SIMONA BIANCHI

POST-DOCTORAL RESEARCHER

CONTACT ME AT


PERSONAL DATA

PERSONAL SKILLS

Communication
Teamwork
Organized
Time management
Adaptability
Problem solving

PROFESSIONAL SKILLS

Software proficiency
Electronic spreadsheet
Laboratory testing
Digital skills - visual programming
CAD skills
Technical writing

PERSONALITY

Organized
Optimistic
Patient
Cooperative
Efficient
Flexible

LANGUAGES

Italian
English

EXECUTIVE SUMMARY

I am a Post-doctoral researcher working on multi-performance design of non-structural components, with specific knowledge on the seismic design/assessment of innovative technologies. I am also experienced in experimental testing.

EMPLOYMENT HISTORY

November 2020 | current
Post-doctoral Fellow
Sapienza University of Rome, Rome, Italy

- Investigations on multi-performance design of building systems through digital software
- Parametric and probabilistic analysis in Python/Opensees and Ruaumoko of integrated structural/non-structural low-damage building systems

March 2019 | August 2019
Intern - Structural Engineer
Laboratorio Nacional de Engenharia Civil, Lisbon - LNEC, Portugal

- Preparation of the experimental setup (instrumentation, input signals) of 3D shaking table tests on a 1:2 scaled timber-concrete structure with innovative glass/concrete facades and masonry/gypsum partitions
- Coordination of the specimen construction and component assembly
- Numerical predictions of the low-damage Test Building behaviour

February 2018 | December 2018
Intern - Structural Engineer
ARUP, Amsterdam, The Netherlands

- Executive design of the low-damage timber-concrete building system and interaction with the industry contractors/suppliers for the supply of the specimen components (SERA Project)
- Development of initial energy simulations in Grasshopper/EnergyPlus for case-study buildings analyses in the PhD thesis
- Collaboration within the P500 Project (seismic risk of Groningen area)

April 2016 | September 2016
Research Assistance
Sapienza University of Rome, Rome, Italy

- Numerical study of the dynamic behaviour of dissipative anchors
- Preparation of the shake-table tests of post-installed anchors: design, test-setup, implementation of seismic tests in the university laboratory

September 2015 | March 2016
Civil Engineer
INNOVA AE, Rome, Italy

- Numerical modelling and seismic assessment of existing reinforced concrete and masonry buildings
- Executive seismic design of steel and reinforced concrete buildings
- On-site inspections for existing buildings (hospitals)

EDUCATIONAL HISTORY

November 2016 | October 2019
PhD in Structural Engineering
Sapienza University of Rome, Rome, Italy

Thesis: *Multi-performance evaluation of traditional and low-damage non-structural elements*. Supervisor: Prof. Pampanin
- Seismic vulnerability assessment and fragility study of non-structural (traditional & damage-control) components
- Numerical modelling and experimental testing of low-damage systems: seismic tests and post- processing of data for fischer Project; full implementation and management of SERA Project
- Multi-performance study: integrated seismic & energy loss analyses for traditional vs low-damage buildings

January 2016
Professional Qualification in Civil and Environmental Eng.

September 2012 | July 2015
Master Student in Civil Engineering
Sapienza University of Rome, Rome, Italy (Final grade: 110/110 cum laude)

Thesis: *Simplified procedures to support decisions about retrofit strategies for Reinforced Concrete existing buildings*. Major Supervisor: Prof. Gigliotti
- Structural design and seismic design/assessment of buildings (reinforced concrete and masonry)
- Design/assessment of foundation systems and retaining walls
- Road infrastructures and hydraulic constructions

September 2014 | January 2015
Exchange Student
University of Canterbury, Christchurch, New Zealand

- Seismic assessment and retrofitting of reinforced concrete buildings by analytical and numerical procedures
- Collaboration within the SAFER research group (national project leaded by Prof. Pampanin)

September 2009 | October 2012
Bachelor Student in Civil Engineering
Sapienza University of Rome, Rome, Italy (Final grade: 110/110 cum laude)

PRIZES, AWARDS, GRANTS, SCHOLARSHIPS

2019 | 2020. One-year Post-Doctoral **Fellowship** awarded by the Department of Structural Engineering, Sapienza University (~20.000 €)
2016 | 2019. Three-year PhD **Fellowship** funded by the Ministry of Instruction, University and Research -MIUR (~65.000 €)
2016. **Scholarship** funded by fischer fischerwerke GmbH & Co. KG (~6.000 €)
2016. **Award** from Fondazione Roma Sapienza for "Eminent Graduate - Academic Session 2014-2015"
2014 | 2015. **Scholarship** funded by Erasmus, Sapienza University for "Thesis Abroad" (~3.000 €)
2012. **Prize** from "Autostrade per l'italia Spa" for academic merit - best annual score) (6000 €)

RESEARCH PROJECTS

2020 | 2021. PELL Project, "WP: Edifici Risposta Sismica", funded within the Public Energy Living Lab (PELL) Project between ENEA and AgID (**P**)
2019 | present. UEFA ELENA Project, "Analisi sismo-energetiche di edifici pubblici nella provincia di Foggia e strategie di interventi integrati di miglioramento", funded within the "European Local Energy Assistance. Progetto UEFA (European Union ELENA Foggia Facility Assistance) (**P**)
2019 | present. Project funded by Reluis (Consortium of Network of the University Laboratory of Seismic Engineering), "WP2: Metodologia analitica semplificata ed analisi costi- prestazioni di interventi di riparazione e retrofit sismico" (**P**)
2018. Project (Avvio alla Ricerca) funded by Sapienza University of Rome, "Analisi multi-prestazionale di soluzioni tradizionali ed innovative (a basso-danneggiamento) per elementi non-strutturali" (**PI**)
2017 | 2020. Project funded by Sapienza University of Rome, "Vulnerability Assessment and Retrofit Strategies to Mitigate the Seismic Risk at Territorial Scale - Towards the development of a practical technical and socio-economic framework to support the decision making" (**P**)
2017 | 2018. SERA Project, "(Towards the) Ultimate Earthquake proof Building System: development and testing of integrated low-damage technologies for structural and non- structural elements", funded by the European H2020 SERA (**P**)

2016 | 2019. Project funded by Sapienza University of Rome, "Seismic safety and sustainability: Innovative technologies and integrated design for multi-storey open-space timber buildings" (**P**)
2016 | 2017. Industry-funded Project (Fischer) on “EQ-Rod 2.0: The next generation of Earthquake-Resistant Fastener” (**P**)
2011 | 2015. National New-Zealand Project on “Significant Advances for Earthquake Resistance Concrete Technology - SAFER” (**P**)

TEACHING ACTIVITIES

2017 | current Advanced structural design - Seismic assessment and retrofit strategies for reinforced concrete buildings – Sapienza University of Rome, Italy: *Assistance in project development; Workshops on numerical modelling (non-linear static analysis) and on loss assessment methodologies*
2020 | current Seismic design of (precast) concrete and timber structures - Sapienza University of Rome, Italy: *Assistance in project development; Workshops on numerical modelling (time-history analysis) and on fragility curves*

Supervisory/Mentorship Experience

This section provides some of the research works I have supervised (as Assistant) of Master Students in Civil Engineering at Sapienza University, Rome, Italy.

2016/2017. Comparison of alternative retrofit solutions for reinforced concrete buildings damaged during L’Aquila Earthquakes
2016/2017. Seismic vulnerability of RC Italian school buildings: Comparative analysis of evaluation methodologies and retrofit solutions
2017/2018. Seismic cost/performance evaluation of timber-reinforced concrete low-damage buildings
2017/2018. Life Cycle Assessment for Sustainable Design: Classic and Low-Damage Precast Structures Subjected to Earthquakes
2017/2018. Innovative technologies for Structural Engineering: Design, Feasibility and Production of low-damage systems
2019/2020. Seismic performance of Point Fixed Glass Façade systems: comparison between traditional and low-damage solutions
2019/2020. Visualization and Perception of seismic effects in Virtual Reality and Augmented Reality comparing Traditional Reinforced Concrete buildings with Low-damage buildings

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2020-current. SPONSE, International Association for the seismic performance of non-structural elements

2019-current. *fib* Italia Young Members Group (YMG) – Board Member 2021-2022

CONFERENCES, WORKSHOPS (as Speaker)

09/09/2019. Seismic vulnerability of non-structural components: from traditional solutions to innovative low-damage systems. SECED 2019 Conference, London, England
24/06/2019. A SLaMA-based analytical procedure for the cost/performance-based evaluation of buildings. 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN), Crete, Greece
22/05/2019. Cost/performance evaluation of traditional and low-damage structural & non-structural building configurations. Fourth International Workshop on Seismic Performance of Non-Structural Elements (SPONSE), Pavia, Italy
18/06/2018. A cost-performance based evaluation of low-damage building systems. 16th European Conference on Earthquake Engineering, Thessaloniki, Greece

PUBLICATIONS

Peer reviewed conference proceedings

1. **Bianchi S.**, Ciurlanti J., Petrone D., Pampanin S., Filiatrault A. (2020). Seismic demand and performance evaluation of nonstructural elements in a low-damage building system. 17th World Conference on Earthquake Engineering, Sendai, Japan
2. Ciurlanti J., **Bianchi S.**, Pampanin S. (2020). Shake-table tests of a timber-concrete low-damage building: analytical/numerical vs. experimental results. 17th World Conference on Earthquake Engineering, Sendai, Japan
3. Pampanin S., Ciurlanti J., **Bianchi S.**, Perrone D., Palmieri M., Grant D., Granello G., Palermo A., Filiatrault A., Stojadinovic B., Correia A. A. (2020). Overview of SERA Project: 3D shaking table tests on an integrated low-damage building system. 17th World Conference on Earthquake Engineering, Sendai, Japan
4. Ciurlanti J., **Bianchi S.**, Pampanin S. (2019). Feasibility Study of Low-Damage Technology for High-Rise Precast Concrete Buildings. SECED 2019 Conference, London, England
5. **Bianchi S.**, Ciurlanti J., Pampanin S. (2019). Seismic vulnerability of non-structural components: from traditional solutions to innovative low-damage systems. SECED 2019 Conference, London, England
6. **Bianchi S.**, Ciurlanti J., Pampanin S. (2019). A SLaMA-based analytical procedure for the cost/performance-based evaluation of buildings. 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Crete, Greece

7. Ciurlanti J., **Bianchi S.**, Pampanin S. (2019). Shake table tests on post-installed traditional and dissipative fasteners in uncracked and cracked concrete. 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Crete, Greece
8. Pampanin S., Ciurlanti J., **Bianchi S.**, Palmieri M., Grant D., Granello G., Palermo A., Perrone D., Filiatrault A., Stojadinovic B. (2019). Overview of SERA Project: 3D shaking table tests on an integrated low-damage building system. Fourth International Workshop on Seismic Performance of Non-Structural Elements, Pavia, Italy
9. **Bianchi S.**, Ciurlanti J., Pampanin S. (2019). Cost/performance evaluation of traditional and low-damage structural & nonstructural building configurations. Fourth International Workshop on Seismic Performance of Non-Structural Elements, Pavia, Italy
10. **Bianchi S.**, Ciurlanti J., Pampanin S. (2018). A cost-performance based evaluation of low-damage building systems. 16th European Conference on Earthquake Engineering, Thessaloniki, Greece

Peer reviewed journals

1. Pampanin S., Ciurlanti J., **Bianchi S.**, Perrone D., Granello G., Palmieri M., Grant D., Palermo A., Filiatrault A., Stojadinovic B., Correia A. A. 3D shake table testing of an integrated low-damage building system - Part 1: Specimen Details and preliminary results. ASCE, Journal of Structural Engineering (To be sent for Peer-review)
2. **Bianchi S.**, Ciurlanti J., Perrone D., Filiatrault A., Pampanin S., Campos Costa A., Candeias P.X., Correia A.A. Shake-table tests of innovative drift-sensitive non-structural elements in a low-damage structural system. Earthquake Engineering and Structural Dynamics (tentatively accepted)
3. Ciurlanti J., **Bianchi S.**, Quintana-Gallo P., Pürgstaller A., Bergmeister K., Pampanin S. Shake-table tests of innovative and traditional concrete anchors. ACI Journal (in Peer Review)
4. **Bianchi S.**, Pampanin S. (2021) State-of-the-art of fragility functions for non-structural components: a decision-making tool towards a damage-control design approach. Journal of Structural Engineering (Tentatively accepted)
5. **Bianchi S.**, Ciurlanti J., Pampanin S. (2020). Comparison of traditional vs. low-damage structural & non-structural building systems through a cost/performance-based evaluation. Earthquake Spectra, 1-20. DOI: 10.1177/8755293020952445

REFEREES

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