Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)	Barbara Borzi
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E-mail	barbara.borzi@eucentre.it
Nationality	Italian
Date of birth	9th November 1970
Gender	Female

Desired employment / Occupational field

Work experience

Dates	September 2004 →
Occupation or position held	Employee – Senior Researcher
Main activities and responsibilities	- Head of Vulnerability and Territorial Management Section; - Description of project activity on the attached document "working experiences".
Name and address of employer	EUCENTRE – European Centre for training and research in earthquake engineering Via Ferrata 1, 27100 Pavia, Italy
Type of business or sector	Research centre
Dates	March 2002 – August 2004
Occupation or position held	Employee – Senior Engineer
Main activities and responsibilities	- Description of project activity on the attached document "working experiences".
Name and address of employer	WTI - Wissenschaftlich-Technische Ingenieurberatung GmbH Karl-Heinz-Beckurts-Straße 8 52428 Jülich, D
Type of business or sector	Engineering consultancy
Dates	November 1999 – February 2002
Occupation or position held	Employee – Senior Engineer
Main activities and responsibilities	- Head of structural analysis section - Description of project activity on the attached document "working experiences".
Name and address of employer	ABS - ABS Consulting Ltd. EQE House, The Beacons, Warrington Road Birchwood, Warrington, Cheshire WA3 6WJ, UK
Type of business or sector	Engineering consultancy

Dates	February 1999 – October 1999
Occupation or position held	Post Doc
Main activities and responsibilities	- Lecturer in seminars of earthquake engineering and modeling of non linear behavior of structures under seismic loads - Co-supervisor of master thesis in earthquake engineering and seismology - Analysis of beams with fuse inserts: consultancy work for DEE Associates, UK; - Seismic risk analysis of the 700 km long Egnatia motorway running east-west across northern Greece; - Analysis of a number of buildings in Athens, Greece after the September 1999 earthquake; - Analysis of a number of buildings in Koaceli, Turkey after the August 1999 earthquake.
Name and address of employer	Department of Civil and Environmental Engineering – Imperial College Skempton Building SW7 2AZ, London, UK
Type of business or sector	University
Dates	July 1995 – October 1995
Occupation or position held	Research assistant
Main activities and responsibilities	- Implementation of an FE code for the dynamic analysis of inelastic structures; - Implementation of constitutive laws for material characterised by non-linear behaviour; - Implementation in large displacement of a finite element to model buckling of steel.
Name and address of employer	Dipartimento di Ingegneria Strutturale - Università degli Studi di Brescia Via Branze 43, 25123 Brescia, Italy
Type of business or sector	University

Education and training

Dates	October 1995 – October 1998
Title of qualification awarded	PhD in earthquake engineering Final exam on the 11th of February1999
Principal subjects/occupational skills covered	Doctorate program on “Inelastic Force and Displacement Spectra for Modern Seismic Design and Assessment and Methods of Assessment”; Registered at the Politecnico di Milano, under the supervision of Professor E. Faccioli and Professor G. M. Calvi. External supervision by Professor A. S. Elnashai, who acted as her assessor. Consultancies for European projects. Part of the mobility team of ICONS and NODISASTR, two major earthquake engineering research networks funded by the EU. Hence part of the Doctorate has been spent at Imperial College under the supervision of Professor Amr S. Elnashai. The main professional experiences are summarised below: - Investigation on influence of inelastic behaviour and input motion parameters on inelastic displacement and acceleration spectra, to be used for design and assessment of structures subjected to earthquake loads; - Evaluation of behaviour coefficients to adopt in simplified methods for the seismic design and assessment, based on forces and displacements; - Definition of the seismic risk of Catania, funded by the Italian Ministry for Civil Defence.
Name and type of organisation providing education and training	Dipartimento di Ingegneria Strutturale Politecnico di Milano, Italia
Level in national or international classification	PhD

Dates	September 1989 – July 1995
Title of qualification awarded	BSc in Structural Engineering, awarded degree with grades 110/110, with a mark of distinction (laude) Final exam on the 11th of July 1995
Principal subjects/occupational skills covered	Excellent knowledge in the field of structural dynamics and finite elements modelling Thesis on the development of a code for the non linear FE analysis of structures subjected to dynamic loads. The code implements constitutive laws aimed to describe the non linear behaviour of steel and concrete.
Name and type of organisation providing education and training	Dipartimento di Ingegneria Civile Università degli Studi di Brescia, Italia
Level in national or international classification	BSc

Other language(s)

Self-assessment	Understanding				Speaking				Writing	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
German	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user

(*) Common European Framework of Reference for Languages

Social skills and competences

Barbara Borzi is perfectly capable to proficiently work and fit in a team. Six years spent abroad in a very flexible and dynamic work market, refining her personal and technical skills, have strongly improved her capability to adapt to every job requirement.

Organisational skills and competences

Barbara Borzi's managing skills have always been appreciated by her employers. She is perfectly capable to lead teams, even important ones, and copes pretty well with her co-workers. Since the time of her first employment with ABS Consultancy (UK), after a short period of time, Barbara Borzi was promoted and covered the position of technical leader in the structural analysis section which had a staff of about 20 engineers.At Eucentre, Pavia (Italy), she currently is head of Vulnerability and Territorial Management Section, one of the largest, counting about 10 employees.

Technical skills and competences

- Definition of mechanical methods for the evaluation of seismic vulnerability of structures and infrastructures.
- Development of tools to compute seismic risk and damage scenario od structure and infrastructures.
- Outstanding knowledge of probabilistic theory.
- Programming skills in FORTRAN, PERL, VB, Matlab.
- Finite elements modeling.
- Non-linear dynamic analysis.
- Implementation of finite element codes for the dynamic analysis of structures with non-linear behaviour.
- Implementation of "user materials" and "user finite elements".
- Knowledge of finite element codes like: ABAQUS, ANSYS, LS-DYNA, NX Nastran, MIDAS GEN & MIDAS Civil, SAP2000.
- Definition of inelastic response spectra in displacement and acceleration for innovative project methods to assess existing structures.

Driving licence

Italian licence cat. B

Additional information	- Qualified Engineer - Chartered Engineer since January 1996 (act N° 2711, Brescia, Italy) References: Professor Gian Michele Calvi Professor at IUSS (Istituto Universitario Studi Superiori) Pavia (Scientific Disciplinary Sector Science and Technologies) Professor Mauro Dolce Professor at Federico II Napoli
Annexes	- Working experiences - Scientific publications
	I hereby authorize the use of my personal details according to DL July 30th, 2003, N° 196. “Code in protection of personal details”.
Firma	

WORKING EXPERIENCES

SEPTEMBER 2004 – AT PRESENT
SENIOR RESEARCHER AT EUCENTRE, PAVIA, ITALY

Barbara Borzi is appointed as a Senior Engineer at Eucentre since May 2008. She joined Eucentre in September 2004 after a long period abroad, and is currently Head of the Vulnerability and Territorial Management Section.
She is active in several projects in which Eucentre is involved. Some examples in the following:

- Project amount € 360.000: **Project leader** in the evaluation of seismic vulnerability of hospitals in Lombardia district. The results of the study have been shown through implementation of a toolbar in a GIS system (Geographical Interface System). The outcome of the vulnerability study has been used to develop a cost-benefit methodology to evaluate intervention priorities on the base of regional funds available to mitigate the risk. The project started in January 2005 and was closed in July 2006;
- Project amount € 48.500: Definition of probability distribution of characteristic structural behaviour parameters of buildings typical for the as built in Italy for Risk Management Solutions (RMS). The project started in July 2006 and closed in October 2006;
- Project amount € 461.800: **Project leader** in the seismic risk evaluation of a large petro-chemical industrial estate in Sicily (Priolo Gargallo) on behalf of the prefecture of Siracusa. Several evaluation studies have been performed targeting: vulnerability of structures and infrastructures, effects of local amplification and seismic hazard. The results of the studies have been combined to assess the seismic risk of the area. A method with three levels of detail has been adopted to identify structures towards which to address the available funds for eventual assessment and seismic retrofit. The project started in January 2007 and closed in January 2009;
- Project amount € 605.167 €: **Project leader** of "Crop and reschedule regional laws in matter of earthquake engineering and computerised procedures to support the regional offices operating in the field of constructions and territorial management". For this project the IT system SI-ERC (Sistema Informatico – Ediliza Regione Calabria) and SI-TERC (Sistema Informatico – Territoriale Regione Calabria) have been implemented. Such systems are accessible via web and allow on one side to upload design data on new structures, retrofitting of existing ones and microzonation studies, and on the other side allow officials to verify all inputs in a fully automatic way. The first information system, SI-ERC, integrates a procedure to upload all administrative and technical paperwork in a database. SI-ERC manages with all kind of structures and all kind of activities (i.e. new construction, retrofit, etc.) matching the Italian regulation (Norme Tecniche sulle Costruzioni, DM 14 gennaio 2008). SI-ERC uploads also design data through forms organized in web pages for buildings and bridges. These design data first feed routines then check the compliance of the design with the code regulation. The results of the checks give a score to the structures and identify structures which are absolutely safe, absolutely unsafe and the ones that need a higher level of inspection. The second information system, SI-TERC, is used to transfer data on microzonation studies. The Department of Civil Protection has established guidelines for the seismic microzonation which rule the documentation that needs to be produced as a function of the adopted level of detail. SI-TERC establishes the format of the results of microzonation study and verifies the compliance of the format. The project started in March 2008 and closed in June 2009;
- Project amount € 206.167: **Project leader** of "Planning of training courses in Seismic Engineering matters" Barbara Borzi has managed the training activities of practitioners and regional officials supposed to use IT systems SI-ERC and SI-TERC. The project started in June 2009 and closed in March 2010;
- Project amount € 188.056: **Project leader** of "Evaluation and reduction of seismic hazard of structures and infrastructures of Calabria District from a strategic point of view". The project started in June 2009 and closed in March 2012;
- Project amount € 336.000 in 2010-2011 and € 240.000 in 2012: **Project leader** of both projects, on behalf of Calabria District. The first project started on November 15th , 2011 and came to an end on December 31st , 2011. The second project covered the period form the 1st of January and the 31st of December 2012. The projects required a continuous presence of Eucentre staff in the technical offices of Calabria District to give support in authorization of constructions using the SI-ERC IT system.
- Project amount 102.000 € with two integrations of 55.000 € and 20.000 €: **Project leader** to deliver SIS IT system (Sistema Informatico Sismica) due to a contract with Emilia Romagna District, active since December 2009, in which an IT module has been implemented to forward and manage construction paperwork. The module has been tested in October 2011. It was also implemented a package of specific checks on buildings classified as "low vulnerability" and for which IT checks only will be the viable meant to schedule human resources.This

package has a further value of 50.000 €. Furthermore, since the release of SIS several contracts of assistance have been subscribed;

- Project value 97.500 €: Project leader of a project activated on September 12th, 2011 for the acquisition of the IT system GIPE (Gestione Informatica Pratiche Edilizie) on behalf of Trento District. GIPE development ended in December 2012;
- Project value over 1 million €: Project leader of a project funded by the department of Civil Protection of Presidenza del Consiglio dei Ministri (DPC) with the target to define seismic risk maps of the as built of Italian municipalities. The project started in February 2009 and it is still subject of ongoing contracts. During this project two WebGIS applications have been developed to visualize seismic risk maps and to define in real time the damage scenario of the municipalities surrounding the epicentre in case of a seismic event. Core activities of this project have been: (i) the validation proposed methodologies to calculate the damage scenario of the area around the epicentre. This activity has been based on the comparison with observation data of earthquakes that occurred in Italy since Friuli 1976 until Emilia 2012; (ii) implementation of OpenQuake as an alternative software to compute real time damage scenario; (iii) the implementation of models to compute damages produced by induced seismicity;
- Project amount over 1 million €: Project leader of a project funded by DPC finalized to set priorities of intervention on school buildings. The project started in February 2009 and it is still subject of ongoing contracts. During this project a WebGIS application has been developed, the base of which are data from the census on national scale up to date on school buildings. These data have been used to compute seismic risk and damage scenario in the case of occurrence of an earthquake. A further platform has been developed to manage and monitor retrofit plans on school buildings undergone DPC's approval and financing;
- Project amount over 2 million €: Project leader of a project funded by DPC to assess the seismic risk on the global national road system. The project started in February 2009 and it is still subject of ongoing contracts. During this project a WebGIS application has been developed to set intervention priorities on the base risk indexes of the road system infrastructures, and to identify the most secure path for all rescue teams involved in case of an event. The system works using a database of structural data that automatically computes/analyses bridges, tunnels and retaining structures with a level of detail depending on the level of knowledge. As an example, for known bridges non-linear finite element analyses are performed. Furthermore, the seismic risk related to landslides has also been computed. In the case of occurrence of an earthquake the platform can also upload data on the real damage of structures. As a consequence of observed damage, the vulnerability models are updated. Furthermore, the platform allows to input data on new infrastructures which will be added in the database and for which seismic risk indexes will be computed. It The integration of other infrastructures of the transportation network like harbours and airports in the platform is still ongoing;
- Project amount 350,000 €: Project leader of a project funded by DPC to build an electronic database of data on observed damage during occurred earthquakes (Friuli 1976, Irpinia 1980, Abruzzo 1984, Marche 1997, Pollino 1998, Molise e Puglia 2002, Emilia 2003, L'Aquila 2009, Emilia 2012). The project started in January 2014 and it is still subject of ongoing contracts. The databases of observed damage have a GIS graphical interface and can be accessed via internet. The WebGIS DADO (DAtabase di Danno Osservato) also allows to upload data of future earthquakes. These data will be processed and added to allow visualization through the WebGIS;
- Project amount 300,000 €: Project leader of a project funded by DPC to implement a web platform with GIS functionality to manage data on seismic retrofit of residential buildings (WebGIS MeP 11- Monitoraggio Edilizia Privata - articolo 11). The project started in January 2014 and it is still subject of ongoing contracts;
- Project amount 456.300 €: Project leader of a project that has as an end user Rete Ferroviaria Italiana. The project aims to give, in quasi real time, to the operational room information on where to slow/stop the train traffic in case of an earthquake, refine seismic damage scenarios to provide inspection teams with information on priority inspections, to organize data on infrastructures for evaluating their seismic vulnerability in a computer database, and thus to facilitate their use in scenarios evaluated according to previous points, and give all necessary input to seismic risk mitigation programs. The project involves activities organized in the following macro-activities: (i) development of an analysis tool for the management of post-seismic emergency in the epicenter area and for the definition of priorities in risk mitigation programs; (ii) development of a tool for sharing, loading and processing data of infrastructures inspection in order to calculate their fragility curves; (iii) development of a WebGIS on the seismic risk and damage scenario of railway system, which can be used and updated by RFI.

- Partner in EC funded projects: The projects are listed below:
    - FP7-INCO-2011-6 – SASPARM "Support Action for Strengthening Palestinian-administrated Areas capabilities for Seismic Risk Mitigation"

- FP7-INFRA-2010-1.1.27 – NERA "Network of European Research Infrastructures for Earthquake Risk Assessment and Mitigation"
- PON01_02366 – STRIT "Strumenti e Tecnologie per la gestione del Rischio delle Infrastrutture di Trasporto"
- PON04a2_A – PRISMA "Piattaforme cloud Interoperabili per smart government"
- DG ECHO 2013 – ECOSTRESS "Ecological Coastal Strategies and Tools for Resilient European SocietieS"
- DG ECHO 2014 – SASPAMR2 "Support Action for Strengthening Palestinian-administrated Areas capabilities for Seismic Risk Mitigation"
- DG ECHO 2016 – PEC "Post-Emergency, Multi-Hazard Health Risk Assessment in Chemical Disasters"
- DG-ECHO 2017 – GREEN "GREEn iNfrastructures for disaster risk reduction protection: evidence, policy instruments and marketability"

- Research activities:
  - Definition of mechanical methods to evaluate the seismic vulnerability on urban scale of masonry and reinforced concrete buildings. Barbara Borzi is first author of articles published in technical literature that describe SP-BELA (Simplified Pushover – Based Earthquake Loss Assessment);
  - Finite elements modelling of areas and geotechnical structures with DYNAFLOW, a finite element code giving a detailed description of non-linear behaviour of soil deposits;
  - Definition of capacity curves (pushover) through simplified approaches allowing to analyse huge datasets of buildings with a reasonable computational effort. Barbara Borzi has performed a complete validation of the capacity curve evaluation methods. Such methods have been employed for the definition of peculiar parameters of structural behaviour to be used in probabilistic models of seismic behaviour of existing buildings;
  - Definition of progressive damage of structures subjected to subsequent ground motion;
  - Development of mechanic-based vulnerability models for bridges with level of reliability which is a function of the knowledge level. For a complete knowledge, proper nonlinear dynamic finite element analyses are performed. On the other hand, in case of partial knowledge of geometry and structural properties, probabilistic approaches are implemented and adopted.

MARCH 2002 – AUGUST 2004
SENIOR ENGINEER AT WTI GMBH, JÜLICH, GERMANY

Barbara Borzi has been working in Jülich as a project engineer. The main tasks covered by Barbara Borzi are mechanical and thermal FE analysis of mechanical systems.

The main projects undertaken were:
- Simplified FE Analyses of a reactor building house and new annexes for decommissioning. The FE analysis has been undertaken with ANSYS.
- Impact analyses of radioactive material containers falling on shock absorbing concrete. The main requirements of the project were to model the non-linear behaviour of absorbing concrete in order to match the results of experimental tests. The analyses have been undertaken with LS-DYNA.
- Analyses of a cask falling with different orientations on supports mounted on tracks and train wagons. The models of selected bounding conditions, simulating accidents, have been executed. The FE analyses have been undertaken with LS-DYNA. The track and the train wagon have been modelled in details, although the target of the analyses was to define the stress level produced by the impact on the container, to assure the container's integrity in case of accident during transport.
- Study of the deceleration and associated stress level on nuclear fuel tubes, located in casks falling on the pavement with different orientation during transport. A number of hand calculations and FE analyses have been undertaken to provide the client with a range of possible stress conditions. Due to the uncertainty, typical of the behaviour of the fuel elements, a single result was in this case meaningless.
- Impact analyses of nuclear fuel element containers impacting a concrete foundation with different orientations. The project requirement was to identify the peak stresses in the container components, welds and bolts, in order to check whether the container integrity was guaranteed in case of accident. The analyses have been undertaken with LS-DYNA.

- Impact analyses of different casks falling on soil layers. The non-linear properties selected for the soil layers had to be validated against the results of some available experimental tests.
- Static analyses on a cask and its components, subjected to body forces corresponding to the deceleration produced by the cask impact. Thermal analyses have been carried on the same cask subjected to high temperature due to fire accident. The FE analyses have been undertaken with ANSYS.
- ANSYS seismic analyses of four piled up containers. The containers have been modelled as elastic, and contact elements have been used to model the compression and friction forces transferred between the containers and the bottom container and the soil.
- ANSYS static analyses of a basket for nuclear fuel elements. The basket is made by aluminium sheets orthogonal intersected through manufactured cuts in the sheets. The fuel elements are in still boxes located between the aluminium sheets. Finally, the aluminium sheets end in blocks located on the perimeter. The interaction between aluminium sheets, still boxes, and external blocks have been modelled through contact elements.
- Analysis of an aircraft impacting on a reactor house in a nuclear related facility. FE analyses have been undertaken with LS-DYNA.

NOVEMBER 1999 – FEBRUARY 2002
SENIOR ENGINEER AT ABS CONSULTANCY, WARRINGTON HEAD OFFICE, UK

Barbara Borzi has been working for EQE International (renamed ABS Consulting) at the Warrington Head Office as a senior engineer. Work has ranged from commercial to nuclear sectors, involving administrative and technical work; this included proposal writing, marketing activities, development of software for the inelastic analysis, development of routines for the post-processing of FE analysis results. The employer particularly appreciated Barbara Borzi's experiences and capabilities in the field of non-linear FE analysis. Her particular skills lead to her promotion to Technical Leader of the Structural Analysis Section.
She also conducted business activities for ABS Consulting in Italy involving various Italian consultancies.

The main projects undertaken were:
- Software development for a cost-benefit model. A probabilistic interpretation has been given to the proposed model to evaluate the probability of a positive benefit from the retrofit of different types of building.
- Probabilistic assessment of structural capacity.
- Seismic upgrade of the buildings of a pharmaceutical facility in Egypt.
- Calculation check and definition of general guidelines for the assessment and retrofit of an industrial facility damaged during 17th August Koaceli (Turkey) earthquake.
- Assessment of a roadway running parallel to a dock wall, based on a method that accounts for the inelastic behaviour of reinforced concrete.
- Seismic assessment of dockside cranes.
- Calculation check of a steel building and a reinforced concrete pond to be built in Corlu, Turkey.
- Seismic assessment of equipments.
- Vulnerability study of industrial facilities in Japan.
- FE analyses and seismic assessment of the drainage system of a submarine dock wall. ABAQUS was adopted as FE software.
- Independent technical assessment of FE models of buildings and equipments subjected to seismic, impact and blast loads.
- Implementation of an adequate tool to model the inelastic behaviour of reinforced concrete elements. This tool uses ABAQUS for the FE analyses. It is also suitable for non-linear static to collapse analyses (i.e. push-over). The tool has been extensively validated comparing results of another independent software product, owned by Imperial College research group (INDYAS), as well as experimental tests on reinforced concrete elements and structures.
- Development of software capability for dynamic inelastic analysis of RC structures.
- Seismic assessment of two reinforced concrete buildings located in the vicinity of a dock wall. The assessment method adopted was based on the prediction of the inelastic behaviour of reinforced concrete structures by means of non-linear static to collapse analyses. FE analyses have been undertaken with ABAQUS.
- FE model of a reinforced concrete building of a nuclear facility. The aim of the study was to assess the structural capacity of the building subjected to high vertical accelerations. A non-linear time history analysis was performed using ABAQUS.
- Non-linear static to collapse analyses of typical frames of three reinforced concrete buildings damaged by 17th August Koaceli (Turkey) earthquake. the benefit of the proposed retrofit measures to improve the global seismic performance have been identified. The FE analyses have been undertaken with ABAQUS.
- Seismic assessment of a masonry building. The assessment methodology was based on non-linear static to collapse

analysis. In the FE model of the building the seismic behaviour of the masonry panels was modelled through a macro-element that accounts for the failure mechanism that might occur in a masonry panel. The building's model was created using IDEAS and the FE analysis has been undertaken using ABAQUS. Comprehensive sensitivity studies have been undertaken to identify the influence on the assumptions adopted to model the non-linear behaviour of the panels.

- FE analyses of buildings in a nuclear related facility. The models of the buildings were created using IDEAS, and the FE analyses have been undertaken using ABAQUS. The analyses that were carried on were modal analysis both with response spectra and with accelerograms (time history). A routine was written to execute the code check of the structural elements. The output of the code check routine were plots of the FE model in which different colours highlighted elements that satisfied or failed the code check. Other routines have been developed to calculate the secondary response spectra from the results of the time history analysis.
- FE analysis of steel frames using ANSYS.
- Definition of unconditional probability of failure under earthquake loads of industrial facilities. The fragility curves derived for typical components of petrochemical facilities have been convoluted with UK hazard curves to define the unconditional probability of failure and damage.

SCIENTIFIC PUBLICATIONS

Borzi B., Elnashai A.S. [1998], "Inelastic Spectra and Ductility Damping Relationships for Displacement-Based Seismic Design", ESEE Report No. 98-4 (Imperial College-Politecnico di Milano joint report), 157 pp.

Faccioli E., Tolis S.V., Borzi B., Elnashai A.S., Bommer J.J. [1998], "Recent Developments in the Definition of the Design Seismic Action in Europe", 11th European Conference on Earthquake Engineering, Paris 1998.

Borzi B. [1998], "Design Spectra Based on Inelastic Response", Doctorate Thesis, December 1998, 290 pp.

Faccioli E., Pessina V., Calvi G.M., Borzi B. [1999], "A study of Damage Scenarios for Residential Buildings in Catania City", Journal of Seismology (Special Issue), Vol. 3, N. 3, pp 327-343.

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Borzi B., Calvi G.M., Elnashai A.S., Faccioli E., Bommer J.J. [2000] "Inelastic Spectra for Displacement-Based Seismic Design", Journal of Soil Dynamics and Earthquake Engineering, Vol. 21, pp. 47-61.

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Borzi B., Hasson M.V., Morrison A.J.T.M., Sanderson D.J. [2000], "Push-Over Analysis of RC Structures", 14th ABAQUS UK User Group Conference, Warrington 2000.

Borzi B., Sanderson D.J., Thurlbeck S., Wong S. [2002], "Non-Linear Analysis of RC Structures with ABAQUS", 12th European Conference of Earthquake Engineering, London 2002.

Elnashai A.S., Borzi B., Vlachos S. [2004], "Deformation-Based Vulnerability Function for RC Bridges", Journal of Structural Engineering and Mechanics, Vol. 17, No. 2, pp. 215-244.

Borzi B., Pinho R., Crowley H. [2007], "Simplified Pushover-Based Vulnerability Analysis for Large Scale Assessment of RC Buildings", Engineering Structures, Vol. 30, No. 3, pp. 804-820.

Borzi B., Crowley H., Pinho R. [2007], "SP-BELA: Un metodo meccanico per la definizione della vulnerabilità basato su analisi pushover semplificate", Proceedings of XII Convegno L'Ingegneria Sismica in Italia ANIDIS, Pisa (Italy) 2007.

Borzi B., Dall'Ara A., Lai C.G., Strobbia C., Ferrini M. [2007], "Dynamic–Compatible Pseudo-Static Analysis of a Natural Slope", Proceedings of XII Convegno L'Ingegneria Sismica in Italia ANIDIS, Pisa (Italy) 2007.

Crowley H., Borzi B., Pinho R., Colombi M., Onida M. [2008], "Comparison of DBELA and SP-BELA: Two Analytical Vulnerability Assessment Methodologies", Advances in Civil Engineering, Article ID 438379, 19 pp.

Colombi M., Borzi B., Crowley H., Onida M., Meroni F., Pinho R. [2008], "Deriving Vulnerability Curves with Italian Earthquake Damage Data", Bulletin of Earthquake Engineering, Vol.6 , No. 3, pp. 485-504.

Borzi B., Crowley H., Pinho R. [2008], "Simplified Pushover-Based Earthquake Loss Assessment (SP-BELA) Method for Masonry Buildings", International Journal of Architectural Heritage, Vol. 2, No. 4, pp. 353-376.

Borzi B., Crowley H., Pinho R. [2008], "The Influence of Infill Panels on Vulnerability Curves for RC Buildings", Proceeding of 14th World Conference on Earthquake Engineering, Bejing 2008.

Bolognini D., Borzi B., Pinho R. [2008], "Simplified Pushover-Based Vulnerability Analysis of Traditional Italian RC Precast Structures", Proceeding of 14th World Conference on Earthquake Engineering, Bejing 2008.

Borzi B., Pola D., Vona M., Pinho R., Masi A. [2008], "An Extensive Validation Exercise on Simplifies Methods for the Seismic Performance Evaluation on RC Frame Building" Proceeding of 14th World Conference on Earthquake Engineering, Bejing 2008.

Fiorini E., Onida M., Borzi B., Pacor F., Luzi L., Meletti C., D'Amico V., Marzorati S., Ameri G. [2008], "Microzonation study for an industrial site in southern Italy", Proceeding of 14th World Conference on Earthquake Engineering, Bejing 2008.

Crowley H., Colombi M., Borzi B., Faravelli M., Onida M., Lopez M., Polli D., Meroni F., Pinho R. [2009], "Comparison of seismic risk maps for Italy", Bulletin of Earthquake Engineering, Vol. 7, 149-180.

Borzi B., Dell'Acqua F., Faravelli M., Gamba P., Lisini G., Onida M., Polli D. [2009], "Studio di vulnerabilità di una vasta area industriale mediante immagini telerilevate da satellite", Progettazione sismica, No. 2, 105-117.

Borzi B., Masi A., Pinho R., Pola D. and Vona M. [2009], "Seismic performance evaluation of RC frame buildings based on simplified and nonlinear dynamic analyses", Submitted to Advances in Civil Engineering, Hindawi Publishing Corporation.

Borzi B., Ceresa P., Lopez M., Magni F., Bianchi F. [2009], "Metodo semplificato per la definizione della curva di Pushover di edifici in ca a telaio", Atti del XIII Convegno ANIDIS, L'Ingegneria Sismica in Italia, No. Paper S2.3., Bologna 2009.

Colombi M., Crowley H., Di Capua G., Peppoloni S., Borzi B., Pinho R., Calvi G.M. [2010], "Mappe di rischio sismico a scala nazionale con dati aggiornati sulla pericolosità sismica di base e locale", Progettazione Sismica, No. 1, pp. 93-112.

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