
GABRIELE GUERRINI, Ph.D., P.E.

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EDUCATION

- **Ph.D., Structural Engineering**, December 20, 2014
University of California, San Diego, USA
Dissertation: *Seismic Performance of Precast Concrete Dual-Shell Steel Columns for Accelerated Bridge Construction*
Faculty advisor: Prof. José I. Restrepo.
- **M.S., Structural Engineering**, June 11, 2010
University of California, San Diego, USA
GPA: 3.975/4.000
Faculty advisor: Prof. José I. Restrepo.
- **Laurea Specialistica (graduate degree), Civil Engineering**, July 25, 2008
University of Bologna, Italy
Final grade: 110/110 Summa cum Laude
Thesis: *Effects of Non-Structural Masonry Walls on the Dynamic Response of a Reinforced Concrete Frame Building*
Faculty advisor: Prof. Marco Savoia.
- **Laurea (undergraduate degree), Civil Engineering**, October 11, 2005
University of Bologna, Italy
Final grade: 110/110 Summa cum Laude
Thesis: *Problems in Structural Health Monitoring Using Fiber Optic Sensors*
Faculty advisor: Prof. Giovanni Pascale Guidotti Magnani.

RESEARCH INTERESTS

- Performance-based engineering under common and extreme loading scenarios.
- Structural dynamics, earthquake engineering, and seismic design and assessment of structures.
- Full-scale and reduced-scale testing of structural components and systems, under monotonic, quasi-static cyclic, and dynamic loading.
- Nonlinear numerical modeling and structural analysis.
- Mechanics, design, and modeling of masonry, reinforced concrete, prestressed and post-tensioned concrete, steel, and composite steel-concrete structures.
- Structural retrofit and rehabilitation with innovative, sustainable technologies, compatible or integrated with energy-efficiency enhancement of buildings.
- Development of innovative resilient structural solutions, such as self-centering systems, rocking foundations, seismic isolation, and supplemental energy dissipation.
- Development and application of high-performance cementitious, metallic, and polymeric materials.

RESEARCH EXPERIENCE

- **Assistant Professor (RTD/b)**, May 2024-present
Department of Civil Engineering and Architecture, University of Pavia, Italy.
 - ◇ Development, modeling, and testing of sustainable seismic retrofit strategies for stone and brick masonry buildings.
 - ◇ Quasi-static cyclic tests of full-scale unreinforced and retrofitted masonry sub-assemblages.
 - ◇ Experimental characterization of masonry and strengthening materials and components.
 - ◇ Nonlinear static and time-history analyses of masonry structures.
 - ◇ Development of an advanced macroelement for modeling masonry and reinforced masonry/concrete structures.
 - ◇ Development of decisional tools for the integrated structural/energy retrofit of buildings.
- **National Scientific Licensure as an Associate Professor (ASN-II fascia)**, June 15, 2023
Ministry of University and Research, Italy.
- **Assistant Professor (RTD/a)**, February 2022-April 2024
Department of Civil Engineering and Architecture, University of Pavia, Italy.
 - ◇ Development, modeling, and testing of sustainable seismic retrofit strategies for stone and brick masonry buildings and infilled frames.
 - ◇ Dynamic shake-table tests and quasi-static cyclic tests of full-scale masonry buildings, infilled frames and sub-assemblages.
 - ◇ Experimental characterization of masonry and strengthening materials and components.
 - ◇ Performance assessment of masonry structures under tectonic and induced seismicity and derivation of risk scenarios for building portfolios.
 - ◇ Nonlinear static and time-history analyses of masonry structures.
 - ◇ Development of an advanced macroelement for modeling masonry and reinforced masonry/concrete structures.
 - ◇ Industrialization of an innovative kinematic seismic isolation device.
 - ◇ Assessment of the residual capacity of precast/prestressed concrete buildings after fire exposure.
- **Post-Doctoral Researcher (Assegnista di Ricerca)**, January 2016-January 2022
Department of Civil Engineering and Architecture, University of Pavia, and EUCENTRE, Italy
Supervisor: Prof. Andrea Penna.
 - ◇ Development, modeling, and testing of sustainable seismic retrofit strategies for stone and brick masonry buildings.
 - ◇ Dynamic shake-table tests and quasi-static cyclic tests of masonry buildings and sub-assemblages, at full and reduced scale.
 - ◇ Experimental characterization of masonry materials and components.
 - ◇ Performance assessment of masonry structures under tectonic and induced seismicity.

- ◇ Nonlinear static and time-history analyses of masonry structures, including methods for the evaluation of seismic displacement demands for nonlinear static analysis.
- ◇ Development and testing of an innovative kinematic seismic isolation device.
- **Graduate Student Researcher (Dottorando di Ricerca)**, September 2008-August 2014
Department of Structural Engineering, University of California, San Diego, USA
Faculty advisor: Prof. José I. Restrepo.
 - ◇ Development of a seismic-resilient low-damage, self-centering technology for post-tensioned precast composite steel-concrete bridge piers, including design guidelines.
 - ◇ Dynamic shake-table tests and quasi-static cyclic tests of conventional reinforced concrete, self-centering, and rocking bridge and building structures, at full and reduced scale.
 - ◇ Experimental characterization of conventional and innovative materials: steel, concrete, mortar, fiber-reinforced mortar, rubber, polyurethane.
 - ◇ Nonlinear static and time-history analyses of conventional reinforced concrete and self-centering structural systems.
 - ◇ Implementation of a displacement-driven nonlinear adaptive pushover algorithm, with consideration of higher-mode effects.
 - ◇ Extent of plasticity in reinforced concrete members with flexure-shear interaction effects.
- **Laurea Magistrale Thesis Research**, March 2008-July 2008
Department of Civil, Environmental, and Materials Engineering, University of Bologna, Italy
Faculty advisor: Prof. Marco Savoia.
 - ◇ Investigation of the effect of masonry infills on the dynamic and seismic response of a reinforced concrete frame building, via nonlinear static and time-history analyses.
- **Laurea Thesis Research**, June 2005-October 2005
Department of Civil, Environmental, and Materials Engineering, University of Bologna, Italy
Faculty advisor: Prof. Giovanni Pascale Guidotti Magnani.
 - ◇ Laboratory tests with application of fiber optic sensors to fiber-reinforced polymer specimens, including data processing and interpretation.

TEACHING EXPERIENCE

- **Teacher/Instructor:** prepared and taught lessons; developed course material; held office hours and provided guidance throughout the learning process; prepared, solved, and graded homework, term projects, laboratory activities, and exams; member of the final examination committee.
 - ◇ *Seismic Design of Structures*
Dept. of Civil Engineering and Architecture, University of Pavia, Italy
M.S. program: Civil Engineering
A.Y. 2023/24, Fall semester, 36 hrs. frontal lessons (3 CFU).
 - ◇ *Reinforced Concrete Structures*
Dept. of Civil Engineering and Architecture, University of Pavia, Italy, and University School for Advanced Studies (IUSS), Pavia, Italy
M.S. program: Civil Engineering for Mitigation of Risk from Natural Hazards

- Ph.D. program: Understanding and Managing Extremes
 A.Y. 2023/24, Fall semester, 24 hrs. frontal lessons (3 CFU)
 A.Y. 2022/23, Fall semester, 24 hrs. frontal lessons (3 CFU)
 A.Y. 2021/22, Fall semester, 24 hrs. frontal lessons (3 CFU)
 A.Y. 2020/21, Fall semester, 24 hrs. frontal lessons (3 CFU).
- ◇ *Laboratory of Structural Engineering*
 Dept. of Civil Engineering and Architecture, University of Pavia, Italy
 M.S. program: Building Engineering and Architecture
 A.Y. 2019/20, Spring semester, 36 hrs. laboratory (2 CFU).
 - ◇ *Structural Engineering*
 Dept. of Civil Engineering and Architecture, University of Pavia, Italy, and Tongji
 University of Shanghai, China
 Dual M.S. program: Building Engineering and Architecture
 A.Y. 2018/19, Fall semester, 21 hrs. frontal lessons (2 CFU).
 - ◇ *Earthquake in Action*
 California State Summer School for Mathematics and Science (COSMOS), University of
 California, San Diego, USA
 Summer program for high-school students
 A.Y. 2008/09, Summer quarter, 18 hrs. frontal lessons and 8 hrs. laboratory.
- **Teaching Assistant/Tutor:** prepared and taught weekly discussion and project sessions as well as occasional lessons; held office and laboratory hours; prepared, solved, and graded homework, term projects, and exams.
 - ◇ *Structural Design*
 Dept. of Civil Engineering and Architecture, University of Pavia, Italy
 B.S. program: Civil and Environmental Engineering
 Instructor: Prof. A. Penna
 A.Y. 2020/21, Spring quarter, 10 hrs. frontal lessons and 16 hrs. laboratory (online)
 A.Y. 2019/20, Spring quarter, 16 hrs. laboratory (online)
 A.Y. 2018/19, Spring quarter, 16 hrs. laboratory
 A.Y. 2017/18, Spring quarter, 16 hrs. laboratory
 A.Y. 2016/17, Spring quarter, 16 hrs. laboratory
 A.Y. 2015/16, Spring quarter, 16 hrs. laboratory.
 - ◇ *Reinforced Concrete Structures*
 Dept. of Civil Engineering and Architecture, University of Pavia, Italy, and University
 School for Advanced Studies (IUSS), Pavia, Italy
 M.S. program: Civil Engineering for Mitigation of Risk from Natural Hazards
 Ph.D. program: Understanding and Managing Extremes (UME)
 Instructor: Prof. B. Mihaylov
 A.Y. 2017/18, Fall quarter, 12 hrs. frontal lessons.
 - ◇ *Advanced Seismic Design of Structures (SE 223)*
 Dept. of Structural Engineering, University of California, San Diego, USA
 M.S. program: Structural Engineering
 Instructor: Prof. J.I. Restrepo
 A.Y. 2013/14, Spring quarter, 20 hrs. frontal lessons and 5 hrs. laboratory
 A.Y. 2012/13, Spring quarter, 20 hrs. frontal lessons and 5 hrs. laboratory
 A.Y. 2011/12, Spring quarter, 20 hrs. frontal lessons and 5 hrs. laboratory

- A.Y. 2010/11, Spring quarter, 20 hrs. frontal lessons and 5 hrs. laboratory
 A.Y. 2009/10, Spring quarter, 20 hrs. frontal lessons and 5 hrs. laboratory
 A.Y. 2008/09, Spring quarter, 20 hrs. frontal lessons and 5 hrs. laboratory.
- ◇ *Design of Structural Concrete/Prestressed Concrete (SE 151B)*
 Dept. of Structural Engineering, University of California, San Diego, USA
 B.S. and M.S. program: Structural Engineering
 Instructor: Prof. P.B. Shing
 A.Y. 2013/14, Spring quarter, 20 hrs. frontal lessons
 A.Y. 2006/07, Spring quarter, 20 hrs. frontal lessons.
- ◇ *Design of Structural Concrete/Reinforced Concrete (SE 151A)*
 Dept. of Structural Engineering, University of California, San Diego, USA
 B.S. program: Structural Engineering
 Instructor: Prof. J.I. Restrepo
 A.Y. 2013/14, Winter quarter, 20 hrs. frontal lessons
- ◇ *Statistics, Probability and Reliability (SE 125)*
 Dept. of Structural Engineering, University of California, San Diego, USA
 B.S. program: Structural Engineering
 Instructor: Prof. J.P. Conte
 A.Y. 2013/14, Fall quarter, 20 hrs. frontal lessons.
- ◇ *Fundamentals of Seismic Design*
 University of Pavia, Italy, and University School for Advanced Studies (IUSS), Pavia, Italy
 M.S. program: ROSE School
 Instructor: Prof. J.I. Restrepo
 A.Y. 2009/10, Fall semester, 20 hrs. frontal lessons and 5 hrs. laboratory.
- ◇ *Earthquake in Action*
 California State Summer School for Mathematics and Science (COSMOS), University of California, San Diego, USA
 Summer program for high-school students
 Instructors: Prof. P.B. Shing and Dr. K. Robinson
 A.Y. 2006/07, Summer quarter, 8 hrs. frontal lessons and 24 hrs. laboratory.

MENTORING AND SUPERVISING EXPERIENCE

- **Undergraduate students (B.S. or Laurea):** research activity, experimental work, numerical/analytical simulations, and presentations.
 - ◇ Dept. of Civil Engineering and Architecture, University of Pavia, Italy:
 - A.Y. 2023/24: Federico Balotti, Lorenzo Cravidi, Tommaso Molinari, Sofia Ricci
 - A.Y. 2022/23: K. Badawy, M. Dellapiazza, A. Raniolo, A. Re, J. Rrasa, L. Sertori
 - A.Y. 2021/22: Andrea Tretola
 - A.Y. 2019/20: Riccardo Cerutti, Diego Dolce, Marco Givonetti, Mirco Merlin
 - A.Y. 2018/19: Hajar Sif Essalam, Renato Solimena
 - A.Y. 2017/18: Sarah Ballarin, Giuseppe Crisafulli, Luca Franzoni, Alberto Gagliardi
 - A.Y. 2016/17: A. Airoidi, A. Bruggi, M. Caserini, D. Iorio, S. Minelli
 - A.Y. 2015/16: Marco Termine.
- **Graduate students (M.S. or Laurea Magistrale):** individual studies, research activity, experimental work, numerical/analytical simulations, theses, and presentations.

- ◇ Dept. of Civil Engineering and Architecture, University of Pavia, Italy:
 - A.Y. 2023/24: Andrea Tretola
 - A.Y. 2022/23: Diego Dolce
 - A.Y. 2021/22: Hicham Aghouri, Francesca Corona
 - A.Y. 2020/21: Mattia Di Martino, Alessandro Frigerio, Filippo Domenico Scannella
 - A.Y. 2019/20: Cecilia Noto, Federico Sacchi
 - A.Y. 2018/19: A. Airoidi, A. Bruggi, L. Cani, C. Salvatori, N. Vignati
 - A.Y. 2017/18: Gian Carlo De Sanctis, Luca Mazzella, Iliaria Nasso, Camilla Rossi
 - A.Y. 2016/17: Sacha Pellegrini
 - A.Y. 2015/16: Paolo Comini, Francesca Di Santo, Simone Scherini.
- ◇ Dept. of Structural Engineering, University of California, San Diego, USA:
 - A.Y. 2013/14: Anthony Trgovcich.
- ◇ Dept. of Structural Engineering, University of California, San Diego, USA, and Dept. of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Italy:
 - A.Y. 2011/12: Milena Massari, Athanassios Vervelidis
 - A.Y. 2010/11: Francesco Carrea.
- **Ph.D. students:** research/teaching development, experimental work, numerical/analytical simulations, papers, theses, and presentations.
 - ◇ Dept. of Civil Engineering and Architecture, University of Pavia, Italy:
 - A.Y. 2020/21 through 2023/24: Christian Salvatori
- **Student competitions:**
 - ◇ Dept. of Structural Engineering, University of California, San Diego, USA:
 - A.Y. 2012/13: EERI Undergraduate Seismic Design Competition Team.

SCHOLARLY SERVICE

- **Member of Graduation Committees (Commissioni di Laurea), 2020-present**
 - ◇ Laurea (undergraduate degree) in Civil and Environmental Engineering, Dept. of Civil Engineering and Architecture, University of Pavia, Italy
 - July 18, 2024
 - March 14, 2024
 - October 26, 2023
 - September 27, 2023
 - ◇ Laurea Magistrale (graduate degree) in Civil Engineering, Dept. of Civil Engineering and Architecture, University of Pavia Italy
 - December 19, 2023
 - June 14, 2023
 - April 27, 2023
 - March 16, 2022
 - June 12, 2020
 - ◇ Laurea Magistrale (graduate degree) in Environmental Engineering, Dept. of Civil Engineering and Architecture, University of Pavia Italy
 - June 14, 2023

PROFESSIONAL EXPERIENCE

- **Structural Engineering Consultant**, January 2014-present
 - ◇ Peer review of a risk study on the seismic retrofit demand in the Groningen Region (The Netherlands) under varying code requirements and seismic hazard induced by gas extraction. Review of the identification of local structural typologies, of the selection of case-study buildings, of the seismic analysis procedures and of their implementation.
 - ◇ Structural design and numerical analysis (under gravity, wind, explosion, and seismic loads) of an industrial steel building located in Vác, Hungary. Design of superstructure steel beams, columns, and braces; review of construction/connection details and shop drawings; assistance to the design of the foundation system.
 - ◇ Preliminary evaluation of the structural layout of two high-rise buildings located in Tijuana, Baja California, Mexico.
 - ◇ Seismic vulnerability assessment and retrofit of an existing school masonry building, located in the province of Alessandria, Italy. Mitigation of out-of-plane local mechanisms by tie-rods and continuous connections between walls and diaphragms. Structural design and numerical analysis of a new steel emergency staircase.
 - ◇ Structural design and numerical analysis (under gravity and seismic loads) of a modified layout for an existing unreinforced masonry building, adapted to residential use, located in the province of Pavia, Italy. Partial replacement of the floor framing with composite steel-concrete deck, strengthening of existing floor diaphragms, and seismic assessment of the modified structure.
 - ◇ Peer review of the nonlinear static and dynamic analyses of an existing unreinforced masonry building (Ashleigh Court) located in Wellington, New Zealand.
 - ◇ Design of the vibration isolation system for a glass showcase at the Whitney Museum in New York, USA.
 - ◇ Preliminary analysis and design (under gravity and seismic loads) of a new 2-story timber and steel frame house, in Richmond, CA, USA.
 - ◇ Review of the design (under gravity and seismic loads) of a new 34-story steel frame/concrete core building, for garage and medical office use, in Tijuana, Mexico.
 - ◇ Structural design and numerical analysis (under gravity and seismic loads) of a new 6-story reinforced concrete shear-wall braced building, for commercial and office use in Oakland, CA, USA. Application of a performance-based approach to reduce foundation costs compared to standard code requirements. Structural consulting for the evaluation of proposed modifications during construction phases.

- **Junior Engineer and Student Trainee**, September 2014-December 2015
City and County of San Francisco, San Francisco Public Works, San Francisco, CA
 - ◇ Structural design and numerical analysis (under gravity and seismic loads) of a new 3-story steel frame building, with special moment-resisting frames and buckling-restrained braces, for the San Francisco Fire Department (Fire Station 05). Application of a performance-based approach to ensure immediate occupancy even after major seismic events.
 - ◇ Preliminary analysis and design (under gravity and seismic loads) of a new warehouse with reinforced concrete shear-walls and steel-frame deck, for garage and mechanical shop use in San Francisco, CA, USA (General Services Administration, Central Shops).

- ◇ Review of the non-linear static analysis and proposed seismic retrofit of an existing 9-story reinforced concrete building dating back to the 1970s, for the San Francisco General Hospital (Building 5).
- ◇ Seismic vulnerability assessment of an existing warehouse with unreinforced masonry walls and steel-frame deck, dating back to the end of 1800/beginning of 1900 (Animal Care & Control, 1401 Bryant Street). Preliminary design of a modified structural layout with new steel frames and seismic retrofit of the existing masonry with shotcrete, adding a new intermediate floor and adapting the original industrial warehouse to office space and veterinary clinic.
- ◇ Seismic vulnerability assessment of an existing 2-story building with tilt-up precast concrete walls and timber floors, dating back to the 1960s, for the San Francisco Fire Department (Fire Station 49). Design of the seismic retrofit for the roof timber diaphragm.
- ◇ Seismic vulnerability assessment of an existing 5-story steel/concrete frame building with stone masonry infills, dating back to the 1910s/1930s, for medical clinic and office use in San Francisco, CA, USA (Department of Public Health Headquarters, 101 Grove Street). Structural survey and preliminary vulnerability assessment.
- ◇ Seismic vulnerability assessment of an existing reinforced concrete parking structure, dating back to the 1960s and recently upgraded with steel braces, in San Francisco, CA, USA (Ellis O'Farrell Garage). Numerical modeling and linear dynamic analysis.
- ◇ Visual inspection and performance evaluation of existing bridges and tunnels within the City and County of San Francisco.

PROFESSIONAL AFFILIATIONS

- Board of Engineers, Province of Bologna, Italy: Professional Civil Engineer, 2010-present.
- Board for Professional Engineers, Land Surveyors, and Geologists of California: Engineer-in-Training, 2011-present.
- International Federation for Structural Concrete (fib): 2019-present.
- Italian Association for Structural Concrete (aicap): 2019-present.
- Collegio dei Tecnici della Industrializzazione Edilizia (CTE): 2019-present.
- American Society of Civil Engineers (ASCE): member, 2010-present.
- Post-Tensioning Institute (PTI): member, 2010-present.
- American Institute of Steel Construction (AISC): member, 2010-present.
- American Concrete Institute (ACI): member, 2009-present.
- Structural Engineers Association of California (SEAOC): member, 2009-2015.

PROFESSIONAL SERVICE

- **Journal Peer Reviewer**, November 2016-present
 - ◇ *ACI Structural Journal*, American Concrete Institute.
 - ◇ *Bulletin of Earthquake Engineering*, Springer.

- ◇ *Engineering Structures*, Elsevier.
- ◇ *International Journal of Architectural Heritage*, Taylor & Francis.
- ◇ *Journal of Structural Engineering*, American Society of Civil Engineers.
- ◇ *Journal of Earthquake Engineering*, Taylor & Francis.
- ◇ *Structural Concrete*, John Wiley & Sons.
- ◇ *Structures*, Elsevier.
- **Conference Session Chair**
 - ◇ *Seismic Isolator 2*, 17th World Conference on Earthquake Engineering, Sendai, Japan, September 27-October 2, 2021.
- **Post-Earthquake Reconnaissance and Assessment**, April 2010-present
 - ◇ Central-southern Turkey, after the February 2023 events.
 - ◇ Central Italy, during the 2016-2017 sequence.
 - ◇ Emilia-Romagna, Italy, after the May 2012 events.
 - ◇ Mexicali, Baja California, Mexico, after the April 04, 2010 event.

HONORS AND AWARDS

- *Best paper Award (2nd place)*, 17th Brick and Block Masonry Conference, Krakow, Poland, July 5-8, 2010 (online). Paper title: “An Innovative Timber System for the Seismic Retrofit of Unreinforced Brick Masonry Buildings”, by Damiani, N., Miglietta, M., Guerrini, G., and Graziotti, F.
- *Best Presentation Award*, 10th International Conference on Urban Earthquake Engineering, Tokyo Institute of Technology, Japan, March 2013. Paper title: “Seismic Response of Recentering Precast Composite Concrete-Dual-Shell-Steel Columns”, by Guerrini, G. and Restrepo, J.I.
- *E.K. Rice and W.C. Bailey Memorial Scholarship*, Post-Tensioning Institute, USA, 2010/11.
- *Structural Engineering Department Fellowship*, UC San Diego, USA, 2008/09.
- *Overseas - Education Abroad Program Scholarship*, University of Bologna, Italy, 2006/07.
- *Arrigo and Anella Focherini Memorial Scholarship*, University of Bologna, Italy, 2004/05.

INVITED LECTURES, SEMINARS, AND PRESENTATIONS

1. *Existing Masonry Buildings and Intervention Criteria*
Professional development course for the Board of Engineers, Province of Pavia, through EUCENTRE Foundation, Italy
November 28-30, 2023.
2. *Seismic Assessment and Retrofit of Existing Masonry Buildings*
Professional development course for the City of Bologna through EUCENTRE Foundation, Italy
January 19, 2023.

3. *Seismic Analysis of Masonry Buildings in Historical City Centers*
Webinar for S.T.A. Data S.r.l.
December 15, 2022.
4. *Assessment Methods for Nonlinear Static Analysis of Masonry Structures*
Seminar for S.T.A. Data S.r.l. at SAIE fair, Bologna, Italy
October 21, 2022.
5. *Innovative Strengthening Solutions for Masonry Structures*
Seminar for S.T.A. Data S.r.l. at SAIE fair, Bologna, Italy
October 21, 2022.
6. *Innovative Strengthening Solutions for Masonry Structures*
Webinar for S.T.A. Data S.r.l.
October 20, 2022.
7. *Improving Connections against Local Mechanisms in Masonry Buildings*
Webinar for S.T.A. Data S.r.l.
September 29, 2022.
8. *Nonlinear Static Analysis of Masonry Structures: Current and Refined Assessment Methods*
Webinar for S.T.A. Data S.r.l.
May 19, 2022.
9. *Safety Assessment for Building Aggregates: Methodology and Case-Study Analyses - Local Collapse Mechanisms*
Professional development course for Invitalia through ReLUIS Consortium, Italy (online)
February 22, 2022.
10. *Seismic Vulnerability Assessment and Mitigation of Existing Masonry Buildings*
Webinar for S.T.A. Data S.r.l.
February 10, 2022.
11. *Innovative Technologies of Seismic Strengthening Systems for RC Structural Elements – Seismic Vulnerability of Existing RC Frame Buildings*
Webinar for Laterlite S.p.A. and S.T.A. Data S.r.l. (online)
October 26, 2021.
12. *Seismic Retrofit of Masonry Buildings: from Shake-Table Testing to Design*
Webinar in “Workshop on the Seismic Assessment of Existing Masonry Buildings using 3Muri and NPR9998-2018-2020: from Theory to Practical Applications” by Sismica360 S.r.l. and EconStruct
April 30, 2021
13. *Assessment Methods for Nonlinear Static Procedures*
Webinar in “Workshop on the Seismic Assessment of Existing Masonry Buildings using 3Muri and NPR9998-2018-2020: from Theory to Practical Applications” by Sismica360 S.r.l. and EconStruct
April 21, 2021.
14. *Seismic Vulnerability Assessment and Mitigation of Existing Masonry Buildings*
Webinar in workshop by Mapei S.p.A. Croatia and S.T.A. Data S.r.l.
July 28, 2020.
15. *Local Mechanism Analysis in Masonry Structures According to the 2018 Italian Building Code*
Seminar for S.T.A. Data S.r.l. at Digital & BIM Italia fair, Bologna, Italy
November 22, 2019.

16. *Experimental Assessment of the Seismic Performance of a Stone Masonry Building Aggregate in Basel*
Seminar in “Erdbebenüberprüfung und Erdbebenertüchtigung von Natursteinmauerwerksgebäuden” workshop, part of “Basler Erdbebenkurse” series, Basel, Switzerland
September 12, 2019.
17. *Existing Masonry Buildings and Retrofit Methods According to the 2018 Italian Building Code – Analysis and Assessment of the Seismic Response of Existing Unreinforced Masonry Buildings*
Professional development course (e-learning mode) for P-Learning S.r.l., Brescia, Italy
July 9-10, 2019.
18. *Light Retrofit Solutions and Seismic Isolation Systems*
Seminar for EconStruct, Leeuwarden, The Netherlands
May 10, 2019.
19. *Equivalent-Frame Modeling of masonry Buildings: an Effective Approach for Calculation and Interpretation*
Seminar in workshop by S.T.A. Data S.r.l. and ERGOCAD, Porto Palace Conference Hall, Thessaloniki, Greece
June 22, 2018.
20. *Seismic Performance of Conventional Reinforced Concrete and Low-Damage Bridge Columns*
Seminar for the Dept. of Civil and Environmental Engineering and Construction, University of Nevada, Las Vegas, USA
March 14, 2016.
21. *Hybrid Rocking Recentering Systems: Application to Columns for Accelerated Bridge Construction*
Seminar for San Francisco Public Works, City and County of San Francisco, USA
October 15, 2014.
22. *Seismic Behavior of a Recentering Bridge Column for Accelerated Bridge Construction*
Seminar for the NEES-REU Orientation, University of California, San Diego, USA
June 20, 2013.
23. *Seismic Design & Performance of Recentering Bridge Columns for Accelerated Bridge Construction*
Seminar for the Dept. of Civil, Environmental, and Architectural Engineering, University of Kansas, USA
April 15, 2013.
24. *Large Scale Validation of the Seismic Performance of Reinforced Concrete Bridge Columns*
Seminar for the Dept. of Structural Engineering, University of California, San Diego, USA
January 29, 2013.
25. *Seismic Performance of Ductile Reinforced Concrete Bridge Piers*
Seminar for the University of the Republic of San Marino and University of Modena and Reggio Emilia, Italy
December 21, 2012.
26. *Seismic Response of Recentering Low-Damage Precast Concrete Dual-Shell Steel Columns*
Poster presentation at the 2012 PEER Annual Meeting, Pacific Earthquake Engineering Research Center, Berkeley, CA, USA
October 26-27, 2012.
27. *Advanced Precast Concrete Dual-Shell Steel Columns*
Poster presentation at the 2011 PEER Annual Meeting, Pacific Earthquake Engineering Research Center, Berkeley, CA, USA
September 30-October 1, 2011.

28. *Large-Scale Validation of Seismic Performance of Bridge Columns*
Plenary session presentation at the 2011 Quake Summit and MCEER Annual Meeting, Network for Earthquake Engineering Simulation and Multi-Disciplinary Center for Earthquake Engineering Research, Buffalo, NY, USA
June 9-11, 2011.
29. *Large-Scale Validation of Seismic Performance of Bridge Columns*
Poster presentation at the 2010 Quake Summit and PEER Annual Meeting, Network for Earthquake Engineering Simulation and Pacific Earthquake Engineering Research Center, San Francisco, CA, USA
October 8-9, 2010.
30. *Ductile Behavior of Reinforced Concrete Structures*
Seminar for the Dept. of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Italy
December 16, 2009 and May 16, 2010.
31. *Advanced Precast Concrete Dual-Shell Steel Columns*
Poster presentation at the 2009 PEER Annual Meeting, Pacific Earthquake Engineering Research Center, San Francisco, CA, USA
October 15-16, 2009.

OTHER SKILLS

- **Computer Skills**

- ◇ Programming languages and computational packages: Matlab, Tcl, Fortran, Mathematica.
- ◇ Computer-aided design: AutoCAD.
- ◇ Structural analysis/finite element software packages: OpenSees, Ruaumoko, SAP-2000, ETABS, Midas, Tremuri, SeismoStruct.
- ◇ Other software: Windows O.S., MS Office (Word, Excel, PowerPoint, Access).

- **Language Skills**

- ◇ Italian: native proficiency.
- ◇ English: excellent proficiency (C2).
- ◇ French: basic knowledge (A2).
- ◇ Spanish: basic knowledge (A2).

PUBLICATIONS

Peer-Reviewed Journal Publications

1. Ponte, M., **Guerrini, G.**, Penna, A., and Bento, R. (2024). “Modelling the Interactions of a Historical Aggregate with the Equivalent Frame Method”, *Revista Portuguesa de Engenharia de Estruturas*. Accepted for publication.
2. Giresini, L., **Guerrini, G.**, and Graziotti, F. (2024). “Multicriteria Decision Tools for Selection of Sustainable Integrated Retrofits: Application to the Seismic and Energy Upgrade of a Masonry Building”, *Journal of Building Engineering*, 95, 110017. DOI: 10.1016/j.job.2024.110017.

3. Damiani, N., **Guerrini, G.**, and Graziotti, F. (2024). “Design Procedure for a Timber-Based Seismic Retrofit Applied to Masonry Buildings”, *Engineering Structures*, 301, 116991. DOI: 10.1016/j.engstruct.2023.116991.
4. **Guerrini, G.**, Damiani, N., Miglietta, M., and Graziotti, F. (2024). “Experimental Validation of Analytical Equations for Retrofitting Masonry Buildings with Timber Frames and Boards”, *Engineering Structures*, 300, 117124. DOI: 10.1016/j.engstruct.2023.117124.
5. Tomic, I., Penna, A., DeJong, M., Butenweg, C., Correia, A.A., Candeias, P.X., Senaldi, I., **Guerrini, G.**, Malomo, D., and Beyer, K. (2023). “Shake Table Testing of a Half-Scale Stone Masonry Building Aggregate”, *Bulletin of Earthquake Engineering*, November 2023. DOI: 10.1007/s10518-023-01810-y.
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8. **Guerrini, G.**, Salvatori, C., Senaldi, I., and Penna, A. (2021). “Experimental and Numerical Assessment of Seismic Retrofit Solutions for Stone Masonry Buildings”, *Geosciences*, 11(6), 230. DOI: 10.3390/geosciences11060230.
9. **Guerrini, G.**, Damiani, N., Miglietta, M., and Graziotti, F. (2021). “Cyclic Response of Masonry Piers Retrofitted with Timber Frames and Boards”, *Proceedings of the Institution of Civil Engineers: Structures and Buildings*, 174(5), 372-388. DOI: 10.1680/jstbu.19.00134.
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11. **Guerrini, G.**, Kallioras, S., Bracchi, S., Graziotti, F., and Penna, A. (2021). “Displacement Demand for Nonlinear Static Analyses of Masonry Structures: Critical Review and Improved Formulations”, *Buildings*, 11(3), 118. DOI: 10.3390/buildings11030118.
12. Senaldi, I., **Guerrini, G.**, Comini, P., Graziotti, F., Penna, A., Beyer, K., and Magenes, G. (2020). “Experimental Seismic Performance of a Half-Scale Stone Masonry Building Aggregate”, *Bulletin of Earthquake Engineering*, 18(2), 609-643. DOI: 10.1007/s10518-019-00631-2.
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16. Zhang, Z., Fleischman, R., Restrepo, J.I., **Guerrini G.**, Nema, A., Zhang, D., Shakya, U., Tsampras, G., and Sause, R. (2018). “Shake Table Test Performance of an Inertial Force-Limiting Floor

- Anchorage System”, *Earthquake Engineering and Structural Dynamics*, 47(10), 1987-2011. DOI: 10.1002/eqe.3047.
17. Kallioras, S., **Guerrini, G.**, Tomassetti, U., Peloso, S., and Graziotti, F. (2018). “Dataset from the Dynamic Shake-Table Test of a Full-Scale Unreinforced Clay Masonry Building with Flexible Timber Diaphragms”, *Data in Brief*, 18, 629-640. DOI: 10.1016/j.dib.2018.03.047.
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 20. **Guerrini, G.**, Restrepo, J.I., Massari, M., and Vervelidis, A. (2015). “Seismic Behavior of Posttensioned Self-Centering Precast Concrete Dual-Shell Steel Columns”, *ASCE Journal of Structural Engineering*, 141(4), 04014115. DOI: 10.1061/(ASCE)ST.1943-541X.0001054.
 21. Antonellis, G., Gavras, A.G., Panagiotou, M., Kutter, B.L., **Guerrini, G.**, Sander, A.C., and Fox, P.J. (2015). “Shake Table Test of Large-Scale Bridge Columns Supported on Rocking Shallow Foundations”, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 141(5), 04015009. DOI: 10.1061/(ASCE)GT.1943-5606.0001284.

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23. Fragomeli, A., Galasco, A., Graziotti, F., **Guerrini, G.**, Kallioras, S., Magenes, G., Malomo, D., Mandirola, M., Manzini, C.F., Marchesi, B., Milanesi, R.R., Morandi, P., Penna, A., Rossi, A., Rosti, A., Rota, M., Senaldi, I.E., Tomassetti, U., Cattari, S., da Porto, F., and Sorrentino, L. (2017). “Performance of Masonry Buildings in the Seismic Sequence of Central Italy 2016 - Part 1: Overview”, *Progettazione Sismica*, 8(2), 49-77. DOI: 10.7414/PS.8.2.49-77.
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Conference Publications

25. Salvatori, C., **Guerrini, G.**, Galasco, A., and Penna, A. (2024). “A Macroelement Formulation for Modeling Strengthened and Reinforced Masonry Elements”, *Proc. 18th International Brick and Block Masonry Conference*, Birmingham, UK, July 21-24, 2024.
26. Salvatori, C., **Guerrini, G.**, Graziotti, F., and Penna, A. (2024). “Effect of the Interaction among Adjacent Structural Units in Aggregates Subjected to Seismic Actions”, *Proc. 18th World Conference on Earthquake Engineering*, Milan, Italy, June 30-July 5, 2024.

27. Ponte, M., **Guerrini, G.**, Penna, A., and Bento, R. (2024). “Modelling of Interactions between Adjacent Historical Buildings Built in Different Phases”, *Proc. 18th World Conference on Earthquake Engineering*, Milan, Italy, June 30-July 5, 2024.
28. Milanese, R.R., **Guerrini, G.**, Bolognini, D., Grottoli, L., Dacarro, F., and Morandi, P. (2024). “Shaking Table Tests on Two Full-Scale Masonry Infilled RC Frames Repaired and Strengthened”, *Proc. 18th World Conference on Earthquake Engineering*, Milan, Italy, June 30-July 5, 2024.
29. Damiani, N., **Guerrini, G.**, and Graziotti, F. (2024). “Retrofit of URM Buildings Using Timber Frames and OSB Panels: Experimental and Analytical Studies”, *Proc. 18th World Conference on Earthquake Engineering*, Milan, Italy, June 30-July 5, 2024.
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31. Tomić, I., Penna, A., DeJong, M., Butenweg, C., Correia, A.A., Candeias, P.X., Senaldi, I., **Guerrini, G.**, Malomo, D., and Beyer, K. (2024). “Seismic Testing of Adjacent Interacting Masonry Structures - Analysis of a Blind Prediction”, *Proc. 13th International Conference on Structural Analysis of Historical Constructions*, Kyoto, Japan, September 12-15, 2023. In: *Structural Analysis of Historical Constructions. SAHC 2023*, Y. Endo and T. Hanazato, Eds., RILEM Bookseries 47. Springer, Cham, Switzerland, 2024, pp. 1053-1064. DOI: 10.1007/978-3-031-39603-8_84.
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