via Alfonso De Blasio and vico II San Vittorino. At the moment they are divided between the University of Sannio and the Nicola Sala Conservatory. The lodging part of the Convent has been transformed into a residential building for students.

Meals

Every day (August 24 - September 5), from 8:00 am to 9:00 am, breakfast will be consumed in a self-catered setting. There are common kitchens equipped with kettles.

The City

Benevento lies in Italy's Campania region, in the province of Benevento, about 90 km north-east of Naples. Travelers can reach it easily from Rome's airport (2 hours by train) or Naples' airport (1.5 hours by bus).

Perched on a hill 130 meters high at the confluence of the Calore Irpino and Sabato rivers, this small city of around 55,000 residents boasts prehistoric roots. Originally an important strategic Samnite center called Maleventum (initially Malies), it became the Roman colony of Beneventum in 268 BC, later becoming a powerful Lombard Duchy (capital of Langobardia Minor) and a Papal territory until 1860. Strategically positioned along the Appian Way, Benevento flourished, earning fame for its monuments and a legendary mystical aura.

Despite damage from earthquakes and devastating Allied air raids during World War II, Benevento still preserves many historic buildings.
Classical Monuments. Key survivors include Trajan's Arch (Porta Aurea, 114–117 AD), ruins of a Roman Theater, and the Ponte Leproso bridge over the Sabato River. Medieval buildings. Standouts are the frequently rebuilt cathedral (founded 7th century) with its magnificent bronze doors; the 12th-century cloister of the 8th-century Church of Santa Sofia (rebuilt 1688); and the castle (1321).

Benevento's city centre is a historic area rich with Roman, Lombard, and Baroque architecture, offering numerous attractions, shops, and dining options. The main street for strolling and shopping is Corso Garibaldi. The historic centre is compact and walkable, making it easy to visit the many key sites. Benevento is one of the 25 towns in Italy running for the title of "Capitale Italiana della Cultura" in 2028

Rocca dei Rettori

The Cathedral

Night view of Corso Garibaldi

The Roman Theater

The Venue

The Inauguration of the Summer School will take place in the Conference Room (Sala Conferenze) of the "Biblioteca F. Pacca", a really unique place for its many antique volumes, located in the vicinity of the Museo Diocesano of the City of Benevento.

Sant'Agostino Convent

The convent complex was founded in Benevento in the 13th century in the Trescene district, adjacent to a section of the city walls. It suffered significant damage in the 1688 earthquake. Subsequent reconstruction gave the complex, and especially the church, an 18th-century appearance.
The convent was closed in 1861, and the church in 1865. From that date, the convent complex served as a barracks for the Royal Carabinieri. In 1920, the new Parish of Sant'Agostino was inaugurated in the adjacent church of the same name. Restoration work following the 1980 earthquake gave the complex its current appearance.
The complex preserves numerous traces of its important past; examining these layers provides insight into the evolution that shaped it as it is today. Currently home to the Engineering lecture hall of the University of Sannio, it houses a single-nave church with valuable paintings and evidence of spoila material, integrating religious history and modern reuse.

Conference Room of the "Biblioteca F. Pacca"

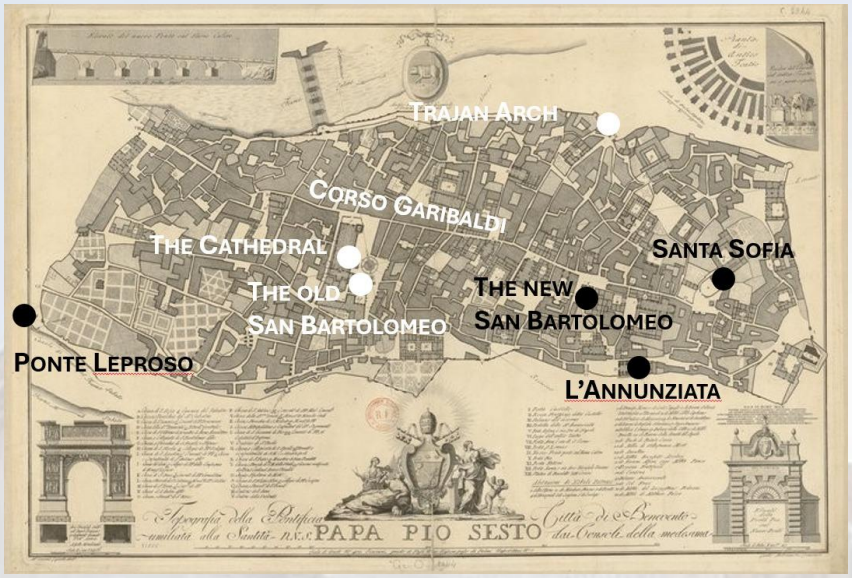
Sant'Agostino cloister

San Vittorino Monastery

The monastery of San Vittorino was a female Benedictine foundation in Benevento, established around the year 910 nearby an already existing church and dissolved in 1806. Together with the abbeys of Santa Sofia, San Pietro and San Modesto, it was one of the four major monasteries of Lombard foundation in the city. The structures of the monastery, rather stratified, in the 17th century came to include an entire block, between the current via Raffaele Pellegrini, via delle Assise, via Alfonso De Blasio and vico II San Vittorino. At the moment they are divided between the University of Sannio and the Nicola Sala Conservatory. The lodging part of the Convent has been recently transformed into a residential building for students.

Case studies

The selected case studies are located in the historic centre as shown in the following image.



San Bartolomeo

The Church of San Bartolomeo Apostolo is a Basilica located in piazza Federico Torre, along corso Garibaldi, in Benevento. A church of the same name is documented in Benevento since the 9th century, holding the relics of the apostle (see above: Museo Diocesano). This prior church at the site was destroyed by the 1688 earthquake, and the present church was moved here and designed by Filippo Raguzzini, reconsecrated by Pope Benedict XIII in 1729.
The church has a central nave covered by a barrel vault, vaulted lateral naves and an apse covered by an hemi-spherical dome.

Chiesa dell'Annunziata

Originally built by Romualdo, Duke of Benevento, in 664, it was completely renovated in 1570 to repair various damages, including the effects of the 1467 earthquake. The church, destroyed by the 1688 earthquake, was entirely rebuilt between the late 17th and early 18th centuries, and enriched with precious paintings and marble chapels.
The church has a central nave covered by a barrel vault, vaulted lateral naves and an apse covered by a cross vault. The extrados of the lateral chapels (rather damaged indeed and needing urgent interventions) are accessible.
Roof: The access to the roof is through the bell tower. The passage to go under the roof of the central nave and see the extrados of the barrel vault is in San Vittorino.

The Leproso Bridge

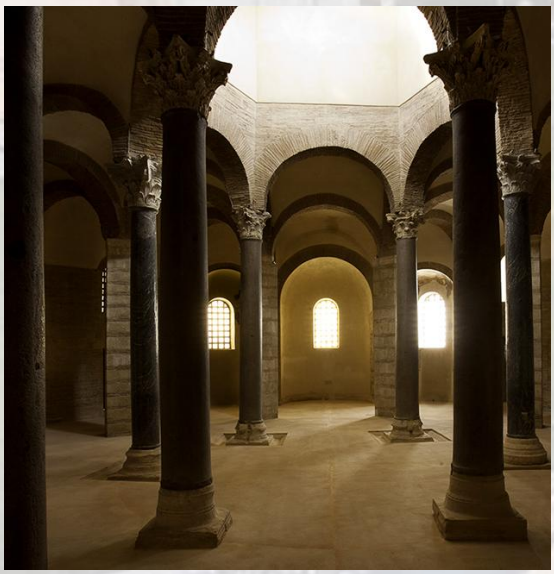
The Leproso Bridge is a Roman bridge that crosses the Sabato River on the edge of the town of Benevento. This bridge provided access to the city from the ancient Appian Way, which came from Capua. The bridge is included in the UNESCO World Heritage Site Via Appia. Regina Viarum.

History. The exact date of the bridge is not known, but its construction certainly became necessary not long after the founding of a Roman colony in Benevento (268 BC), when the Appian Way, which until then had only reached Capua, was extended.

It is likely that the bridge was restored during the joint reign of the Roman emperors Valentinian I, Valens, and Gratian (367–375), because their names appear on two fragments of an inscription, now reused on a pylon, but which originally ran along the edge of the parapet. According to local scholarly tradition, two arches of the bridge were destroyed by Totila when his hordes devastated Benevento (545); but this assertion is not founded with certainty.

The current name of the bridge appears for the first time in a document from July 830, regarding the foundation of a hospice nearby. Stefano Borgia, governor of Benevento in the 18th century, had in fact hypothesized that the name of the bridge could derive from its proximity to a leper colony, although he was unaware of this document. An alternative explanation is that of Giovanni De Vita, from the same period: according to him the roughness of the stone surfaces of the bridge could recall the skin of a leper.

Santa Sofia



The Church of Santa Sofia was founded by Duke Arechi II immediately after his election (758), serving as the national temple and votive chapel of the Lombard people. The church was unusually dedicated to Santa Sofia (Holy Wisdom), perhaps at the suggestion of Paul the Deacon, similar to Justinian's church in Constantinople (Hagia Sophia).

The building was already complete in May 760, when the relics of the twelve martyred brothers, recovered from various Italian cities, were transferred to the main apse.

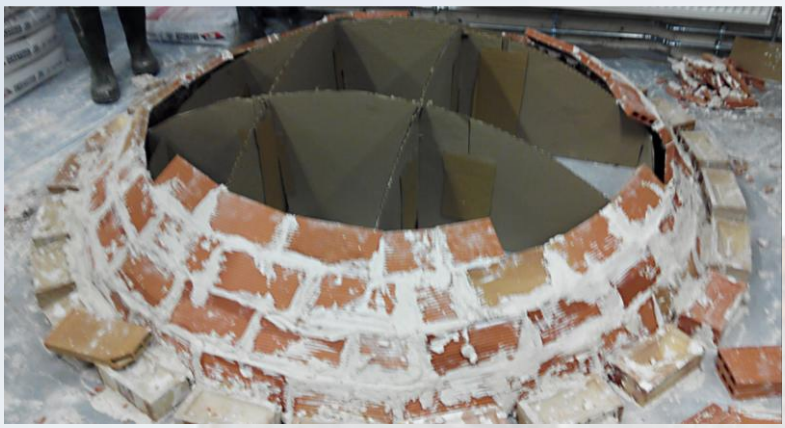
The temple again housed the relics of Saint Mercurius in 768, and later those of thirty-one holy martyrs and confessors. Arechi II built a nunnery next to the church, entrusted to his sister, Abbess Gariperga. Evidence of the nunnery remains in the cloister, now an integral part of the Museo del Sannio.

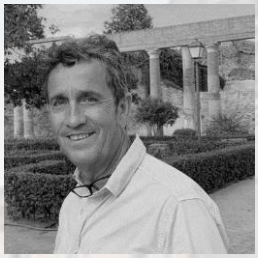
History. The Church of Santa Sofia was built around 760 by Arechi II, Duke of Benevento, as a personal chapel and national sanctuary for the redemption of his soul and the salvation of the Lombard people.

A monastery, now home to the Sannio Museum, was annexed to the religious building. Its cloister was rebuilt in the Romanesque period, reusing some original Lombard elements.

Tile vault construction workshop

Under the guidance of the "Maestro" Carlos Martin, we will build together with the students a vaulted structure. The workshop will consist of preparation (scaffolding, formwork, etc.), plaster mixing, preparation of lime mortar, cutting bricks, laying bricks. We will then assess its bearing capacity under static loading conditions. The tile vault workshop is sponsored by the "Universidad Politecnica de Madrid"





Carlos Martín

Vault builder and master plasterer, he has been involved in the construction and restoration of more than 300 vaults to date. He is the founder of Bóvedas Hispanas, a company specializing in the construction and restoration of vaults, working on numerous projects, including some of the most important in Spain in the last 30 years. He is a Professor of vault workshops at a national and international level and the author of several publications on plaster and vaulted structures.

Outstanding works. Vaulted vault in the Chapel of the Seminary of the Santos Niños Justo y Pastor de Alcalá de Henares (Madrid); Structural vaults of the Aljibe of the castle of Jadraque (Guadalajara) and in the cellar of the Valdemonjas de Quintanilla (Valladolid); Gothic vaults in stone in the Monastery of Pelayos de la Presa (Madrid); Vaults and domes in the Colegio San Basilio Magno de Alcalá de Henares (Madrid), in the Convent of San Juan de la Penitencia de Alcalá de Henares (Madrid), in the sacristy of Loeches (Madrid) and in the Chapel of San Felipe de Novelda (Alicante). He has participated as a builder in the Venice Architecture Biennale of 2016, executing a contemporary vaulted ceiling in collaboration with MIT (Prof. John Ochsendorf), with the design of Sir Norman Foster.

Tile vault workshop

Tile vault construction workshop

Tile vault workshop

Teachers

Maurizio Angelillo

University of Salerno (Italy)

Maurizio Angelillo is professor of Statics and Strength of Materials at the School of Engineering and Architecture of the "Università degli Studi di Salerno". Architect and structural expert with multi-disciplinary research interests including masonry mechanics, and Biomechanics, trained in Architecture at the University of Naples and in Mechanics at the University of Minnesota, Minneapolis, he and his group are actively working on the kinematics and on the equilibrium of masonry buildings. He works on unilateral models for masonry since the early 80s, being the author of more than 50 papers on the application of these models to real masonry structures and masonry elements such as arches, domes, vaults and spiral stairs.

Gianmarco de Felice

Roma Tre University (Italy)

Gianmarco de Felice is professor of structural engineering at the Department of Engineering of Roma Tre University. He is coordinator of the PhD school in Civil Engineering at Roma Tre University, chairman of the RILEM Technical Committee TC-250 CSM "Composites for Sustainable strengthening of Masonry" and member of the drafting Committee of the Charter of Rome on the Resilience of Art Cities to Natural Catastrophes. He has been the scientific coordinator for the design of engineering projects on heritage conservation and structural rehabilitation, such as the restoration of the Farnese Palace in Ischia di Castro and that of the Abbey of San Clemente in Casauria supported by the World Monuments Fund and awarded by the Domus International Prize for Restoration and Conservation.

Santiago Huerta

Universidad Politecnica de Madrid (Spain)

Santiago Huerta is a professor of Structural Design at Escuela Técnica Superior de Arquitectura de Madrid (ETSAM). President of the Spanish Construction History Society (SEDHC). Work as consultant for Historical Constructions Analysis (Cathedrals of Mallorca; Santiago de Compostela; Lonja de Mallorca; San Juan de los Reyes, etc.). Director of publications of the Juan de Herrera Institute. Author of more than 80 publications: books (editor), articles and papers, mainly on historic masonry structures and Construction History. Prize for the 'Dissemination of Architecture' related to the Exhibition and Catalog Guastavino Co. the Reinvention of the Vault (COAM), 2003. Telford Gold Medal of the British Civil Engineers Association London, 2011.

Antonino Iannuzzo

Università degli Studi del Sannio (Italy)

Antonino Iannuzzo is a professor in Solid and Structural Mechanics at the University of Sannio and Rita Levi Montalcini fellow. His research involves the kinematics and statics of 3D unilateral structures through new optimisation strategies. He obtained his PhD from the University of Naples Federico II with a dissertation introducing an innovative approach to modelling fractures in masonry, which led to the development of the PRD and CDF methods. From 2018 to March 2022, Antonino worked as a Postdoctoral Researcher at ETH Zurich within the Block Research Group. In 2022, he served as a Senior Lecturer at Swinburne University of Technology in Melbourne, Australia. In recognition of his international career achievements, he was awarded the prestigious Rita Levi Montalcini Fellowship by the Italian Ministry of University and Research in late 2022.

Alessio Bortot

University of Trieste (Italy)

Alessio Bortot is an Architect and a "Doctor Europaeus" since 2016 in Architecture, City and Design, with a specialization in Representation.
He has been professor for the course of "Descriptive geometry", "Advanced technologies for representation" and "Digital 3D modelling" at the IUAV University of Venezia, at the faculty of Engineering of the University of Padova, at the IED of Venice and at the École National Supérieure des Travaux Publics in Yaoundé (Camerun). He has been research fellow working on topics about History of representation and advanced technologies for Architecture. He has lectured in conferences in academic institutions in Italy and abroad and participated to national (PRIN 2010-2011) and international research. He is Associate Professor at the Department of Engineering and Architecture in the University of Trieste since 2021

Paula Fuentes Gonzales

University of Alcalá (Spain)

Paula Fuentes Gonzales is an Architect by the Polytechnic University of Madrid and has a Master in Building Structures. In 2013 she finished her PhD Dissertation: "Crossed-arch vaults between 10th and 16th centuries. Geometry, construction and structural behaviour." From October 2016 to April 2019, She was research associate in the BTU Cottbus-Senftenberg and member of the DFG Research Training Group 1913 "Cultural and Technological Significance of Historic Buildings", where she developed the post-doc research project. Her research interests are focused on history of construction, masonry structures and surveying and drawing of architectural heritage. From 2019 to 2021, she was post-doctoral researcher at the Vrije Universiteit Brussels, funded by a Marie Sklodowska-Curie Individual Fellowship under the supervision of Prof. Wouters. Since 2021 she is Professor at the Department of Architecture at University of Alcalá.

Esther Redondo

European University of Madrid (Spain)

Architect, graduated from the School of Architecture, Polytechnic University of Madrid. Working as a structural designer and consultant since 1999, as co-founder of the GV408 Studio, since 2001 she teaches structural design at the School of Architecture of the European University of Madrid, where she has been in charge of several subjects in the area of structures, as well as joint subjects in the area of technology. She also worked as a visiting professor at ETSAM (Madrid), EaT (Toledo), Universidad Rey Juan Carlos (Madrid) and Universidad de Ambato (Ecuador). PhD in 2013 -"Tile vaulting in Spain in the 19th Century: The transformation of a constructive system"-, her current field of research is the history of construction and structures. In this context, she has written numerous publications and participated in the organisation of related congresses in Madrid (2013), Segovia (2015) and Soria (2019).

Invited Lecturers

Rana Dubeissy

Lebanese University (Lebanon)

Rana Dubeissy is a Professor of Architecture at the Lebanese University and an expert in safeguarding cultural heritage. She holds a PhD in Architectural Design from the University of Tokyo. Her work focuses on architectural conservation, heritage documentation, disaster risk management, emergency preparedness, and post-conflict recovery. She leads academic and field-based initiatives that engage students and local communities in documenting and protecting cultural heritage, particularly in crisis-affected contexts. Her work also encompasses capacity building and international collaboration across Lebanon and the wider Middle East

José Lemos

National Laboratory for Civil Engineering (LNEC) (Portugal)

José Lemos is a Principal Researcher at the National Laboratory for Civil Engineering (LNEC) in Lisbon, Portugal. He holds a Civil Engineering degree from the University of Porto and a PhD in Rock Mechanics from the University of Minnesota, Minneapolis. He has been involved in the development of the discrete element codes UDEC and 3DEC. His research interests include dam foundations in rock, seismic analysis of masonry structures and discrete element modelling.

Gabriele Milani

Politecnico di Milano (Italy)

Gabriele Milani is Full Professor of Structural Mechanics at the Technical University of Milan, Italy. Chair professor at Yangzhou University, PRC (2019-2020). His scientific interests are manifold and include masonry modelling and experimentation, seismic engineering, preservation of historical constructions, timber, limit analysis, innovative strengthening with composite materials, Structural Health Monitoring, genetic algorithms (GA), rubber vulcanization and elastomeric seismic isolation. He published more than 350 papers in high impact international journals and co-chaired both the International Masonry Conference in 2018 and the International Brick and Block Masonry Conference in 2024. EB member in both high reputation journals and international congresses, he was awarded a Telford Premium and a K.J. Bathe Award. He is Associate Editor of Engineering Failure Analysis and Engineering Structures, both published by Elsevier.

Giulio Mirabella

University of Bergamo (Italy)

Professor of Restoration at the University of Bergamo, he is member of the board of PhD program in History and Preservation of Architecture at the Politecnico di Milano; he also teaches "wood construction strengthening" at the Specializing School in Architectural and Landscape Heritage Preservation. His research interest focus on the study of ancient buildings: damage analysis and building techniques recognition; monitoring and control of historic buildings; tall buildings (bell towers), long-term behaviour; mechanical characterization of traditional building materials; structural analysis of complex masonry structures by Finite Elements Method and by Discontinuous Deformation Analysis.

Nicola Nodargi

University of Rome Tor Vergata (Italy)

Nicola A. Nodargi is an Assistant Professor at the Department of Civil Engineering and Computer Science of the University of Rome Tor Vergata, Italy. He received his M.Sc. degree in Civil Engineering and his M.Sc. degree in Mathematics from the same university, where he earned his Ph.D. in Civil Engineering in 2016. As a Postdoctoral researcher, he was a visiting scholar at the Technical University of Braunschweig, Germany. His research activity, framed in the field of computational mechanics, focuses on the development of computational strategies for the analysis of structures exhibiting material and geometric nonlinearities, with a particular interest in the static and dynamic response of masonry constructions.

Eugenio Ruocco

University of Campania, Luigi Vanvitelli (Italy)

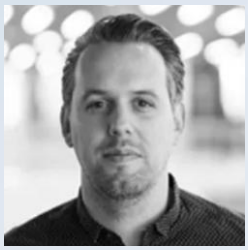
Eugenio Ruocco is a researcher and educator specializing in structural mechanics and computational modeling. His expertise includes structural stability, the Finite Element Method (FEM), the Boundary Element Method (BEM), and isogeometric approaches. His research covers masonry structures, plates, beams, and innovative materials. In recent years, he has focused on integrating artificial intelligence into structural mechanics, developing neural network algorithms for defect detection and structural performance assessment. His findings have been published in international journals. He has collaborated with leading institutions, including Texas A&M University (J.N. Reddy), Graz University of Technology (Gernot Beer), and the University of Queensland (C.M. Wang). He has also been a visiting professor at the National University of Singapore, the University of Newcastle (Australia), Texas A&M, and Middle East Technical University.

Marianne Saba

University of Balamand (Lebanon)

Marianne Saba is an Associate Professor of Civil and Environmental Engineering at the University of Balamand. Her research expertise lies in the development and characterization of advanced materials for civil engineering applications, with a particular focus on geopolymers, eco-construction materials, and sustainable binders. She has led numerous projects on the experimental and numerical evaluation of materials, investigating their chemical, mechanical, microstructural, thermal, and durability properties for innovative engineering use. She leads national and international research collaborations with institutions in France and Greece, and serves as an active member of AUF's Commission d'Internationalisation, contributing to academic exchange and scientific advancement in the region.

Online Invited Lecturers



Philippe Block

ETH Zurich (Switzerland)

Philippe Block is Professor at the Institute of Technology in Architecture at ETH Zurich, where he co-directs the Block Research Group (BRG) together with Dr. Tom Van Mele. He is director of the Swiss National Centre of Competence in Research (NCCR) in Digital Fabrication; founding partner of Ochsendorf DeJong & Block (ODB Engineering). Block studied architecture and structural engineering at the VUB, Belgium, and at MIT, USA, where he earned his PhD in 2009. Research at the BRG focuses on computational form finding, optimisation and construction of curved surface structures, specialising in unreinforced masonry vaults and concrete shells. Within the NCCR, BRG researchers develop innovative structurally informed bespoke prefabrication strategies and novel construction paradigms employing digital fabrication. With the BRG and ODB Engineering, Block applies his research into practice on the structural assessment of historic monuments in unreinforced masonry and the design and engineering of novel shell structures.

Matthew DeJong

Berkeley University of California (USA)

Matthew_DeJong is a Professor in Structural Engineering, Mechanics and Materials at University of California, Berkeley. He was a university lecturer in Structural Engineering and a Fellow and Director of Studies in Engineering at St Catharine's College. He was a Fulbright Scholar at the Technical University of Delft and completed his PhD at the Massachusetts Institute of Technology. He holds an undergraduate degree in Civil Engineering from the University of California, Davis, and worked as a structural design engineer in California. His research interests lie broadly in the field of structural engineering, but are primarily focused in the areas of earthquake and masonry structures.

John Ochsendorf

Massachusetts Institute of Technology (USA)

John Ochsendorf is a structural engineer with multi-disciplinary research interests including the history of construction, masonry mechanics, and sustainable design. Trained in structural mechanics at Cornell, Princeton, and the University of Cambridge, he conducts research on the structural safety of historic monuments, and the design of more sustainable infrastructure. His group is actively researching the dynamics of masonry buildings, the safety of cracked masonry vaults and domes, displacement loading of structures and the design of more sustainable infrastructure. Ochsendorf is the author of "Guastavino Vaulting: The Art of Structural Tile" and several dozen journal papers in structural mechanics. He has been awarded a Rome Prize from the American Academy in Rome and a MacArthur Fellowship from the John D. and Catherine T. MacArthur Foundation.

Fabian Bernal Orozco Barrera

National Autonomous University of Mexico (Mexico)

Fabian is an architect specialised in masonry vaults and domes. He studied in the National Autonomous University of Mexico (UNAM) through a master's degree in Restoration during which he did a research stay at the Polytechnic University of Madrid under the Supervision of Professor Santiago Huerta. Currently he is a Lecturer at the Faculty of Architecture in UNAM, collaborating as an Independent researcher. He has worked as an active consultant on the assessment of Masonry Structures in Mexico since 2020. He has also worked on survey, restoration and retrofitting of masonry buildings.

Alessandro Dell'Endice

ETH Zurich (Switzerland)

Alessandro is a chartered building engineer and architect with a strong interest in structural design, masonry structures and digital fabrication. In 2016, he earned a Master of Advanced Studies (MAS) in Architecture and Digital Fabrication at ETH Zurich, led by the Gramazio Kohler Research Group. In 2016, he joined the Block Research Group (BRG), where in 2018, he started a PhD focusing on unreinforced masonry structures using the Discrete Element Method. Between 2021 and 2023, Alessandro took part as a structural designer in the realisation of Striatus, an unreinforced masonry 3D-concrete-printed pedestrian bridge built in Venice, during the Biennial Exhibition 2021, and Phoenix. After defending his PhD in June 2022, he currently works at the BRG as a Senior Researcher.

Amal Gerges

University of Cagliari (Italy)

Amal Gerges holds a PhD in Architecture and Civil Engineering from the University of Cagliari, together with a Doctor Europaeus certificate. Her research focuses on the stability of masonry structures under static and dynamic loads, particularly on modelling masonry as a continuum and linking limit analysis methods with finite element approaches. She is currently a postdoctoral researcher at the University of Cagliari. During a research period at the Escuela Técnica Superior de Arquitectura de Madrid (ETSAM), under the supervision of Prof. Santiago Huerta, she investigated limit analysis methods for predicting the behaviour of masonry structures. She previously worked on construction and rehabilitation projects in Lebanon and Syria.

Pietro Meriggi

Roma Tre University (Italy)

Pietro Meriggi is an Assistant Professor and member of the Structures Research Group at the Department of Civil Engineering, Computer Science and Aeronautical Technologies of Roma Tre University. He got his PhD in Civil Engineering in 2021 at Roma Tre University. His scientific interests and expertise include laboratory and field testing of both traditional and innovative materials and of full-scale masonry structural members (subject to static and dynamic loads), analytical and numerical modelling of masonry structures, and surveying, monitoring, modelling of existing structures. In 2020 he was visiting at Navier Laboratory – IFSTTAR. Since 2022 he is lecturer of the course of Sustainable Structural Design at Roma Tre University.

Andrea Montanino

Pegaso University (Italy)

Andrea is Associate Professor of Mechanics of Solids and Structures at Pegaso University. He earned a PhD in Computational Mechanics and Advanced Materials from the University of Pavia in 2015, receiving the Italian Group of Computational Mechanics award for the best thesis in Computational Fluid Mechanics. His research focuses on computational mechanics applied to risk assessment, biomechanics, and masonry structures. From 2016 to 2019, he was a postdoctoral fellow at Politecnico di Milano, working on corneal biomechanics, and from 2019 to 2024 Assistant Professor at the University of Naples Federico II. Between 2024 and 2025, he served as Innovation Leader at the International Centre for Numerical Methods in Engineering. He has co-authored about 40 peer-reviewed articles.

Young Lecturers, Tutors, and Teaching Assistants

Young Lecturers, Tutors, and Teaching Assistants

Ricardo Maia Avelino

ETH Zurich (Switzerland)

Ricardo Maia Avelino is a researcher and structural engineer with interests in historic structures, sustainable design, and XR/AI applications in engineering. In 2023, he completed his PhD at ETH Zurich with the Block Research Group (BRG). His dissertation on Thrust Network Optimization for Masonry Assessment was awarded the ETH Medal for outstanding doctoral thesis. Later, he joined Skidmore, Owings & Merrill (SOM) in New York as a structural engineer, contributing to complex international projects and developing AI tools to streamline structural design. In 2025, Ricardo returned to ETH Zurich as the Design++ Postdoctoral Fellow and Research Associate at the BRG, while continuing to serve as a structural engineering consultant at SOM.

Vittorio Paris

University of Bergamo (Italy)

Vittorio Paris is Lecturer at the Department of Engineering and Applied Science at the University of Bergamo. He received his PhD in 2020 under the supervision of Professor Attilio Pizzigoni. Vittorio's research focuses on masonry self-balanced shells and their equilibrium during the construction, through which he aims to pave a way towards sustainable construction that is inspired by historical techniques. Under this aim, he has conducted extensive research on the unique and long-lost masonry technique: the herringbone technique and the cross-herringbone masonry pattern to construct domes. He is also part of the Form Finding Lab at Princeton University since 2018, lead by Prof. Sigrid Adriaenssens

Giulia Piccinin

University of Padua (Italy)

Giulia Piccinin has a PhD in Architecture, cities and design. She is a teaching assistant and contract professor at the Iuav University and the University of Trieste in representation of architecture and drawing. She is a member of the Imago rerum (Iuav) research unit, coordinated by Prof. De Rosa. Currently she is researching fellow at the Department of Civil, Environmental and Architectural Engineering of the University of Padua.

Felix Rodriguez

European University of Madrid (Spain)

Félix Rodríguez is an architect specialised on structural analysis, currently working as a consultant for GV408 studio and as a lecturer on structural design at European University of Madrid. He completed his MSc in 2023 at Escuela Técnica Superior de Madrid, where he specialised on historical masonry structures and thrust line analysis, writing his bachelor thesis on the interventions and structural analysis of San Fernando church in Mexico under the supervision of Santiago Huerta. He has also taken part as an assistant on the tile vaulting workshop at Polytechnic University of Madrid.

Marialuigia Sangirardi

University of Oxford (UK)

Marilù is PDRA at the Department of Engineering Science of the University of Oxford, where she is working on the development of new advanced in situ testing methods for historic masonry. She has been involved in many national and international projects regarding experimental characterization of materials, real scale shaking-table testing and numerical modelling of rubblestone masonry structures and low impact seismic retrofitting design, soil-structure interaction and tunnelling induced damage on masonry buildings, risk assessment and damage related to low-magnitude earthquakes correlated to gas extraction.

Young Lecturers, Tutors, and Teaching Assistants

Anjo Weichbrodt

ETH Zurich (Switzerland)

Anjo is a freelance conservator for built heritage based in Basel, Switzerland. He started as an apprentice in wall painting conservation in France, then pursued further studies and work in Rome, Italy. He completed the conservation master's program at SUPSI in Switzerland in 2012 alongside the postgraduate internship program at the Getty Conservation Institute in Los Angeles. He was part of a research group at ETH Zurich working on the Lausanne Cathedral from 2019 to 2025. In 2021, Anjo first attended the HIMASS and then took a sabbatical semester at the Escuela Técnica Superior de Arquitectura de Madrid (ETSAM) with Santiago Huerta.

Natalia Pingaro

Politecnico di Milano (Italy)

Natalia Pingaro is a PhD student at the Department of Architecture, Built Environment, and Construction Engineering. Her interest in architecture and the restoration of historical buildings began during her undergraduate studies at the Politecnico di Milano School of Architecture, where she completed a BSc thesis on the seismic vulnerability of historical masonry towers. Her PhD thesis combines numerical models with experimental validation considering retrofitting interventions. She attended the 2023 edition of the HIMASS.

Habib Katouli

University of Naples Federico II (Italy)

Habib is a second-year PhD student in Structural and Seismic Engineering at the University of Naples Federico II. His research focuses on the dynamics of masonry structures, their monitoring, and strategies for seismic and static interventions. He completed a second MSc in Italy, concentrating on the structural assessment of historic masonry vaults using TNA. With over five years of professional experience in the retrofitting and rehabilitation of different historic buildings in Iran, Habib is currently engaged in the assessment, design, and intervention of existing masonry structures. He attended the 2022 edition of the HIMASS.

Tvrtko Renic

University of Zagreb (Croatia)

He is a postdoctoral researcher at University of Zagreb, Faculty of Civil engineering where he has been working at the department for structures since 2017 on research and teaching in the field of new and existing concrete and masonry structures. He received his PhD in structural engineering at University of Zagreb in 2022. His main fields of interest are seismic analysis and design, existing masonry structures, strengthening methods, graphical methods of analysis and design and use of non-metallic reinforcement. He is part of a research project that aims to study typical unreinforced masonry buildings in Zagreb with emphasis on their assessment and post-earthquake retrofitting. He attended the 2024 edition of the HIMASS.

Ilaria Scarcelli

Polytechnic University of Bari (Italy)

Ilaria Scarcelli is a PhD student in Structural Mechanics at the Department of Architecture, Construction and Design of the Polytechnic University of Bari. She obtained her Bachelor's degree in Building Engineering and her Master's degree in Civil Engineering. During her Master's thesis, she focused on the field of masonry structures and membrane analysis, particularly on the case study of star vaults using the Thrust Surface Method. She is currently pursuing her doctoral research on masonry, with a specific focus on the study of masonry dynamics. She attended the 2024 edition of the HIMASS.

Young Lecturers, Tutors, and Teaching Assistants

Maria Parente

University of Parma (Italy)

Maria Parente is architect and Specialist in Architectural and Landscape Heritage (University of Naples Federico II). She received her PhD in Heritage Science (Sapienza Università di Roma) in 2026. Her research focuses on architectural conservation, Historic Building Information Modelling (HBIM), Digital Twins for cultural heritage, structural damage assessment, and structural health monitoring of historic masonry buildings. She is currently a Postdoctoral Researcher at the Department of Engineering and Architecture, University of Parma, where she is involved in a research project on the seismic vulnerability of historic urban centers.

Chiara Cirabisi

University of Genoa (Italy)

Chiara Cirabisi is a PhD candidate in Civil Engineering at the University of Genoa. She obtained her Master's degree in Building Engineering - Architecture in 2023. Her doctoral research focuses on an experimental campaign involving a full-scale specimen representing a portion of a historic masonry church, under the supervision of Prof. Chiara Calderini and Nuno Mendes. During her PhD, she carried out research periods at the University of Minho and at the European Laboratory for Structural Assessment (ELSA) of the European Commission's Joint Research Centre.

Martina Bocci

University of Roma Tre (Italy)

Martina Bocci is an architect and researcher specialising in traditional building technologies, with a focus on vernacular construction, earthen architecture, and sustainable building practices. She holds a PhD in Urban and Regional Development from Politecnico di Torino, where she researched community-based heritage rehabilitation in Chile. From 2018 to 2025, she taught Appropriate Technology and Low-Tech Architecture at Politecnico di Torino. Her research spans traditional and contemporary earthen construction, natural and low-carbon materials, life-cycle assessment, self-building, and educational workshops. She is currently a researcher at the Department of Engineering, University of Roma Tre.

Elizabeta Šamec

University of Zagreb (Croatia)

Elizabeta Šamec is an Assistant Professor at the University of Zagreb, Faculty of Civil Engineering, where she teaches and conducts research in engineering mechanics. Her work focuses on advanced computational methods for structural analysis, particularly the Discrete Element Method (DEM), form-finding techniques, historical masonry structures, numerical modelling, seismic assessment, and retrofitting. She is currently involved in the restoration of the Zagreb Cathedral following the 2020 earthquakes and leads the Normalisation and Best Practices Working Group within the COST Action ON-DEM.

Francesca De Cola

University of Parma (Italy)

Francesca is a PhD student in Engineering and Architecture at the University of Parma. She earned her Bachelor's and Master's degrees in Architecture from the Polytechnic University of Turin, specializing in architectural heritage conservation. Her research focuses on the seismic vulnerability of masonry churches, including construction features, damage assessment, and post-earthquake conservation strategies. Conducted in collaboration with the Emilia-Romagna Regional Reconstruction Agency and the National Technical University of Athens, her work also examines these topics in the Greek context.

International Summer School
historic masonry

Giovanna Conte
President of Keiko non-profit Association

"The association pursues, on a non-profit basis, civic, solidarity and socially useful purposes through the exercise, exclusively or principally, of the following activities of general interest:

- the promotion of scientific knowledge, mainly in the sector of construction science;
- the defense of the historical, cultural and identity value of the historic Italian building heritage."

These activities are carried out within the framework of HIMASS, with a view to preparing a funding application for the possible development of the Summer School into an International Joint Master's programme funded by the European Union.

Maurizio Angelillo
Professor

Amal Gerges
Researcher

Fabian Bernal Orozco Barrera
Lecturer

Andrea Montanino
Professor

Marialuigia Sangirardi
Researcher

Organising Institution: KEIKO ETS.

UNIVERSITÀ DEGLI STUDI DEL SANNIO Benevento

Andrea Cusano
Professor

Ciro Del Vecchio
Professor

Nicola Fontana
Professor

Rosario Gatto
Project administrative officer

Antonino Iannuzzo
Professor

Giuseppe Maddaloni
Professor

Gustavo Marini
Professor

Roberto Tartaglia
Professor

Organising Institution: UNIVERSITY OF SANNIO

historicmasonrystructures@gmail.com – www.himass.org

SAVE THE DATE

HIMASS 2026

8th EDITION

OPENING DAY

Opening of the 8th International Summer School on Historic Masonry Structures

TUESDAY
25 AUGUST 2026
9:00 - 12:00

SALA CONFERENZE DELLA BIBLIOTECA CAPITOLARE ED ARCIVESCOVILE F. PACCA
Ingresso da: Piazza Orsini, 27
82100 - Benevento (BN)

- INSTITUTIONAL GREETINGS
- PRESENTATION OF HIMASS 2026
- OPENING LECTURES
- PRESENTATION OF THE BENEVENTO CASE STUDIES
- GUIDED VISIT TO THE MUSEO DIOCESANO

ORGANISED BY
KEIKO non-profit Association
Università degli Studi del Sannio
Dipartimento di Ingegneria

International Summer School historic masonry

UNIVERSITÀ DEGLI STUDI DEL SANNIO Benevento

SCAN ME FOR INFO

www.himass.org | historicmasonrystructures@gmail.com

SAVE THE DATE

HIMASS 2026

8th EDITION

EUROPEAN HERITAGE AWARDS

EUROPA NOSTRA AWARD CEREMONY

EUROPA NOSTRA

FRIDAY
4 SEPTEMBER 2026
10.30 - 13.00

AUDITORIUM SANT'AGOSTINO
Vico I Trescene,
82100 Benevento (BN)

A special event celebrating excellence in cultural heritage conservation, research and education, organised within the 8th International Summer School on Historic Masonry Structures.

- INSTITUTIONAL GREETINGS
- GENERAL LECTURES
- CONTRIBUTIONS FROM HIMASS YOUNG TEACHERS & TUTORS
- EUROPA NOSTRA AWARD CEREMONY
- BUFFET LUNCH

ORGANISED BY
KEIKO non-profit Association
Università degli Studi del Sannio
Dipartimento di Ingegneria

International Summer School historic masonry

UNIVERSITÀ DEGLI STUDI DEL SANNIO Benevento

SCAN ME FOR INFO

www.himass.org | historicmasonrystructures@gmail.com

Events

The Archaeological site of Pompeii

Site Visit

A flourishing Oscan settlement, a vibrant city shaped by Greek culture, a prosperous Roman municipality, and today one of the world's most extraordinary archaeological sites, Pompeii offers an unparalleled journey into the ancient world. Buried beneath volcanic ash during the eruption of Mount Vesuvius in AD 79 and rediscovered in the eighteenth century, the city lies at the foot of the volcano in the modern province of Naples. Today, the Archaeological Park of Pompeii is an exceptional open-air museum, preserving an almost complete snapshot of urban life at the height of the Roman Empire.

Its paved streets, elegant villas adorned with mosaics and frescoes, temples, baths, workshops, gardens, and theatres remain remarkably intact, frozen at the moment of the eruption. At the heart of the city stands the Forum, once the political and commercial centre, bordered by the Temple of Jupiter and the Basilica. Among Pompeii's finest residences, the House of the Faun preserves the celebrated Alexander Mosaic, while the Villa of the Mysteries is renowned for its enigmatic frescoes depicting Dionysian initiation rites.

The city's human story is most vividly conveyed through the famous plaster casts of its victims. Created by Giuseppe Fiorelli in the nineteenth century from cavities left in the hardened ash, these haunting figures preserve the final moments of men, women, and children, giving a deeply moving voice to the silent city.

The experience is completed at the Naples National Archaeological Museum, home to Pompeii's finest discoveries, including frescoes, bronzes, jewellery, and the renowned Farnese Collection. Together, the museum and the archaeological park reveal the richness of Roman art, daily life, and craftsmanship before the city's sudden destruction. Walking through Pompeii is a unique encounter with history, where every street, monument, and fragment tells the story of a civilisation remarkably preserved by one of nature's most dramatic events.

Site Visit

Course Locations

Lectures : Lecture room SA9, 1st floor

Field Work group activities: Room "Aula Leone", ground floor next to the main entrance

Panel Discussion : "Sala dell'Assunta" Palazzo San Domenico (Sede del Rettorato)

ARRIVAL | MONDAY AUGUST 24

Time	Location	Course/Event
14.30 – 20.00	Hall of the Convent of Saint Agostino	Informal get together Registration, Logistical Information, and Lodging Distribution in San Vittorino
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	

DAY 1 | TUESDAY AUGUST 25

Time	Course/Event	Teachers/Lecturers
8.00 – 8.30	Breakfast	
9.00 – 12.00	**Course Opening** Conference Room of the "Biblioteca Capitolare e Arcivescovile F. Pacca"	
9.00 – 10.00	Welcome greeting and Course overview. The City of Benevento and UniSannio	Diocesi, UniSannio, Dipartimento di Ingegneria,Municipalità
10.00 – 10.10	Historic masonry architecture: geometry and equilibrium	S. Huerta
10.10 – 10.20	New tools for masonry reviving the old approach	M. Angelillo
10.20 – 10.30	Historic masonry structures facing earthquakes	G. De Felice
10.30 – 11.00	Students' self-introduction	
11.00 – 12.00	Introduction to Field Work. Presentation of the case studies	A. Bortot, E. Redondo, F. Orozco, F. Rodriguez, A. Weichbrodt, I. Scarcelli
12.00 – 13.00	**Guided visit to the "Museo Diocesano"**	
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
14.30 – 15.30	**Lecture:** The Theory of Survey	A.Bortot
15.30 – 19.00	**Field work** Visit to case studies	Teachers and Tutors
19.00 – 20.00	**Introductory Lecture** (online) The art of Masonry Construction	J. Ochsendorf
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	

DAY 2 | WEDNESDAY AUGUST 26

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 11.00	**Basic Theory** Material masonry. Heyman's principles of limit analysis. Equilibrium and thrust lines. Arches. Cracks. Collapse of arches.	S. Huerta
11.00 – 11.30	Coffee Break	
11.30 – 13.00	**Basic Theory** Equilibrium and thrust lines. Arches. Cracks. Collapse of arches. Limit analysis, safety. Buttresses. Case Study: The Church of Guimarei.	S. Huerta
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
15.00 – 16.00	**Lecture** Digital Drawing 1	A.Bortot
16.00 – 16.30	Coffee Break	
16.30 – 18.30	**Field work** Visit to case studies	Teachers and tutors
18.30 – 20.00	**Field work** Restitution from scanning	Teachers and tutors
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field work** Group work on case studies	

DAY 3 | THURSDAY AUGUST 27

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 11.00	**Basic Theory** The Gothic Structure. Flying buttresses and cross vaults. Case Study: The stability of the Cathedral of Palma de Mallorca	S. Huerta
11.00 – 11.30	Coffee Break	
11.30 – 13.00	**Basic Theory** Towers & Spires. Rose windows. Flat vaults. Case Studies: The Towers of the Obradoiro (Cathedral of Santiago de Compostela), Flat vaults of the Convent of Llucmajor	S. Huerta
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
15.00 – 16.30	**Field work** Drawing	Teachers and Tutors
16.30 – 17.00	Coffee Break	
17.00 – 18.00	**Invited Lecture** Discrete Element Modelling: modeling masonry with 3DEC	José Lemos
18.00 – 19.00	**Lecture** TBA	F. Orozco
19.00 – 20.00	**Lecture** Digital Drawing 2	A.Bortot
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field work** Group work on case studies	

DAY 4 | FRIDAY AUGUST 28

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 11.30	**From Basic to Advanced Theory** The Masonry Challenge. Heyman's No Tension material The Masonry Challenge. Limit Analysis and Energy: the arch	M. Angelillo
11.30 – 12.00	Coffee Break	
12.00 – 13.00	**Advanced Theory** The Masonry Challenge. Heyman's material: Continuum Models 1	M. Angelillo
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
15.00 – 16.30	**Field Work** Group work on digital restitution and drawing	Teachers and Tutors
16.30 – 17.00	Coffee Break	
17.00 – 18.00	**Invited Lecture** Modeling masonry with 3DEC - Application topics	José Lemos
18.00 – 19.00	**Invited Lecture** Masonry techniques in the Archeological Site of Pompei	Vincenzo Calvanese, Alessandra Zambrano (Pompeii Technical Staff)
19.00 – 20.00	**Lecture** Tile vaulting	C. Martin, E. Redondo
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field Work** Group work on digital restitution and drawing	Teachers and Tutors

DAY 5 | SATURDAY AUGUST 29

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 13.00	**Tile vaulting workshop**	C. Martin, E. Redondo
13.00 – 14.30	Lunch at Ristorante Traiano dal 1985	
15.00 – 19.00	**Tile vaulting workshop**	C. Martin, E. Redondo
20.00 –	Free night in town	

DAY 6 | SUNDAY AUGUST 30

Time	Course/Event	Teachers/Lecturers
8.30 – 9.15 h	Breakfast	
9.30 – 13.00	**Tile vaulting workshop**	C. Martin, E. Redondo
13.00 – 14.30	Lunch at Ristorante Traiano dal 1985	
15.00 – 17.00	**Tile vaulting workshop**	C. Martin, E. Redondo
20.00 –	Free night in town	

DAY 7 | MONDAY AUGUST 31

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 10.15	**Advanced Theory** The Masonry Challenge. Heyman's material: Continuum Models 2	M. Angelillo
10.15 – 11.00	**Advanced Theory** Numerical approximations. Rigid Blocks for masonry. The "displacement" approach: PRD, CDF	A. Iannuzzo
11.00 – 11.30	Coffee Break	
11.30 – 12.15	**Advanced Theory** Numerical approximations. The "force" approach: CASS. Lumped Force Networks	A.Montanino
12.15 – 13.00	**Advanced Theory** Vaults and domes. Continuum approaches	N. Nodargi
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
15.00 – 17.30	**Field Work** Group work on digital restitution and drawing	Teachers and Tutors
17.30 – 18.00	Coffee Break	
18.00 – 19.00	**Lecture** TBA	P. Fuentes
19.00 – 20.00	**Lecture** Safeguarding Built Heritage	Rana Dubeissy
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 – 22.00	**Field Work** Group work on digital restitution and drawing	Teachers and Tutors

DAY 8 | TUESDAY SEPTEMBER 1

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 10.15	**Advanced Theory** Doing unilateral with a Computer: Applications to Case Studies: PRD. Centrifuge testing	A. Iannuzzo
10.15 – 11.00	Limit Analysis with commercial FEM programs	A. Gerges
11.00 – 11.30	**Advanced Theory** Masonry materials and testing	Marianne Saba
11.30 – 12.00	Coffee Break	
12.00 – 13.00	**Advanced Theory** Seismic assessment	G. De Felice
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
14.30 – 15.30	**Lecture** (Online) TBA	P. Block
15.30 – 16.30	**Lecture** TBA	G. Mirabella V. Paris
16.30 – 17.00	Coffee Break	
17.00 – 18.00	**Lecture** TBA	Gabriele Milani
18.00 – 19.00	**Computational Masonry through COMPAS** Discrete Element Modelling and compas_3dec_prd. Part 1	A. Dell'Endice R. Maia Avelino (Block Res. Group)
19.00 – 20.00	**Field Work** Group work on case studies	Teachers and Tutors
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field work** Group work on case studies	

DAY 9 | WEDNESDAY SEPTEMBER 2

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
10.30 – 16.30	Guided tour to the new excavation sites of the **Parco Archeologico di Pompei**  MINISTERO DELLA CULTURA	Sophie Hay
18.00 – 19.00	**Computational Masonry through COMPAS** Discrete Element Modelling and compas_3dec_prd. Part 2	A. Dell'Endice R. Maia Avelino (BRG)
19.00 – 20.00	**Computational Masonry through COMPAS** Digital Graphic Statics	A. Dell'Endice R. Maia Avelino (BRG)
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field work** Group work on case studies	

DAY 10 | THURSDAY SEPTEMBER 3

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
9.30 – 10.30	**Advanced Theory** Seismic assessment and retrofitting	P. Meriggi
10.30 – 11.30	**Advanced Theory** Seismic assessment and retrofitting	M. Sangirardi
11.30– 12.00	Coffee Break	
12.00 – 13.00	**Advanced Theory** Experiments and Applications to case studies	G. De Felice
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
14.40 – 15.40	**Computational Masonry through COMPAS** TNA & TNO (Conference room of the Rectorate*)**:**	A. Dell'Endice R. Maia Avelino (BRG)
15.40 – 16.20	**Invited Lecture** (Conference room of the Rectorate*) TBA	Valentina Russo
16.20 – 17.00	**Invited Lecture** (Conference room of the Rectorate*) From planning to emergency response in historic structures	Ignacio Gil Crespo
17.00 – 17.30	Coffee Break	
17.30 – 20.00	**Panel Discussion** (Conference room of the Rectorate*)**: The legacy of Jacques Heyman and current approaches to the Structural Analysis of real masonry structures**	
17.30 – 18.00	**The new edition of "The Stone Skeleton" by J. Heyman** Lecture by Mario Como	Chair: S. Huerta
18.00– 19.20	**8 Short Presentations** (< 10 min each) **on current approaches to the Structural Analysis of real masonry structures:** Daniela Addessi, Antonello De Luca, Aguinaldo Fraddosio, Gabriele Milani, Francesco Portioli, Eugenio Ruocco, Stefano Galassi & Giacomo Tempesta, Giulio Zuccaro	Chair: G. De Felice
19.20 – 20.00	**Discussion**	Chair: M. Angelillo
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field work** Group work on case studies	

*"Sala dell'Assunta" Palazzo San Domenico (Sede del Rettorato)

Program

DAY 11 | FRIDAY SEPTEMBER 4

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
10.30 – 13.00	EUROPEAN HERITAGE EUROPA NOSTRA AWARDS  International Summer School on Historic Masonry Structures - HIMASS	**EUROPA NOSTRA AWARD CEREMONY**
10.00 – 11.20	Institutional greetings	
11.20 – 12.10	General Lecture. The Trajectory of Tile Vaults: A Journey from Antiquity to Modern Practice	Paolo Vitti
12.10 – 12.50	School's tutors and young teachers moment	
12.50 – 13.00	Award ceremony	
13.00 – 14.30	**Buffet Lunch**	
15.00 – 19.00	**Field work** Group work on case studies	
19.00 – 20.00	**Invited Lecture** (online) Seismic Analysis of Masonry	M. DeJong
20.00 – 21.00	Dinner at Ristorante Traiano dal 1985	
21.00 –	**Field work** Group work on case studies	

DAY 12 | SATURDAY SEPTEMBER 5

Time	Course/Event	Teachers/Lecturers
8.00 – 9.00	Breakfast	
10.00 – 11.00	**Students' Final Presentations**	Teachers and Tutors
11.00 – 11.30	Coffee Break	
11.30 –12.30	**Students' Final Presentations**	Teachers and Tutors
12.30 – 13.00	Awarding of Diplomas to 2026 HIMASS Summer School Participants	S. Huerta, G. De Felice, M. Angelillo
13.00 – 14.00	Lunch at Ristorante Traiano dal 1985	
17.00 – 19.00	**Tile vaulting workshop** Vault tested to collapse. "Rubble sangria party" (to dispose the resulting materials)	S. Huerta, G. De Felice, M. Angelillo
20.00 – 24.00	**Social Dinner**	

DAY 13 | SUNDAY SEPTEMBER 6

Time	Course/Event
8.00 – 9.00	Breakfast
9.00 – 13.00	Farewell and Departures

Further information and acknowledgments

The 8th Edition of the International Summer School HIMASS is supported and organised by the Department of Engineering of the University of Sannio and by KEIKO non-profit Association

The valuable support of Dr. Giovanna Conte is gratefully acknowledged.