INTERNATIONAL SUMMER SCHOOL
HISTORIC MASONRY STRUCTURES

II Edition - 2019
Anagni (Italy)

Summer 2019 Two-week Course

JUNE 17-29

Convitto Principe di Piemonte, Anagni (Italy)

Event organized by KEIKO Non-Profit Association with the patronage of the City Council of Anagni

ORGANIZING UNIVERSITIES Italy | Spain | USA | Switzerland | Belgium | UK & KEIKO Nonprofit Association | Città di Anagni

UNIVERSITÀ DEGLI STUDI DI SALERNO · ROMA TRE UNIVERSITÀ DEGLI STUDI · POLITÉCNICA · Massachusetts Institute of Technology · ETH zürich · VUB VRIJE UNIVERSITEIT BRUSSEL · UCL

PROGRAM BOOKLET

International Summer School on **Historic Masonry Structures**

17 June – 29 June 2019
Convitto Principe di Piemonte, Anagni (Italy)

Event Organization:
KEIKO Non-Profit Association

Under the patronage of the City of Anagni &
contribution of the Instituto Nazionale Previdenza Sociale

Città di Anagni

INPS Istituto Nazionale Previdenza Sociale

PARTNER UNIVERSITIES

Università degli Studi di Salerno | **Italy**
Università degli Studi Roma Tre | **Italy**
Universidad Politécnica de Madrid | **Spain**
Massachusetts Institute of Technology | **USA**
ETH Zurich | **Switzerland**
Vrije Universiteit Brussel | **Belgium**
University College London | **United Kingdom**

UNIVERSITÀ DEGLI STUDI DI SALERNO

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ETH zürich

VUB VRIJE UNIVERSITEIT BRUSSEL

UCL

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PARTICIPANT TEACHERS

Maurizio Angelillo:
Professor at Università degli Studi di Salerno

Philippe Block:
Professor at the Institute of Technology in Architecture at ETH Zurich

Gianmarco de Felice:
Professor at Università degli Studi Roma Tre

Paula Fuentes:
Post-doc researcher at the VUB, funded by a Marie Skłodowska-Curie Individual Fellowship

Ignacio J. Gil-Crespo:
PhD Architect & Director of the Research Center *José Joaquín de Mora*

Rosa Ana Guerra:
Professor at Universidad de Santiago de Compostela

Santiago Huerta:
Professor at Universidad Politécnica de Madrid

John Ochsendorf:
Professor at Massachusetts Institute of Technology

ORGANIZATION TEAM

Alba de Luis:
Architect & Secretary of the *Summer School on Historic Masonry Structures*

Giovanna Conte:
President of KEIKO Non-Profit Association

GUEST LECTURERS

Riccardo Barsotti:
Professor at Università di Pisa

Mario Como:
Socio dell'Accademia Pontaniana in Napoli

Antonello De Luca:
Professor at University of Naples Federico II

Daniela Esposito:
Professor at "Sapienza" Università di Roma

Robert Flatt:
Professor at Institute of Building Materials at ETH Zürich

Luigi Guerriero:
Professor at Università degli Studi della Campania

Stefan Holzer:
Professor at Dep. of Architecture at ETH Zurich

Ornella Iuorio:
Assistant Professor at School of Civil Engineering University of Leeds

Lynne C. Lancaster:
Andrew W. Mellon Professor-in-Charge of the Humanities at the American Academy in Rome

Giulio Zuccaro:
Professor at University of Naples Federico II
Director of PLINIUS

YOUNG INVITED TEACHERS

Alejandra Albuerne:
Lecturer at University College London (UCL)

Emanuela De Feo:
Adjunct Professor of Restoration at UNISA

Alessandro Dell'Endice:
Block Research Group Ph.D. Student at ETH

Roberta Fonti:
Research Leader at the Chair of Restoration (TUM)

Antonino Iannuzzo:
Block Research Group Post-Doc Researcher at ETH

Carlo Olivieri:
Angelillo Research Group Ph.D. Student at UNISA

COURSE ORGANIZATION

Although masonry structures are no longer built, we need to understand their construction and structural behavior. This program is intended for graduate and PhD students, or practitioners, involved into building conservation and restoration, architecture history, structural design, seismic assessment, management of cultural heritage, and history of construction.

The Summer School on Historic Masonry Structures is designed to bring together researchers and scholars from the different fields of structural masonry, construction history and restoration. It will be a place to share their experiences on the history, design rules construction methods and assessment tools of historic masonry structures, including vaults, domes and shells. Teaching will be in English, and it will include three main parts: course work, field-work and technical excursions.

The learning programme is based on a variety of didactic approaches including lectures, research presentations by teachers and students, field-work and field trips. Being scheduled to occupy fourteen days, course work will play the main role during the summer school, in both the theorical and the practical approaches.
At the end of the programme the results of the field-work campaign will be presented by the students.

COURSE WORK

Course days will stand under a general theme and are planned to be formed by 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 lectures delivered by experts in ancient masonry structures and will therefore take the form of 'master classes'. Each lecture will last for about an hour and a half, allowing enough time for discussion.

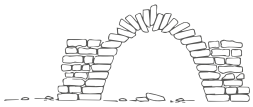
The afternoon sessions will be occupied by workshops, some of which will be exploratory and allow the students to question and develop their understanding. Others will have seminar character, with groups of students giving presentations about selected case studies in the range of the day's main theme.

FIELD WORK

During two field-work weeks students will be required to analyze the vaults and some selected structural elements of the curch of San Pietro in Vineis and other Medieval constructions in the city center of Anagni.

Students will document the actual state of preservation using traditional drawing techniques as well as a variety of instruments. Collected data will be used to analyse the structural behaviour of masonry structures, assess their safety levels – thus, detect possible defects and propose suitable repairs and strengthening methodologies.

This work will be supplemented by documentary sources to support students in their individual understanding of the structural behaviour of arches in structures.



EXCURSION DAYS

Three excursion days will confront the students with different types of vaulted structures in Subiaco and its surroundings, as well as in Rome and L'Aquila. These visits will be led by expert guides who will explore historic structures on site to allow students to make connections between theory/practice and the conservation of such structures.

Restoration construction sites after the effects of earthquakes
L'Aquila

Roman masonry domes and baroque churches
Rome

Imposing Romanesque building and crypt
Anagni Cathedral and Cripta

An underground hidden and medieval reality
Anagni Sotterranea

GUEST LECTURES

Course work, field work and excursion days, as the basic instruments of the Summer School, will be supplemented by guest lectures by renowned experts on the field of structural analysis and practice of engineering historic structures.

CREDIT SYSTEM

Due to the different study plans of the universities and the intention to invite students from various fields of studies, the participation in the Summer School will be crediting with a total of 90 credit hours. Each attendant will be awarded a Certificate for participating in the programme, collaborating in the field work and its documentation (carried out during the course) and passing an oral exam at the end of the Summer School.

COURSE PROGRAMME

ARRIVAL | SUNDAY JUNE 16

Time	Location	Course | Event
19:00 h	Roma Termini	Pick up bus from Roma Termini to Convitto P. di Piemonte, Anagni
20:00-22:00 h	Restaurant Convitto	Informal get-together

DAY 1 | MONDAY JUNE 17

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-09:30 h	**Course Opening** Introduction	**M. Angelillo (UNISA)** **G. de Felice (Roma Tre)** **S. Huerta (UPM)** **J. Ochsendorf (MIT)**
09:30-10:30 h	**Inaugural Lectures** Short introductory lectures by the organizing teachers	**M. Angelillo (UNISA)** **G. de Felice (Roma Tre)**
10:30-11:30 h	**Inaugural Lectures** Short introductory lectures by the organizing teachers	**S. Huerta (UPM)** **J. Ochsendorf (MIT)**
11:30-12:00 h	Coffee Break	
12:00-13:30 h	**Field Work** Introduction	**P. Fuentes (VUB)** **R. Guerra (USC)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Group work: visit to the case studies, scanning and site analysis	**P. Fuentes (VUB)** **E. De Feo (UNISA)** **R. Guerra (USC)** **A. Albuerne(UCL)** **I. Gil-Crespo (JJM)**
16:30-17:00 h	Coffee Break	
17:00-19:00 h	**Field Work** Group work: visit to the case studies, scanning and site analysis	**P. Fuentes (VUB)** **E. De Feo (UNISA)** **R. Guerra (USC)** **A. Albuerne(UCL)** **I. Gil-Crespo (JJM)**
19:00-20:30 h	Welcome cocktail at "Sala della Ragione" organized by the Major of Anagni	
20:30-22:00 h	Dinner	

DAY 2 | TUESDAY JUNE 18

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**Basic Theory** Material masonry. Heyman's principles of limit analysis. Equilibrium and thrust lines. Arches. Cracks. Collapse of arches.	**S. Huerta (UPM)**
11:00-11:30 h	Coffee Break	
11:30-12:30 h	**Advanced Problems** Rigid Blocks for Masonry 1	**M. Angelillo (UNISA)**
12:30-13:30 h	**Advanced Problems** Overview lecture: Computational analysis using COMPAS_Masonry	**P. Block (ETH)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Post-process of the data	**P. Fuentes (VUB)** **R. Guerra (USC)** **E. De Feo (UNISA)** **A. Albuerne(UCL)**
16:30-17:00 h	Coffee Break	
17:00 -17:30 h	**Advanced Problems** TNA Theory	**P. Block (ETH)**
17:30 -19:00 h	**Applied Theory** TNA Tutorial	**P. Block Research Group (ETH)**
19:00-20:30 h	Dinner	
20:30-22:00 h	**Guest Lecture** The kinematical approach in Statics of masonry structures	**M. Como (Acc. Pontaniana)**

DAY 3 | WEDNESDAY JUNE 19

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**Basic Theory** Limit analysis, safety. Buttresses. *Case Study:* The Church of Guimarei.	**S. Huerta (UPM)**
11:00-11:30 h	Coffee Break	
11:30-13:00 h	**Advanced Problems** Rigid Blocks for Masonry 2	**M. Angelillo (UNISA)**
13:00-13:30 h	**Advanced Problems** RBE Theory	**P. Block (ETH)**
13:30-15:00 h	Lunch	
15:00-16:00 h	**Applied Theory** RBE Tutorial	**P. Block Research Group (ETH)**
16:00-16:30 h	**Advanced Problems** DEM Theory	**P. Block (ETH)**
16:30-17:00 h	Coffee Break	
17:00-18:00 h	**Applied Theory** DEM Tutorial	**P. Block Research Group (ETH)**
18:00-19:00 h	**Applied Theory** PRD Example	**P. Block Research Group (ETH)**
19:00-20:30 h	Dinner	

DAY 4 | THURSDAY JUNE 20

Time	Course | Event	Teachers | Lectures
07:30-08:00 h	Breakfast	
08:00-09:30 h	Bus to Rome (Via San Gregorio)	
09:30-13:00 h	**Visits in Rome** The Pantheon Trajan's Markets Roman Forum	**J. Ochsendorf (MIT)**
13:00-14:00 h	Picnic Lunch at Parco del Colle Oppio	
14:00-14:45 h	From Parco di Colle Oppio to the American Academy	
15:00-15:45 h	**American Academy Rome: Lectures** Preservation of Historic Masonry Structures	**J. Ochsendorf (MIT)**
15:45-16:45 h	**American Academy Rome: Lectures** Vaulted construction in Rome	**L. C. Lancaster**
16:45-18:00 h	**American Academy Rome: Lectures** Reimagining Shell Structures - Learning from the Master Builders	**P. Block (ETH)**
18:00-19:30 h	Bus from American Academy to the Convitto (Anagni)	
19:30-21:0 0 h	Dinner	

DAY 5 | FRIDAY JUNE 21

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**Guest Lecture** Wooden Centerings	**Stefan M. Holzer (ETH)**
11:00-11:30 h	Coffee Break	
11:30-13:30 h	**Guest Lecture** Problems and recent advances in the restoration of historical masonry constructions	**D. Esposito (Sapienza, Univ. Roma)** **L. Guerriero (SUN)** **R. Fonti (TUM)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Seminar session: Methodology and recording of distorted structures. Group work o	**P. Fuentes (VUB)** **R. Guerra (USC)** **E. De Feo (UNISA)** **A. Albuerne(UCL)**
16:30-17:00 h	Coffee Break	
17:00-19:00 h	**Field Work** Group work on point clouds	**P. Fuentes (VUB)** **R. Guerra (USC)** **E. De Feo (UNISA)** **A. Albuerne(UCL)**
19:00-20:30 h	Dinner	

DAY 6 | SATURDAY JUNE 22

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
	Free day Pic nic lunch	
19:00-20:30 h	Dinner	

DAY 7 | SUNDAY JUNE 23

Time	Course | Event	Teachers | Lectures
07:30-08:30 h	Breakfast	
10:00-13:00 h	**Visit: Anagni Sotterranea** Guided tour	**S. Huerta (UPM)** **M. Angelillo (UNISA)**
13:00-14:30 h	Lunch	
15:00-17:00 h	**Visit: The Cathedral of Anagni and Cripta** Guided tour	**S. Huerta (UPM)** **M. Angelillo (UNISA)**
17:30-19:00 h	**Guest Lecture** Historic mortar: designing tailored material testing	**Robert Flatt (ETH Zurich)**
19:00-20:30 h	Dinner	

DAY 8 | MONDAY JUNE 24

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-10:30 h	Bus to L'Aquila	
10:30-13:00 h	**Visit: L'Aquila Part 1** Guided tour	**G. de Felice (Roma Tre)**
13:00-14:30 h	Picnic lunch	
14:30-17:30 h	**Visit: L'Aquila Part 2** Guided tour	**G. de Felice (Roma Tre)**
17:30-19:00 h	Bus to the Convitto (Anagni)	
19:00-20:30 h	Dinner	

DAY 9 | TUESDAY JUNE 25

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**Basic Theory** The Gothic Structure. Flying buttresses and cross vaults. *Case Study:* The stability of the Cathedral of Palma de Mallorca	**S. Huerta (UPM)**
11:00-11:30 h	Coffee Break	
11:30-13:30 h	**Advanced Problems** Seismic behaviour of Historic Masonry: Learning from earthquakes and shake table tests	**G. de Felice (Roma Tre)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Group work on structural analysis	**R. Fonti (TUM)** **I. Gil-Crespo (JJM)** **A. Iannuzzo (ETH)** **P. Fuentes (VUB)**
16:30-17:00 h	Coffee Break	
17:00-19:00 h	**Field Work** Group work on structural analysis	**R. Fonti (TUM)** **I. Gil-Crespo (JJM)** **A. Iannuzzo (ETH)** **R. Guerra (USC)**
19:00-20:30 h	Dinner	

DAY 10 | WEDNESDAY JUNE 26

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**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 (UPM)**
11:00-11:30 h	Coffee Break	
11:30-13:30 h	**Guest Lecture** Mechanical schemes (not too much complicated) of masonry panels, arches, and domes	**R. Barsotti (Pisa)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Group work on structural analysis	**A. Dell'Endice (ETH)** **I. Gil-Crespo (JJM)** **C. Olivieri (UNISA)** **E. De Feo (UNISA)**
16:30-17:00 h	Coffee Break	
17:00-19:00 h	**Field Work** Group work on structural analysis	**A. Dell'Endice (ETH)** **I. Gil-Crespo (JJM)** **C. Olivieri (UNISA)** **R. Guerra (USC)**
19:00-20:30 h	Dinner	

DAY 11 | THURSDAY JUNE 27

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**Advanced Problems** Spiral stairs with the membrane and the kinematic approach	**M. Angelillo (UNISA)**
11:00-11:30 h	Coffee Break	
11:30-13:30 h	**Guest Lecture** TBA	**A. De Luca (Napoli Federico II)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Group work on structural analysis	**R. Fonti (TUM)** **A. Dell'Endice (ETH)** **A. Iannuzzo (ETH)** **C. Olivieri (UNISA)**
16:30-17:00 h	Coffee Break	
17:00-19:00 h	**Field Work** Group work on structural analysis	**R. Fonti (TUM)** **A. Dell'Endice (ETH)** **A. Iannuzzo (ETH)** **C. Olivieri (UNISA)**
19:00-20:30 h	Dinner	

DAY 12 | FRIDAY JUNE 28

Time	Course | Event	Teachers | Lectures
07:30-09:00 h	Breakfast	
09:00-11:00 h	**Advanced Problems** Crack patterns and Collapse Mechanisms	**G. Zuccaro (Napoli Federico II)**
11:00-11:30 h	Coffee Break	
11:30-13:30 h	**Advanced Problems** Seismic assessment and retrofitting. Case studies: San Clemente a Casauria e Casamari a Veroli	**G. de Felice (Roma Tre)**
13:30-15:00 h	Lunch	
15:00-16:30 h	**Field Work** Group work on report and presentation	**A. Dell'Endice (ETH)** **R. Fonti (TUM)** **A. Iannuzzo (ETH)** **C. Olivieri (UNISA)**
16:30-17:00 h	Coffee Break	
17:00-19:00 h	**Field Work** Group work on report and presentation. Reports turn in.	**A. Dell'Endice (ETH)** **R. Fonti (TUM)** **A. Iannuzzo (ETH)** **C. Olivieri (UNISA)**
19:00-20:30 h	Dinner	

DAY 13 | SATURDAY JUNE 29

Time	Course | Event	Teachers | JURY	
07:30-09:00 h	Breakfast		
09:00-11:00 h	**Presentation Field Work** Morning session	**M. Angelillo (UNISA)** **G. de Felice (Roma Tre)** **S. Huerta (UPM)** **G. Zuccaro (NFedII)**	**P. Fuentes (VUB)** **R. Guerra (USC)** **I. Gil-Crespo (JJM)** **O. Iuorio (U.Leeds)**
11:00-11:30 h	Coffee Break		
11:30-13:30 h	**Presentation Field Work** Morning session	**M. Angelillo (UNISA)** **G. de Felice (Roma Tre)** **S. Huerta (UPM)** **G. Zuccaro (NFedII)**	**P. Fuentes (VUB)** **R. Guerra (USC)** **I. Gil-Crespo (JJM)** **O. Iuorio (U.Leeds)**
13:30-15:00 h	Lunch		
16:00-17:00 h	**Closing Panel** Discussion and Conclusions	**M. Angelillo (UNISA)** **G. de Felice (Roma Tre)** **S. Huerta (UPM)**	
17:00-19:00 h	Free time		
19:30-21:30 h	**Farewell Dinner**		

DEPARTURE | SUNDAY JUNE 30

Time	Location	Course | Event
07:30-09:00 h	Convitto	Breakfast
10:00 h	Convitto	Pick up bus from Convitto Principe di Piemonte to Roma Termini

COURSE SYLLABUS
BASIC THEORY & ADVANCED PROBLEMS

Maurizio Angelillo	**Professor at Università degli Studi di Salerno**	
TUE 18 June	11:30 h	Rigid Blocks for Masonry 1
WED 19 June	11:30 h	Rigid Blocks for Masonry 2
THU 27 June	09:00 h	Spiral stairs with the membrane and the kinematic approach

Gianmarco de Felice	**Professor at Universita degli Studi Roma Tre**	
TUE 25 June	11:30 h	Seismic behaviour of Historic Masonry: Learning from earthquakes and shake table tests
FRI 28 June	11:30 h	Seismic assessment and retrofitting. *Case studies:* San Clemente a Casauria e Casamari a Veroli

Santiago Huerta	**Professor at Universidad Politécnica de Madrid**	
TUE 18 June	09:00 h	Material masonry. Heyman's principles of limit analysis. Equilibrium and thrust lines. Arches. Cracks. Collapse of arches.
WED 19 June	09:00 h	Limit analysis, safety. Buttresses. *Case Study:* The Church of Guimarei.
TUE 25 June	09:00 h	The Gothic Structure. Flying buttresses and cross vaults. *Case Study:* The stability of the Cathedral of Palma de Mallorca.
WED 26 June	09:00 h	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.

John Ochsendorf	**Professor at Massachusetts Institute of Technology**	
THU 20 June	15:00 h	Preservation of Historic Masonry Structures

Philippe Block	**Professor at the Institute of Technology in Architecture at ETH Zurich**	
TUE 18 June	12:30 h	Overview lecture: Computational analysis using COMPAS_Masonry
TUE 18 June	17:00 h	TNA Theory
WED 19 June	13:00 h	RBE Theory
WED 19 June	16:00 h	DEM Theory
THU 20 June	16:15 h	Reimagining Shell Structures - Learning from the Master Builders

Block Research Group (ETH Zurich)	
Alessandro Dell'Endice	Block Research Group Ph.D. Student at ETH
Antonino Iannuzzo	Block Research Group Post-Doc Researcher at ETH

TUE 18 June	17:30 h	TNA Tutorial
WED 19 June	15:00 h	RBE Tutorial
WED 19 June	17:00 h	DEM Tutorial and PRD Example

COURSE SYLLABUS
FIELD WORK

Head of Field Work	
Paula Fuentes	Post-doc researcher at Vrije Universiteit Brussel
Rosa Ana Guerra	Professor at Universidad de Santiago de Compostela

MON 17 June	12:00 h	Introduction to field work.
MON 17 June	15:00 h 17:00 h	Group work: visit to the case studies, scanning and site analysis.
TUE 18 June	15:00 h	Post-process of the data.
FRI 21 June	15:00 h 17:00 h	Seminar session: Methodology and recording of distorted structures. Data post-process. Group work on point clouds.
TUE 25 June	15:00 h 17:00 h	Group work on structural analysis.
WED 26 June	15:00 h 17:00 h	Group work on structural analysis.
THU 27 June	15:00 h 17:00 h	Group work on structural analysis.
FRI 28 June	15:00 h 17:00 h	Group work on report and presentation. Reports turn in.

COURSE SYLLABUS
GUEST LECTURES

Riccardo Barsotti	**Professor at Università di Pisa**	
WED 26 June	11:30 h	Mechanical schemes (not too much complicated) of masonry panels, arches, and domes
Mario Como	**Socio dell'Accademia Pontaniana in Napoli**	
TUE 18 June	20:30 h	The kinematical approach in Statics of masonry structures
Antonello De Luca	**Professor at University of Naples Federico II**	
THU 27 June	11:30 h	TBA
Daniela Esposito **Luigi Guerriero** **Roberta Fonti**	**Professor at "Sapienza" Università di Roma** **Professor at Università degli Studi della Campania** **Research Leader at the Chair of Restoration (TUM)**	
FRI 21 June	11:30 h	Problems and recent advances in the restoration of historical masonry constructions
Robert Flatt	**Professor at Institute of Building Materials at ETH Zurich**	
SUN 23 June	17:30 h	Historic mortar: designing tailored material testing
Stefan Holzer	**Professor Dep. of Architecture at ETH Zurich**	
FRI 21 June	09:00 h	Wooden Centerings
Lynne C. Lancaster	**Andrew W. Mellon Professor-in-Charge of the Humanities at the American Academy in Rome**	
THU 20 June	15:00 h	Vaulted construction in Rome
Giulio Zuccaro	**Professor at University of Naples Federico II**	
FRI 28 June	09:00 h	Crack patterns and Collapse Mechanisms

LOCATION AND HOW TO ARRIVE

The International Summer School on Historic Masonry Structures 2019 will take place in Anagni, a well preserved Medieval town and comune in the province of Frosinone, Latium, central Italy, in the hills east-southeast of Rome.

Convitto Principe di Piemonte: Viale Giacomo Matteotti, 2, 03012 Anagni FR, Italy
Phone: (0039) 0775 734 9335

HOW TO GET TO THE CONVITTO

By car

From the A1 (E45) Milano – Napoli Freeway Autostrada, exit at Anagni-Fiuggi (km 603) and continue to the right to Anagni for 6Km.

Take the exit toward Anagni and after 1,000 meters, take the road on the left and continue straight on Viale Giacomo Matteotti. After about 1,500 meters, on the right, you will find the gate of the Convitto.

By public transportation

Anagni-Fiuggi train station is 6 km away from Anagni City Center. It can be reached from Stazione Termini in Rome every half an hour during weekdays and every hour on weekends. https://www.trenitalia.com

There is a public connection bus from Anagni-Fuiggi train station to Anagni City Center, but it does not operate on Sunday. https://servizi.cotralspa.it/PercorsiTariffe

FIELD WORK CASE STUDIES

Students will be assigned to **different groups** to work with the following case studies. They will document the actual state of preservation, and **collected data** will be used to analyse the structural behaviour of masonry structures.

S. Pietro in Vineis

Convento di S. Angelo

Church of S. Agostino

Church of S. Lorenzo

ACCOMMODATIONS
LODGING, MEALS AND LECTURES

The “Collegio Principe di Piemonte” (now “ ”) is a big built up area, developed in the period 1927-30, right outside the “Porta Cerere” of Anagni. It was built on the area of a late Medieval Monastery and in proximity of a church (San Pietro in Vineis) built in the XII century. **Accommodations, meals and lectures** will take place in the Convitto.

Rooms

There will be a **double occupancy of the rooms** to be decided at the arrival. **Bathrooms are outside the rooms**, but only shared by a maximum of two rooms (four people).

Lectures

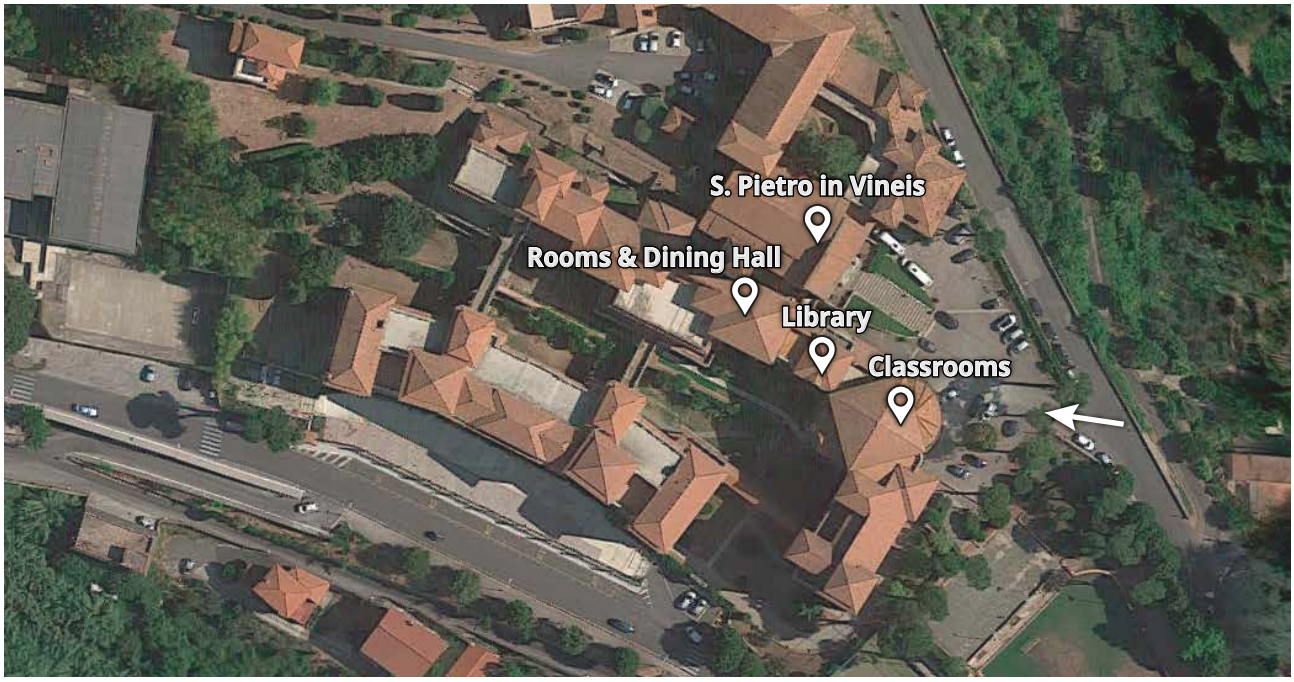
Regular and guest lectures will take place in the **classrooms** building of the Convitto, situated at the main entrance of the complex.

Dining Hall

The **dining hall** is located in the same building as the rooms, and is where all meals will be served.

Group Work

The group work associated with the case studies of the course will be held in the **library** of the Convitto (free Wi-Fi).



Find out more ...

historicmasonryschool2019.wordpress.com

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