

ENGLISH CURRICULUM VITAE

Giada Gasparini was born in Bologna on 16/12/1974 and lives in Via Ghiselli n. 6, 40134 Bologna (BO).

2000: Degree in Civil Engineering ("Structures" division), University of Bologna. Dissertation title: "Analisi dei fenomeni torsionali indotti dall'azione sismica su strutture reali isolate alla base". Thesis supervisors: Prof. Claudio Ceccoli, Dott. Tomaso Trombetti.

2001: Professional qualification (Engineers Register of the Province of Bologna with n. 6226/A)

2002-2005: Ph.D. in "Structural Mechanics" (XVII° course), Department DISTART, University of Bologna. Dissertation title: "ALPHA Method, a simplified method for torsional problems analysis induced by earthquake ground motions on eccentric systems: theory, numerical and experimental validation". Thesis supervisors: Prof. Claudio Ceccoli, Dr. Tomaso Trombetti.

2003: Organiser (together with Prof. Claudio Ceccoli, Prof. Tomaso Trombetti and Dr. Stefano Silvestri, University of Bologna) of the II level Master-Course "L'ingegneria strutturale nel terzo millennio", approved by University of Bologna and supported by the European Social Fund (through the Consorzio Symposium).

2005-2008: Recipient of the Research Grant entitled "Torsional phenomena induced by earthquake ground motions on systems characterized by non coincidence between centre of mass and centre of stiffness", Department DISTART, University of Bologna. Supervisor: Prof. Claudio Ceccoli.

2005-2007: Recipient of three grant for tutorship of the course "Laboratorio di Costruzione dell'Architettura IIA", Faculty of Architecture, University of Bologna.

2006: Organiser (together with Prof. Claudio Ceccoli, Prof. Tomaso Trombetti and Dr. Stefano Silvestri, University of Bologna, and with Associazione ISCOM Emilia Romagna) of the High Education Course "Nuove normative per la progettazione strutturale e relativi criteri di applicazione", available in the catalogue of the Regione Emilia Romagna.

2008: Researcher (Assistant Professor) since 02/11/2008, Department DISTART, Tecnica delle Costruzioni, University of Bologna.

2008: Co-Chairman in three sessions of the 14th World Conference on Earthquake Engineering (14WCEE), Beijing, China, October 12-17, 2008.

For years 2008-2009, 2009-2010 holds the chair of "Strutture nell'Architettura – Tecnica delle Costruzioni", Faculty of Architecture, University of Bologna.

Since year 2009-2010 holds the chair of "Progetto delle Strutture A", component of the integrated course "Laboratorio di Costruzioni nell'Architettura IIA", Faculty of Architecture, University of Bologna.

In 2010 is a member of the Proposing Team (Additional User) of the research "Assessment of the seismic behaviour of flat bottom silos containing grain-like materials (ASESGRAM)", European Project SERIES Transnational Access Use of shaking tables. The research aims at studying the seismic behavior of Silos through shaking table test to be developed at the University of Bristol (UK).

In 2010 is a member of the Proposing Team (Additional User) of the research "Seismic behavior of structural systems composed of cast in situ concrete walls (SESYCOWA)", European Project SERIES Transnational Access Use of shaking tables. The research aims at studying the seismic behavior of building structures made of

lightly reinforced concrete walls. The experimental shaking table tests have been performed at the EUCENTRE in Pavia.

Since 2011: Member of the Interdepartmental Centre for the Industrial Research (CIRI) - Buildings and Constructions, (Director: Prof. Marco Savoia, University of Bologna).

In January 2012 plans and proposes the project "Dentro la Pietra: viaggio inedito nel cuore della Garisenda", which is selected and approved by the University of Bologna (Research Area ARIC) and financed by Fondazione del Monte.

Dal 2012 is member of working group of Unit "Structures" in the research project ITALICI (development of innovative bricks capable of providing resilience for concrete frames building structure in which they are to be used as infill) of INDUSTRIA 2015, financed by the Italian Ministry of Research and Economic Development.

Since 2012 she is reviewer for international "Journal of Testing and Evaluation", ASTM International.

In 2012 plans together with Prof. Tomaso Trombetti the Interdepartmental Center "Osservatorio Claudio Ceccoli" on faults and defects on the building constructions, DICAM-Unibo.

2012: Confirmation in the role of Researcher at the Faculty of Engineering, University of Bologna

In 2013 is nominated member of the Evaluation Board (Agricultural and Agro-Industrial Field BO-FE) to support the Officer in Charge of distributing the contributions to the agricultural and agro-industrial activities in Bologna and Ferrara, after the seismic events of 20 and 29 may 2012. (Regional Decree n. 5 del 30/01/2013 of the Head of Emilia Romagna Region).

In 2017 she obtains "Abilitazione Scientifica Nazionale ASN" (qualification for teaching in the role of Associate Professor) in Construction Design (italian announcement D.D. 1532/2016).

SCIENTIFIC ACTIVITY AND MAIN RESEARCH THEMES

Main scientific contributions:

- **Torsional phenomena in building structures characterized by eccentricity in plan between the centre of mass and the centre of stiffness.**
Development of predictive formulas for the estimation of the increment of the displacement demand in such eccentric structures (with respect to the corresponding non-eccentric structures). These formulas make use of simple synthetic parameters based upon the static characteristics of the systems. The effectiveness of the proposed formulation has been verified both numerically and experimentally, these last through shaking table tests (n. 2 papers on international peer-reviewed journals: BEE 2013, JEE 2008).
- **Use of viscous dampers for the mitigation of the seismic action upon structures.**
Analytical identification of the superior dissipative properties of the so-called MPD (Mass Proportional Damping) systems as applied to shear type frame structures. Development of strategies for their implementation in actual building structures. Development of a simple original procedure for the identification of the mechanical characteristics of the manufactured viscous dampers which allow to achieve target levels of performances. Identification of the force reduction factors to be used for highly damped structures, for the intermingling of the inexpensiveness due to the ductility capacities of the structural elements and the efficiency due to the added viscous dampers (n. 2 papers on international peer-reviewed journals: EAS 2011, JEE 2010).
- **Experimental research, analytical developments and analytical/experimental correlation study on the cyclic behaviour of structures composed of lightly reinforced concrete walls.**
Thanks to the results of these studies, it has been possible the carrying out and interpretation of experimental shaking table tests on a 3-storey full-scale building, realized with a structural system composed of squat r.c. sandwich panels at the EUCENTRE lab of Pavia (SERIES project, European FP7 program). The results show an optimal analytical-experimental correlation and a good post-yielding behaviour of such structures (n. 1 paper on international peer-reviewed journal: ES 2013).
- **Seismic response of silos.**
Development of predictive formulas for the estimation of the horizontal actions exerted by grain-like materials upon the walls of flat-bottom squat silos during earthquake. These analytical formulas (based on the assumptions made by Janssen and Koenen for their “static” analyses) are currently the object of specific shaking table tests at the Earthquake Centre of Bristol (European SERIES project). The experimental results obtained so far confirm the effectiveness of the proposed formulation in better capturing the actual seismic actions on the silo walls with respect to the Eurocode 8 prescriptions (n.1 paper on international peer-reviewed journal: BEE 2012).
- **Development of “crescent-shaped braces”** capable of satisfying multiple seismic design objectives (Stiffness-Strength-Ductility Design) (analytical and numerical studies) (n. 2 papers on international peer-reviewed journals: OCBTJ 2009, JCEA 2011).
- **Assessment of the structural safety, seismic analyses and interpretation of the monitoring data of historical monumental buildings**, with specific reference to the Cathedral of Modena, the 2 Towers of Bologna (n. 1 paper on national journal: INARCOS2011), the Filetto Bridge in Santerno river, near Imola, the Palazzo della Civiltà Italiana in Rome (n.1 paper on international peer-reviewed journal: AMR 2010).

Other research areas of interest:

- Probabilistic and deterministic seismic hazard analyses (analytical and numerical studies).

- Methodologies for the probabilistic identification of reference design earthquake inputs for non-linear dynamic analyses in a Performance Based Seismic Design framework (analytical and numerical studies).

RESEARCH PROJECTS / CONTRACTS CURRENTLY UNDER DEVELOPMENT

The undersigned is part as a member of the research working group, of the following research projects / contracts currently under development.

- Research project **ITALICI** financed (UniBo funding 540,000 €) by the Italian Ministry of Research and Economic Development for the program INDUSTRIA 2015, UniBo coordinator: Prof. Tomaso Trombetti. The project aims at the development of innovative bricks capable of providing resilience for concrete frames building structure in which they are to be used as infill (2012-2015).
- European research project SERIES (2010-2011) Transnational Access Use of shaking tables: "Seismic behavior of structural systems composed of cast in situ concrete walls (**SESYCOWA**)", EUCENTRE TREES Lab facility (Pavia, Italy), Lead User: Prof. Salvador Ivorra Chorro, University of Alicante, Local coordinator: Prof. Tomaso Trombetti. The research aims at studying the seismic behavior of building structures made of lightly reinforced concrete walls. The experimental shaking table tests have been performed at the EUCENTRE in Pavia.
- European research project SERIES (2010-2011) Transnational Access Use of shaking tables: "Assessment of the seismic behaviour of flat bottom silos containing grain-like materials (**ASESGRAM**)", EQUALS Laboratories (Bristol, UK), Lead User: Prof. Dora Foti, Politecnico di Bari, Local: Prof. Tomaso Trombetti. The research aims at studying the seismic behavior of Silos through shaking table test to be developed at the University of Bristol (UK).
- **RELUIS2 project, Line 2.3.2:** "Development and analysis of new technologies for the seismic retrofit of building structures" (Executive Project DPC-RELUIS 2010-2013); National coordinator: Prof. G. Serino; Local coordinator: Prof. T. Trombetti.
- **RELUIS2 project, Line 2.1.1:** "Reinforced concrete structures (New)" (Executive Project DPC-RELUIS 2010-2013); National coordinators: Prof. E. Spacone and Prof. G. Monti; Local coordinator: Prof. T. Trombetti.
- **RELUIS2 project, Line RS1,** "Special Project on the Seismic Input" (Executive Project DPC-RELUIS 2010-2013); National coordinators: Prof. G. Manfredi and Prof. I. Iervolino; Local coordinator: Prof. T. Trombetti.
- Research contract between the **Curia of the Cathedral of Modena and the Department DICAM** for the assessment of the static and seismic safety of the Cathedral of Modena (2009-2013). Scientific coordinator: Prof. Ing. Tomaso Trombetti (Budget 50.000,00 €).
- Research contract between the **Unione Intercomunale Reno-Galliera (joining of eight Municipalities of the Province of Bologna) and the Department DICAM** for the evaluation of the seismic calculation reports relevant to new and/or existing buildings: seismic authorisations and project deposits (2010-2013). Scientific coordinator: Prof. Ing. Tomaso Trombetti. (Budget 40.000,00 €).
- Research contract between **Consorzio ICF and Inter Department Center CIRI** (2011-2013), for the writing of Guide Line for the designing of r.c. walls structures. Scientific coordinator: Prof. Ing. Tomaso Trombetti. (Budget 20.000,00 €.)
- Research contract between the **Bologna Municipality and the Department DICAM** for the interpretation of the monitoring data relating to the Asinelli Tower of Bologna (2010-2015). Scientific coordinator: Prof. Ing. Tomaso Trombetti. (Budget 90.000,00 €.)
- Research contract between the **Head of Fine Arts Regional Board (Soprintendenza - Direzione Regionale per i Beni Culturali e Paesaggistici dell'Emilia Romagna) and the Department DICAM** for the seismic vulnerability assessment of the following 12 cultural heritage buildings: Castello di Canossa (Reggio Emilia), Ex chiesa di San Barbaziano (Bologna), Ex chiesa di San Mattia (Bologna), Ex convento dei Celestini - Archivio di Stato (Bologna), Palazzo Ancarani - Sede della Soprintendenza (Bologna), Ex convento di Sant'Ignazio - Pinacoteca Sop. PSAE (Bologna), Museo Nazionale Pompeo Aria, Marzabotto (Bologna), Torre Jussi, Castel D'Aiano (Bologna), Palazzo Milzetti, Faenza (Ravenna), Casa Pascoli, San Mauro Pascoli (Forlì-Cesena), Area Archeologica di Claterna, Ozzano (Bologna), Rocca di San Leo (Rimini). Scientific coordinator: Prof. Ing. Pier Paolo Diotallevi. (Budget 52.000,00 €).

- Research contract between the **Bologna Municipality and the Department DICAM** (2012-2013) for the realization of local reinforcing projects for some schools in Bologna. (Budget 40.000,00 €.)
- Research contract between the **Technical Office of the Sant'Orsola – Malpighi Hospital, the Department DICAM** and the Technical Office of the University of Bologna (AUTC – Area Edilizia e Logistica dell'Alma Mater Studiorum), for the seismic vulnerability assessment of the building structures of the S.Orsola – Malpighi Hospital (roughly 300,000 square meters). Scientific coordinator: Prof. Ing. Pier Paolo Diotallevi. (Budget 220.000,00 €).
- Research contract between the **Technical Office of the University of Bologna (AUTC – Area Edilizia e Logistica dell'Alma Mater Studiorum) and the Department DICAM** for the seismic vulnerability assessment of the building structures of the University of Bologna (roughly 320,000 square meters). Scientific coordinators: Prof. Ing. Pier Paolo Diotallevi and Prof. Ing. Francesco Ubertini.

MEMBER OF ACADEMIC BODIES

The undersigned, starting from year 2012-2013, is a member of the following academic bodies:

- Educations Committee of Department DICAM, University of Bologna - Head Prof. Ing. Marco Savoia.
- Department DICAM Board, University of Bologna - collaborates with the Head of Department Prof. Ing. Francesco Ubertini in the execution of his duty.
- Council of the School of Engineering and Architecture, University of Bologna - Head Prof. Ing. Pier Paolo Diotallevi, corporate organ of professors, researches and students which deliberates on the main School activities.

TEACHING ACTIVITY

- "Structural Design A", component of the integrated course "Laboratorio di Costruzioni nell'Architettura IIA", (SSD: ICAR/09, CFU: 8), Faculty of Architecture, University of Bologna (SSD: ICAR/09, CFU: 8), years: 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014.
- "Strutture nell'Architettura - Tecnica delle Costruzioni" (Structures and Architecture) (SSD: ICAR/09, CFU: 4), Faculty of Architecture, University of Bologna (SSD: ICAR/09, CFU: 8), years: 2008-2009, 2009-2010.

TEACHING ACTIVITY EXTRAINSTITUTIONAL

Retraining courses and conferences for building construction practitioners (SAIE, AIPE, Nidyon, Plastbau, CoopSette): more than 10 speeches.

Retraining professional courses: Ordine degli ingegneri di Ravenna (3 editions), Ordine degli Ingegneri di Bologna, Ordine degli Architetti di Ravenna, Autostrada Brescia Verona Vicenza Padova S.P.A..

High Educational Courses, inserted in the Regional catalogues: "Il progettista strutturale", ISCOMER (3 editions).