

Andrea Belleri
Curriculum vitae

Department of Engineering and Applied Sciences
University of Bergamo
Viale Marconi 5, 24044 Dalmine, Italy

phone: 035 2052 007
email: andrea.belleri (at) unibg.it
webpage: <https://sites.google.com/a/unibg.it/abelleri/>

CURRENT POSITION

University of Bergamo

Associate professor (Scientific sector ICAR09 – Structures) 11/2019 – present

PREVIOUS RESEARCH POSITIONS

University of Bergamo - Italy

Assistant professor (RTD-B) (Scientific sector ICAR09 – Structures) 11/2016 – 11/2019

Assistant professor (RTD-A) (Scientific sector ICAR09 – Structures) 09/2014 – 11/2016

Research grant holder - Research program: "Definition of seismic resistant structural systems for precast structures and development of design and vulnerability assessment methods"
08/2010 – 07/2013

Research grant holder - Research program: "Development of displacement based approaches for the seismic design of precast structures".
08/2008 – 07/2009

Research grant holder - Research program: "Development of displacement based approaches for the seismic design of precast structures".
07/2006 – 07/2008

EUCENTRE (European Centre for Training and Research in Earthquake Engineering), Pavia, Italy

Research collaborator - Research program: "Definition and development of advanced seismic protection strategies for precast concrete multi-story structures".
09/2009 – 07/2010

EDUCATION

PhD in Structural Engineering, "Modeling, Preservation and Control of Material and Structures",
University of Trento, Italy 03/2009

Laurea in Civil Engineering, summa cum laude, University of Brescia, 10/2004

VISITING POSITIONS

Tufts University, Boston

Visiting Assistant Professor, School of Engineering 07/2017

Tufts University, Boston

Visiting Fellow, School of Engineering 05/2012 – 07/2012

University of California, San Diego (USA)

Visiting Ph.D. student, School of Engineering

08/2006 – 06/2008

Heriott-Watt University, Edinburgh (UK)

Visiting student, School of Engineering

09/2001 – 06/2002

TEACHING EXPERIENCE**Undergraduate Course**

Structural design principles

a.y. 2019-2020

Reinforced Concrete Structures

a.y. 2019-2020

Steel Constructions

a.y. 2014/2015 – present

Structures A (6CFU)

a.y. 2009/2010 – 2012/2013

Graduate Course

Fundamentals of Displacement Based Design

a.y. 2016/2017

a.y. 2017/2018

Advanced Precast Structural Systems

a.y. 2018/2019

Advisor of 24 undergraduate dissertations

a.y. 2009/2010 – present

OTHER WORK/RESEARCH EXPERIENCES

Chartered engineer

2005 - present

Member and Co-Founder of Di.Mo.Re. srl, academic spin-off of University of Bergamo, active in diagnostic, monitoring and retrofit of buildings and structures.

2012 - present

Collaboration in several experimental activities at the Structure/Material Test Laboratory of the University of Bergamo in the fields of research, assessment and mechanical characterization of structural systems and their components. Specific contributions: experiment design, testing, data post-processing and interpretation.

2007 - present

About 61 hours of lectures for professional engineers on the seismic design, finite element modeling, vulnerability assessment and retrofit of one-story and multi-story precast concrete structures

HONOURS AND AWARDS**Winner** of the Research and University category of the PEER Blind Prediction Contest 2017

Pacific Earthquake Engineering Research Center, Berkeley, USA

2018

Key scientific article for the article "Displacement based design for precast concrete frames with not-emulative connections". Advances in Engineering

2017

Silver International Green Apple Award for The Built Environment & Architectural Heritage 2016

The Green Organization, UK

2016

Inventor of the Italian patent 0001414593: "Increased dissipation/stiffness system with displacement amplification". International class E04H. Application number GE2012A000108, released on 26/03/2015**Co-author of 2 invited papers** in the international workshop "SAFESUST: A roadmap for the improvement of earthquake resistance and eco-efficiency of existing buildings and cities", at Joint Research Centre (Ispra, Italy)

11/2015

Co-author of 2 invited papers in the international workshop "SURECON - A roadmap for a Sustainable integrated RETrofit of CONcrete buildings under accidental loads", at Joint Research Centre (Ispra, Italy)

10/2018

Co-author of 1 keynote paper in the international conference "CINPAR 2018 Conference, XIV International Conference on Building Pathology and Constructions Repair", Florence, Italy

06/2018

Member of the **scientific committee**: "3rd FRC International Workshop (2nd ACI– fib Joint Workshop) Fibre Reinforced Concrete: from Design to Structural Applications". Desenzano,

28-30/06/2018

Member of the **organizing committee**: Workshop ACI Italy Chapter "Connections in Precast Structures". Bergamo,

05/10/2012

Invited keynote speaker: "Research, Design and Construction of Precast Floor Systems in Italy". "1st International Symposium of Precast Slab Systems in seismic zones and their connections". Veracruz, Mexico,

05/2011

Martin P. Korn Award 2009

Precast/Prestress Concrete Institute (PCI)

2009

George D. Nasser Award 2009

Precast/Prestress Concrete Institute (PCI)

2009

RESEARCH FIELDS

The research interests regard structural engineering and in particular performance seismic design and assessment methodologies based on structural displacements control (Displacement Based Design). Other topics are the theoretical and experimental research on civil construction typologies and technological components in precast industry, both for structural and non-structural elements, focusing on the study and development of dissipating and re-centering devices/structural elements and on the relative design procedures definition. It is also of interest the seismic vulnerability evaluation of existing buildings, the development of retrofit solutions and the dynamic identification and structural health monitoring of structural systems. Latest interests regard the rehabilitation of existing RC buildings under multi-criteria approaches (life cycle thinking).

PUBLICATIONS*International journals (last papers)*

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| IJ 25 | 2020 | M Bosio, Andrea Belleri , P Riva, A Marini. 2020. "Displacement-Based Simplified Seismic Loss Assessment of Italian Precast Buildings". Journal of Earthquake Engineering, Vol. , pp. . DOI: 10.1080/13632469.2020.1724215 |
| IJ 24 | 2020 | V Mpampatsikos, ME Bressanelli, Andrea Belleri , R Nascimbene. 2020. "A non-dimensional parametric approach for the design of PT tendons and mild steel dissipaters in precast rocking walls". Engineering Structures, Vol. 212 pp. 1-17 . DOI: 10.1016/j.engstruct.2020.110513 |
| IJ 23 | 2020 | R Di Bari, Andrea Belleri , A Marini, R Horn, J Gantner. 2020. "Probabilistic Life-Cycle Assessment of Service Life Extension on Renovated Buildings under Seismic Hazard". Buildings, Vol. 10, n. 48. DOI: 10.3390/buildings10030048 |
| IJ 22 | 2018 | L Milanesi, M Pilotti, Andrea Belleri , A Marini, S Fuchs. 2018. "Vulnerability to flash floods: a simplified structural model for masonry buildings". Water Resources Research, Vol. 54(10), pp. 7177-7197. DOI: 10.1029/2018WR022577 |
| IJ 21 | 2018 | Mauro Torquati, Andrea Belleri , Paolo Riva. 2018. "Displacement based seismic assessment for precast concrete frames with not-emulative connections". Journal of Earthquake Engineering, Vol. , pp. . DOI: 10.1080/13632469.2018.1475311 |
| IJ 20 | 2018 | A Marini, E Giuriani, Andrea Belleri , S Cominelli. 2018. "Dowel connections securing roof-diaphragms to perimeter walls in historic masonry buildings and in-field testing for capacity assessment". Bulletin of Earthquake Engineering, Vol. 16, pp. 4001-4025. DOI: 10.1007/s10518-018-0333-9 |
| IJ 19 | 2017 | Di Ludovico, M., Digrisolo, A., Graziotti, F., Moroni, Claudio, Belleri Andrea , Caprili, S., Carocci, C., Dall'Asta, A., De Martino, G., De Santis, S., Ferracuti, B., Ferretti, D., Fiorentino, G., Mannella, A., Marini, Alessandra, Mazzotti, C., Sandoli, A., Santoro, A., Silvestri, S., Sorrentino, L., Magenes, G., Masi, A., Prota, A., Dolce, M., Manfredi, G. (2017). The contribution of ReLUIS to the usability assessment of school buildings following the 2016 central Italy earthquake. BOLLETTINO DI GEOFISICA TEORICA ED APPLICATA, Vol. 58, n. 4, pp. 353-376, ISSN: 2239-5695, DOI: 10.4430/bgta0192 |
| IJ 18 | 2017 | Andrea Belleri , S Labò, A Marini, P Riva. 2017. "The influence of overhead cranes in the seismic performance of industrial buildings". Frontiers in Built Environment, section Earthquake Engineering, Vol. 3, Art. 64. DOI: 10.3389/fbuil.2017.00064 |

National journals (last 5 papers)

- NJ 11 2019 Simone Labò, Chiara Passoni, **Andrea Belleri**, Alessandra Marini, Paolo Riva. 2019. Eso scheletri tipo diagrid per la riqualificazione degli edifici esistenti in ottica ciclo vita. Costruzioni Metalliche 5/2019. ISSN 0010-9673.
- NJ 10 2015 Fabrizio Cornali, **Andrea Belleri**, Alessandra Marini, Paolo Riva. 2015. "Interventi di miglioramento sismico in edifici prefabbricati esistenti". INGENIO, Rivista on line, ISSN 2307-8928.
- NJ 09 2014 F. Feroldi, A. Marini, **Andrea Belleri**, C. Passoni, P. Riva, M. Preti, E. Giuriani, G. Plizzari. 2014. "Miglioramento e adeguamento sismico di edifici contemporanei mediante approccio integrato energetico, architettonico e strutturale con soluzioni a doppio involucro a minimo impatto ambientale". Progettazione Sismica, Vol.05, No.2, pp 131-139 - ISSN 1973-7432. DOI 10.7414/PS.5.2.31-47
- NJ 08 2013 **Andrea Belleri**, Mauro Torquati, Paolo Riva. 2013. "Miglioramento e adeguamento sismico di edifici industriali: valutazione degli interventi e applicazione a un caso studio". INGENIO, Rivista on line, ISSN 2307-8928.
- NJ 07 2013 **Andrea Belleri**, Davide Bellotti, Roberto Nascimbene, Paolo Riva. 2013. "Vulnerabilità riscontrate negli edifici industriali colpiti dal sisma del maggio 2012". INGENIO, Rivista on line, ISSN 2307-8928.

International conferences (last 5 papers)

- IC 45 2019 Casprini, Elena; Passoni, Chiara; **Belleri, Andrea**; Marini, Alessandra; Bartoli, Gianni; Riva, Paolo. 2019. "Demolition-and-Reconstruction or Renovation? Towards a Protocol for the Assessment of the Residual Life of Existing RC Buildings". CESB19: Central Europe towards Sustainable Building 2019, July 2—4, 2019, Prague. Selected for oral presentation. 2019 IOP Conf. Ser.: Earth Environ. Sci. 290 012010 <https://doi.org/10.1088/1755-1315/290/1/012010>
- IC 44 2019 Passoni, Chiara; Marini, Alessandra; **Belleri, Andrea**; Menna, Costantino. 2019. "A Multi-Step Design Framework Based on Life Cycle Thinking for the Holistic Renovation of the Existing Buildings Stock". CESB19: Central Europe towards Sustainable Building 2019, July 2—4, 2019, Prague. Selected for oral presentation. 2019 IOP Conf. Ser.: Earth Environ. Sci. 290 012134 <https://doi.org/10.1088/1755-1315/290/1/012134>
- IC 43 2019 Zanni, Jacopo; Labò, Simone; Passoni, Chiara; Casprini, Elena; Marini, Alessandra; **Belleri, Andrea**; Menna, Costantino. 2019. "Incremental Integrated Holistic Rehabilitation: A New Concept to Boost a Deep Renovation of the Existing Building Stock". CESB19: Central Europe towards Sustainable Building 2019, July 2—4, 2019, Prague. Selected for oral presentation. 2019 IOP Conf. Ser.: Earth Environ. Sci. 290 012140 <https://doi.org/10.1088/1755-1315/290/1/012140>
- IC 42 2019 E. Casprini, **Andrea Belleri**, C. Passoni, S. Labò and A. Marini. 2019. "Computational issues of hinged walls used as retrofitting of existing RC frames". COMPDYN 2019, Crete, Greece, 24—26 June 2019. Selected for oral presentation. ISBN 978-618-82844-5-6
- IC 41 2019 S. Labò, C. Passoni, A. Marini, **Andrea Belleri**, P. Riva. 2019. "Design spectra for the preliminary design of elastic seismic retrofit solution from the outside". COMPDYN 2019, Crete, Greece, 24—26 June 2019. Selected for oral presentation. ISBN 978-618-82844-5-6

National conferences (last 5 papers)

- NC 28 2019 Matteo Bassetti, **Andrea Belleri**, Alessandra Marini. 2019. Valutazione dell'instabilità dinamica di aste in acciaio. XXVII Congresso del Collegio dei Tecnici dell'Acciaio, Bologna, 3—5 Ottobre. Selected for oral presentation. ISBN 978-88-944866-0-5

- NC 27 2019 Francesca Feroldi, **Andrea Belleri**, Alessandra Marini, Chiara Passoni, Ezio Giuriani. 2019. Il ruolo critico dei diaframmi di piano negli interventi di adeguamento sismico condotti dall'esterno. XVIII Convegno ANIDIS 15-19/09/2019 Ascoli Piceno. Selected for oral presentation; presented by **Andrea Belleri**. ISBN: 978-88-3339-256-1. DOI 10.1400/271066
- NC 26 2019 Marco Bosio, **Andrea Belleri**, Paolo Riva, Giorgio Barzon, Daniele Comotti. 2019. Valutazione dello stato di salute di edifici a seguito di terremoti: considerazioni preliminari su indici di danno e accelerometri MEMS. XVIII Convegno ANIDIS 15-19/09/2019 Ascoli Piceno. Selected for oral presentation. ISBN: 978-88-3339-256-1. DOI 10.1400/271183
- NC 25 2019 Simone Labò, Jacopo Zanni, Chiara Passoni, Alessandra Marini, **Andrea Belleri**. 2019. Riabilitazione incrementale nella riqualificazione integrata di edifici esistenti: approccio metodologico e applicazione a un caso studio. XVIII Convegno ANIDIS 15-19/09/2019 Ascoli Piceno. Selected for oral presentation; presented by **Andrea Belleri**. ISBN: 978-88-3339-256-1. DOI 10.1400/271077
- NC 24 2019 Simone Castelli, **Andrea Belleri**, Alessandra Marini, Flavio Mosele. 2019. Valutazione semplificata dell'interazione piano – fuori piano di tamponamenti in laterizio in edifici di nuova costruzione. XVIII Convegno ANIDIS 15-19/09/2019 Ascoli Piceno. Selected for oral presentation. ISBN: 978-88-3339-256-1. DOI 10.1400/271126

INTERNATIONAL JOURNALS

Editorial Board

Associate editor of Frontiers in the Built Environment, Earthquake Engineering;

Reviewing

Structural Engineering and Mechanics, An international Journal; Engineering Structures; ACI Structural Journal; Journal of Sound and Vibrations; Materials and Structures; Bulletin of Earthquake Engineering; Journal of Innovations in Corrosion and Materials Science; Journal of Earthquake Engineering; Earthquake and Structures; Buildings; Recent Patents on Engineering; Applied Ocean Research; Shock and Vibration; The Structural Design of Tall and Special Buildings.

LANGUAGES

Italian (mother tongue), English (fluent)

Bergamo, 3/29/2020

Andrea Belleri