



ENGINEERING RESEARCH INFRASTRUCTURES FOR EUROPEAN SYNERGIES

# Advancing frontier knowledge in earthquake engineering through laboratory testing





Gerard J. O'Reilly, Gian Michele Calvi IUSS Pavia, Italy



#### PROJECT OVERVIEW



ENGINEERING RESEARCH INFRASTRUCTURES FOR EUROPEAN SYNERGIES

 The objective of ERIES is to provide transnational access (TA) to research infrastructures to conduct research that will advance frontier knowledge related to seismic, wind and geotechnical hazards

Funding: European Commission Horizon Europe







• Total Budget: €11,616,118

- €10,616,225 European Commission Contribution
- €999,892 UKRI Contribution
- Duration: 4 years (01/06/2022 31/05/2026)



About | Research | Transnational Access | Dissemination | News and Events | FAQ



ERIES responds to the call INFRA-2021-SERV-01-07. Research infrastructure services advancing frontier knowledge with the overall objective providing transnational access (TA) to advanced research infrastructures in the fields of structural, seismic, wind and geotechnical engineerin. This project, together with the research infrastructure team assembled, provides access to leading experimental facilities that permit users advance frontier knowledge and conduct curiosity-driven research towards: the reduction of losses and disruption due to these hazards; it management of their associated risk; and the development of innovative solutions to address them that will contribute to a greener and mo sustainable society.

To this end, ERIES offers TA to the best European experimental facilities in each field, with new and unique infrastructures available for the first time in this programme, along with the provision of key infrastructure in Canada. It integrates past infrastructure projects' successful results and implementation such as SPBIFS and SPBA and expands acress capabilities to new communities and disciplines not yet focused on

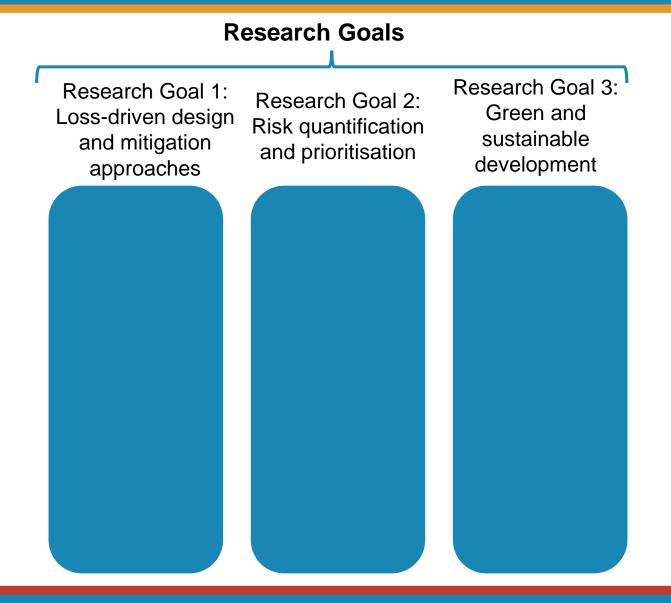
will provide authoritative input for diverse stakeholders, from Civil Protection agencies to the European seismic building code. It will hel sevelop future standards for experimental techniques in earthquake, wind and geotechnical engineering. It will provide a platform from whic uropean researchers can create innovative solutions and testbed applications of next-generation technologies.

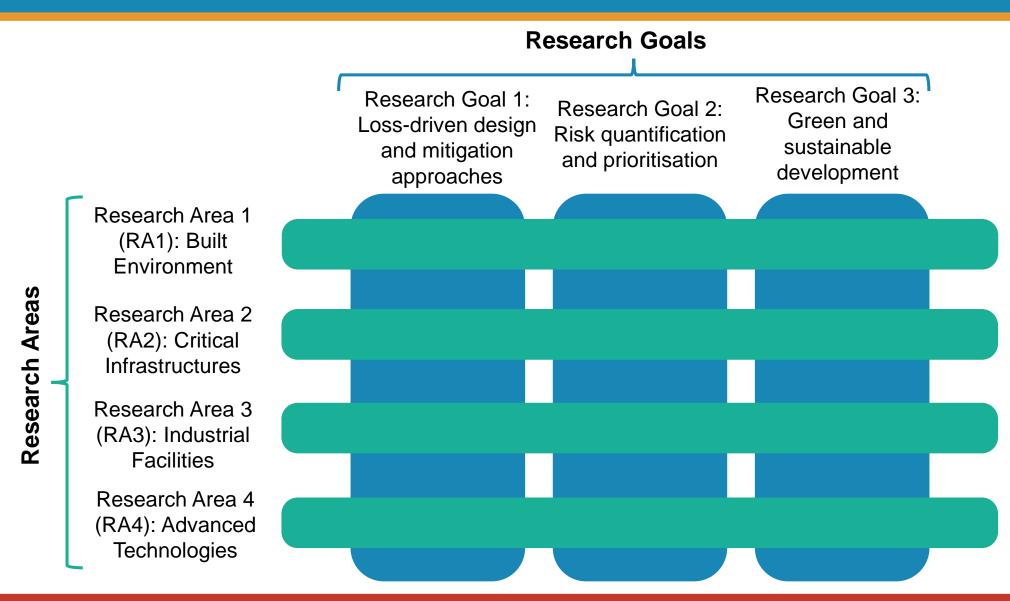
With 13 partners from 8 countries, ERIES builds an essential element toward reducing losses, managing risk, and overall a greener and more sustainable engineering future in Europe.

..-...

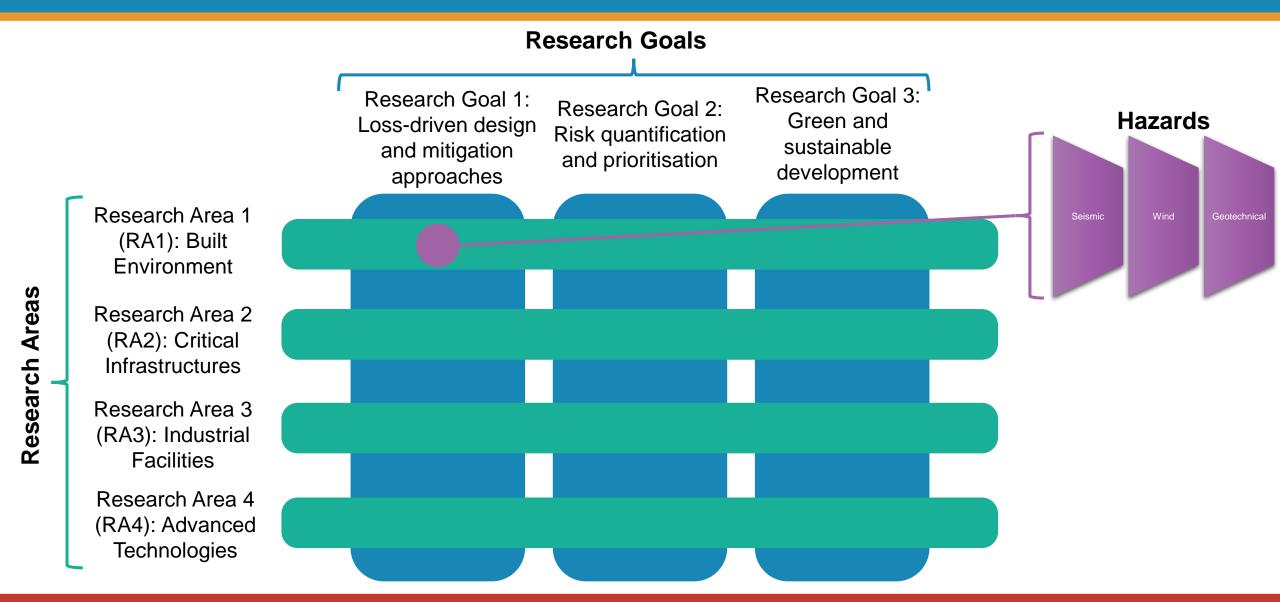
Website: www.eries.eu

Email: <u>eries@iusspavia.it</u>







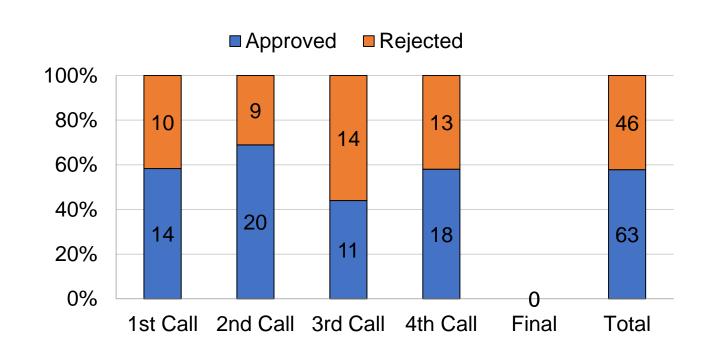


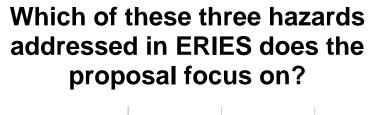


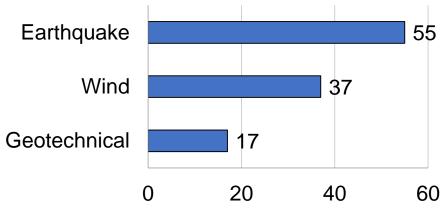




#### **APPLICATIONS**

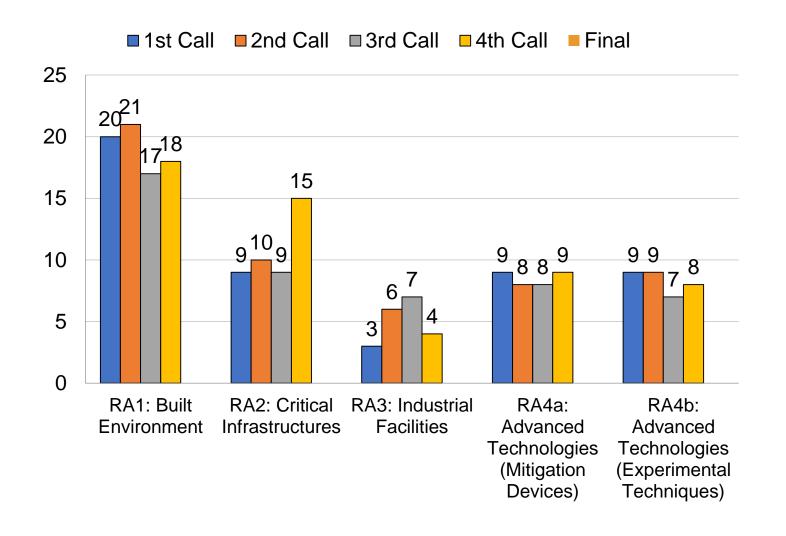


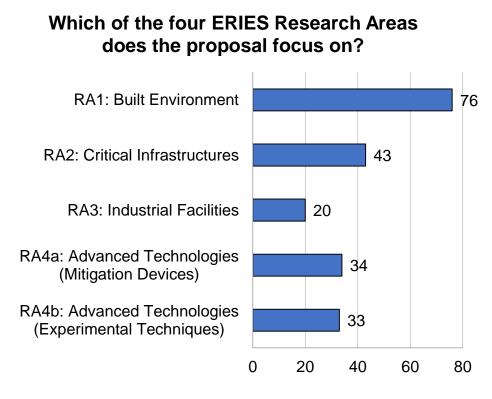




• Overall, a good engagement with an average acceptance rate of 59%

#### RESEARCH AREAS







### RESEARCH INFRASTRUCTURES

- 1. IUSS-EUC Pavia, Italy
- 2. UPAT Patras, Greece
- 3. UBRI Bristol, UK
- 4. AUTH Thessaloniki, Greece
- 5. LNEC Lisbon, Portugal
- 6. CEA Paris, France
- 7. IZIIS Skopje, North Macedonia
- 8. UNIGE Genova, Italy
- 9. WU London, Canada
- 10. TUE Eindhoven, Netherlands
- 11. CSTB Nantes, France
- 12. JRC Ispra, Italy



# USER GROUP DISTRIBUTION (1ST AND 2ND CALL)

Geographical diversity

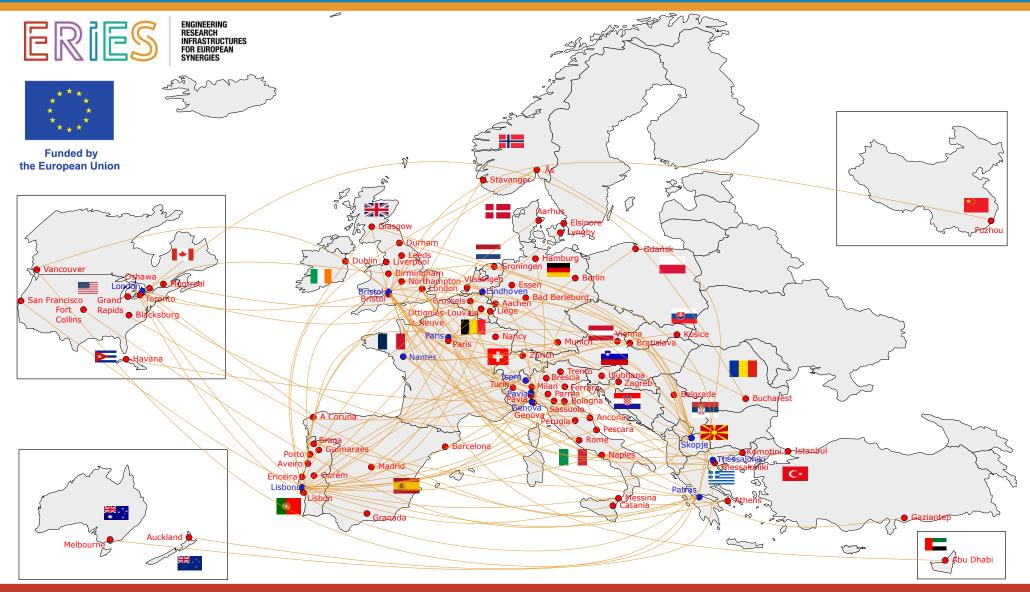
#### Users from:

- Europe
- North America
- Oceania
- Asia





### USER GROUP COLLABORATION (1<sup>ST</sup> AND 2<sup>ND</sup> CALL)





## USER GROUP DISTRIBUTION (3RD AND 4RD CALL)

Geographical diversity

#### Users from:

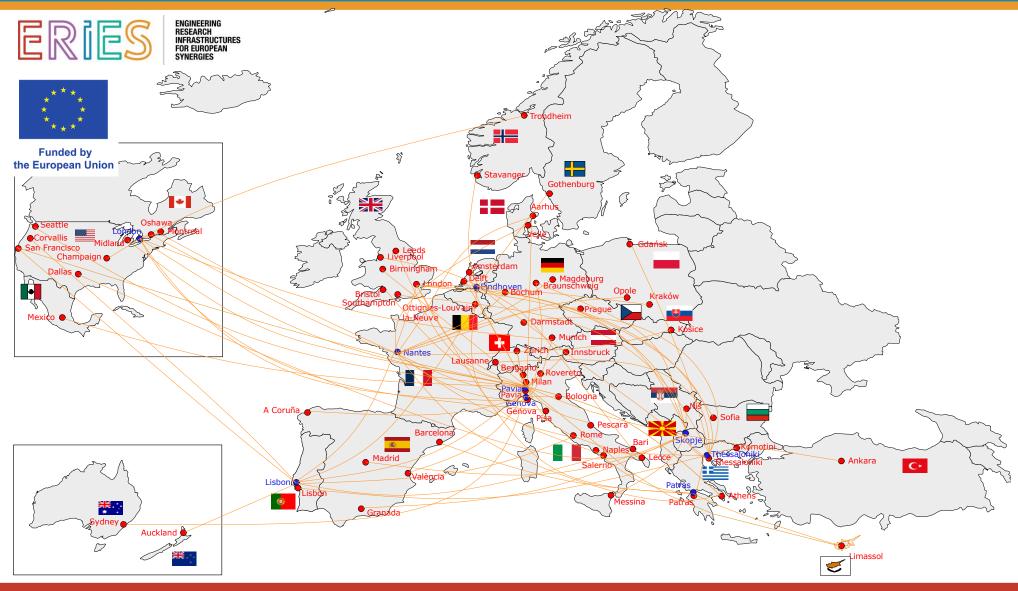
- Europe
- North America
- Oceania





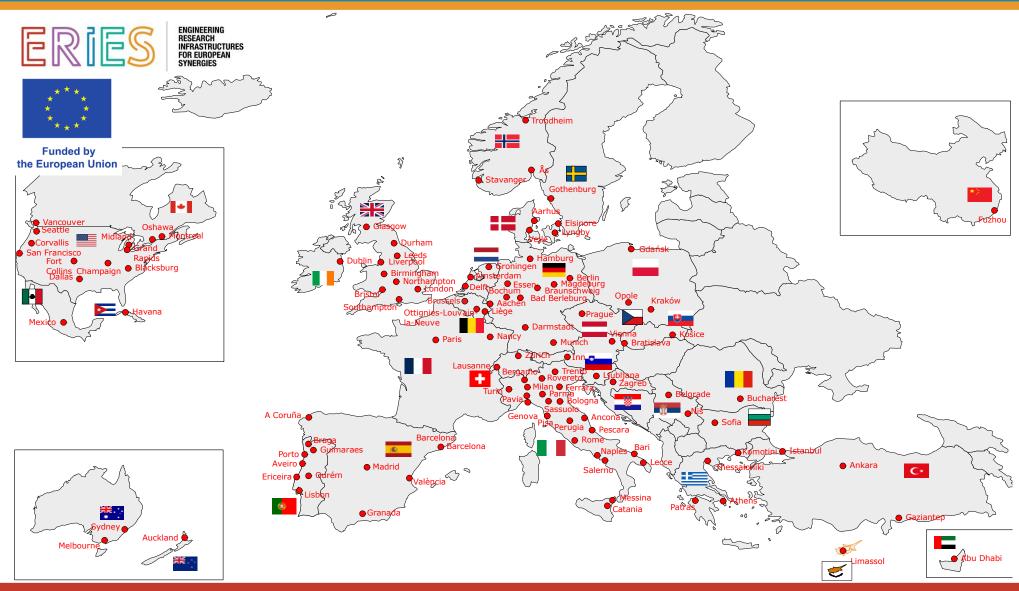


### USER GROUP DISTRIBUTION (3RD AND 4RD CALL)





### USER GROUP DISTRIBUTION (ALL CALLS)





### TECHNICAL SESSION PRESENTATIONS

AMBER 3   Convenors: G. O'Reilly, G.M. Calvi	
10:30 - 10:35	ERIES: ADVANCING FRONTIER KNOWLEDGE IN EARTHQUAKE ENGINEERING THROUGH LABORATORY TESTING G. OReilly, <u>G.M. Calvi</u>
10:35 - 10:45	MULTI-HAZARD LARGE SCALE TESTS AT THE UNIVERSITY OF BRISTOL IN THE FRAMEWORK OF EU- ERIES PROJECT  A. Sextos, G. Mylonakis, R. De Risi, F. De Luca, D. Karamitros, A. Crewe, M. Dietz, E. Vogiagaki, T. Horseman, T. Gokce, D. Williams
10:45 - 10:55	RETROFITTING OF STONE MASONRY USING INNOVATIVE GRID-BASED COMPOSITES: THE ERIES-RESTORING PROJECT  M. Ponte, G. Guerrini, L. Garcia-Ramonda, I. Lanese, E. Rizzo Parisi, G. O Reilly, F. Graziotti, A. Tsiavos, L. Pelà, A. Penna, G. Magenes, R. Bento
10:55 - 11:05	SHAKE-TABLE TESTING OF TWO U-SHAPED RC WALLS: OVERVIEW OF PROJECT ERIES-ALL4WALL J. Pacheco de Almeida, R. Hoult, A. Simar, C. Doneux, B. Payen, A. Bertholet, R. Pinho, A. Orgnoni, T. Isakovic, A. Janevski, D. Palermo, S. Lo Feudo, Y. Han, C. Gwendal, B. Mihaylov, P. Candeias, F. Ribeiro, A. Carvalho, M.L. Sousa, A.A. Correia
11:05 - 11:15	ENHANCING STATE-DEPENDENT FRAGILITY THROUGH EXPERIMENTALLY VALIDATED ENERGY-BASED APPROACHES  R. Gentile, G. Angelucci, J. Wu, P. Morandi, R. Milanesi, F. Mollaioli, G. O Reilly, F. Freddi, F. Jalayer
11:15 - 11:25	SEISMIC PERFORMANCE OF EXPOSED COLUMN-BASE PLATE CONNECTIONS IN EXISTING STEEL FRAMES  L. Di Sarno, J. Wu, N. Stathas, F. Freddi, M. D Aniello, S. Bousias, R. Landolfo, E.M. Güneyisi
11:25 - 11:35	THE REVAULT PROJECT: RESPONSE EVALUATION OF MASONRY VAULTS UNDER PSEUDO-STATIC CYCLIC TESTS  C. Calderini, C. Cirabisi, N. Mendes, N. Bianchini, C. Ferrero, P.B. Lourenço
11:35 - 11:45	FLEXIBLE JOINTS FOR RESILIENT INFILLED RC FRAMES: PRELIMINARY ANALYSES FOR SHAKING TABLE TESTING  E. Tubaldi, P. Dhir, F. Freddi, M. Marinkovic, H. Ahmadi, M. Gams, C. Butenweg, D. Losanno, B. Pantó, F. Parisi, A. Bogdanovic, J. Bojadjieva, Z. Rakicevic, V. Sheshov

14:30 - 14:40	EXPERIMENTAL ASSESSMENT OF THE COLLAPSE CAPACITY OF CODE-COMPLIANT RC FRAMES R. Pinho, C. Fontana, F. Cavalieri, A. Orgnoni, G. Gabbianelli
14:40 - 14:50	1-G SHAKING TABLE TESTING FOR SOIL RESPONSE UNDER VERTICAL ACCELERATIONS  A.L. Simonelli, E. Marotti, F. Zotti, A. Penna, M. Dietz, R. De Risi, G. Mylonakis
14:50 - 15:00	DESIGN OF SHAKING TABLE TESTS FOR RESILIENT STRUCTURES WITH FIBER-REINFORCED ELASTOMERIC ISOLATORS  D. Losanno, D. Konstantinidis, E. Tubaldi, H. Ahmadi, A. Strauss, D. De Domenico, F. Parisi, M. Vassiliou, L. Piga, F.L. Ribeiro, A.A. Correia
15:00 - 15:10	SHAKING TABLE TEST CHALLENGES FOR A LIGHTWEIGHT CONCRETE STRUCTURE  D. Kober, C. Butenweg, T. Chaudat, L. Miccoli, M. Nomikou, V. Kaloidas, M. Dumitrescu, C. Czaderski, F. Bernauer
	SHAKING TARI E TESTS OF A 3-STOREY SEI E-CENTRING STEEL MRE- PRELIMINARY ANALYSIS AND

Barbosa, S. Ramhormozian, D. Grant, G. Rizzano, F.L. Ribeiro, A.A. Correia

E. Elettore, F. Freddi, M. Latour, L. Pieroni, S. Di Benedetto, F. Gutierrez Urzua, A.B. Francavilla, B. Simpson, A.R.

ERIES-STRONG: SEISMIC TESTING OF MASONRY-INFILLED FRAMES RETROFITTED WITH CLT PANELS

I. Giongo, F. Graziotti, J. Branco, N. Stathas, S. Bournas, F. Smiroldo, A. Bartolotti, N. Damiani, A. Albino, D. Dizhur

MONITOR 14 | Convenors: G. O'Reilly, G.M. Calvi

15:10 - 15:20

15:20 - 15:30

