

CURRICULUM VITAE BREVE

Luigi Fenu

COGNOME Fenu

NOME Luigi

Posizione attuale: Professore Associato di Tecnica delle Costruzioni

Affiliazione: Università di Cagliari

Dipartimento di Ingegneria Civile, Ambientale e Architettura (DICAAR).

Via Marengo 2, 09123 Cagliari, Italy.

Telefono: (+39) 070 6755638

Fax: (+39) 070 6755418

Email: lfenu@unica.it

Luogo di nascita: Cagliari

Nazionalità: Italiana

Qualifica: Laurea quinquennale a ciclo unico in Ingegneria Civile Edile, Università di Cagliari, votazione 110/110 e lode

Carriera

2019-: Professore Associato dell' Università di Cagliari, Facoltà di Ingegneria e Architettura.

2012-: Membro, fondatore e *Research Fellow* del Centro di Ricerca SIBERC (Innovative and Sustainable Bridges Engineering Research Center) della Fuzhou University, Fuzhou (Cina).

2010-2019: Professore Aggregato dell' Università di Cagliari, Facoltà di Ingegneria e Architettura.

2001-2019: Ricercatore dell' Università di Cagliari, Facoltà di Ingegneria e Architettura.

1996-2000: Responsabile del Laboratorio del Dipartimento di Ingegneria Strutturale dell'Università di Cagliari.

1988-1996: Tecnico Laureato del Dipartimento di Ingegneria Strutturale dell'Università di Cagliari.

1984-: Ingegnere professionista, iscritto all'Albo degli Ingegneri, Provincia di Cagliari.

Research fields

(i) Campi di ricerca attuali – Principali:

- Conceptual design, ottimizzazione strutturale e form-finding di strutture ed in particolare di ponti; ponti con strutture innovative (ponti a guscio, ponti in curva);
- Comportamento strutturale di strutture in materiali quasi-fragili con particolare riferimento alle strutture in muratura di terra cruda. Modellazione di murature tradizionali in pietra e in adobe;
- Studio della risposta sismica degli edifici in terra cruda;
- Modi di rottura dei giunti in strutture in acciaio tubolari del tipo CHSS (Circular Hollow Steel Structures) e CFSTS (Concrete Filled Steel Tubular Structures);
- Analisi della risposta sismica di strutture in acciaio con controventi pre-tesi;
- Modellazione degli effetti dello *shear-lag* nelle solette di impalcati compositi acciaio-calcestruzzo di ponti strallati;
- Studio analitico e sperimentale di solai compositi in legno e dei loro giunti.

(ii) Campi di ricerca attuali - Collaterali:

- Comportamento viscoso di ponti in cemento armato precompresso;
- Ottimizzazione di pali di fondazione soggetti a carichi laterali, in particolare in ponti integrali;
- Comportamento dinamico dei materiali da costruzione;

-Ottimizzazione di dettaglio di strutture in cemento armato;
-Studio sperimentale e numerico dei composite cementitizi.

- Articoli in riviste “peer review” indicizzate (Scopus and WoS):

più di 30

- Articoli in Atti di Congresso di Conferenze Internazionali:

più di 50

Lista degli articoli pubblicati in riviste internazionali negli ultimi dieci anni

Fenu L, Congiu E, Deligia M, Giaccu GF, Hosseini A, Serra M. (2021) Buckling analysis of piles in multi-layered soils. Applied Sciences, vol. 11(22), 10624. ISSN: 2076-3417.

Briseghella B, Fa G, Aloisio A, Pasca D, He L, Fenu L, Gentile C (2021). Dynamic behaviour of the Curved Cable-Stayed Bridge in Venice under different design choices. Structures, vol. 34, p. 4669–4681. ISSN: 2352-0124, doi: 10.1016/j.istruc.2021.10.060

Fenu L, Colasanti V, Briseghella B, Nuti C, Varum H (in press) Analisi non lineare con macroelementi della risposta alle azioni orizzontali di edifici in muratura di forma circolare. ArcHistoR, Special Issue. ISSN: 2384-889, doi: 10.3390/app112210624.

Congiu E, Fenu L, Briseghella B (2021). Comparison of form-finding methods to shape concrete shells for curved footbridges. Structural Engineering International, vol. 31(4), p. 527-535, ISSN: 1016-8664, doi: 10.1080/10168664.2021.1878974

Cassese P, Balestrieri C, Fenu L, Asprone D, Parisi F (2021). In-plane shear behaviour of adobe masonry wallets strengthened with textile reinforced mortar. Construction and Building Materials, vol. 306, 124832, ISSN: 0950-0618, doi: 10.1016/j.conbuildmat.2021.124832

Fenu L, Colasanti V, Parisi F (2021). Numerical simulation of shaking table test on an adobe masonry building through nonlinear macro-element analysis. International Journal of Masonry Research and Innovation, vol. 1, ISSN: 2056-9459, doi: 10.1504/IJMRI.2021.10040995

Giaccu GF, Solinas D, Briseghella B, Fenu L (2021). Time-dependent analysis of precast segmental bridges. International Journal of Concrete Structures and Materials, vol. 15, p. 1-21, ISSN: 1976-0485, doi: 10.1186/s40069-020-00445-6

Feng Y, Lan C, Briseghella B, Fenu L, Zordan T (2022). Cable Optimization of a Cable-Stayed Bridge Based on Genetic Algorithm and Influence Matrix Method. Engineering Optimization, vol 54(1), p. 20-39, ISSN: 0305215X, 10290273. doi: 10.1080/0305215X.2020.1850709

Fenu L, Congiu E, Marano GC, Briseghella B (2020). Shell-supported footbridges. Curved and Layered Structures, vol. 7, ISSN: 2353-7396

Feng Y., Wang C., Briseghella B., Fenu L., Zordan T. (2020). Structural Optimization of a Steel Arch Bridge with Genetic Algorithm. Structural Engineering International, p. 1-10, ISSN: 1016-8664, doi: 10.1080/10168664.2020.1773373

Fenu L, Colasanti V, Congiu E, Giaccu GF, Trentadue F, Briseghella B (2019). A Heuristic Approach to Identify the Steel Grid Direction of R/C Slabs Using the Yield-Line Method for Analysis. Advances in Civil Engineering, vol. 2019, p. 1-15, ISSN: 1687-8086, doi: 10.1155/2019/6017146

Fenu L, Congiu E, Lavorato D, Briseghella B, Marano GC (2019). Curved footbridges supported by a shell obtained through thrust network analysis. *Journal of Traffic and Transportation Engineering*, vol. 6, p. 65-75, ISSN: 2095-7564, doi: 10.1016/j.jtte.2018.10.007

Briseghella B, Colasanti V, Fenu L, Nuti C, Spacone E, Varum H (2020). Seismic Analysis by Macroelements of Fujian Hakka Tulous, Chinese Circular Earth Constructions Listed in the UNESCO World Heritage List. *International Journal of Architectural Heritage*. Vol. 14(10) p. 1551-1566, ISSN: 1558-3058, doi: 10.1080/15583058.2019.1618973

Fenu L, Briseghella B, Marano GC (2019). Simplified method to design laterally loaded piles with optimum shape and length. *Structural Engineering and Mechanics*, vol. 71, p. 119-129, ISSN: 1225-4568, doi: 10.12989/sem.2019.71.2.119

Huang W, Fenu L, Chen B, Briseghella B. (2018). Experimental study on joint resistance and failure modes of concrete filled steel tubular (CFST) truss girders. *Journal of Constructional Steel Research*, vol. 141, p. 241-250, ISSN: 0143-974X, doi: 10.1016/j.jcsr.2017.10.020

Fenu L, Briseghella B, Marano GC (2018). Optimum shape and length of laterally loaded piles. *Structural Engineering and Mechanics*, vol. 68, p. 121-130, ISSN: 1225-4568, doi: 10.12989/sem.2018.68.1.121

Briseghella B, Fenu L, Feng Y, Lan C, Mazzarolo E, Zordan T (2017). Piles of optimal shapes in integral abutment bridges. *Journal of Traffic and Transportation Engineering* vol. 4, p. 576-593, ISSN: 2095-7564, doi: 10.1016/j.jtte.2017.11.001

Aymerich F, Fenu L, Francesconi L, Meloni P (2016), Fracture behaviour of a fibre reinforced earthen material under static and impact flexural loading. *Construction and Building Materials*, 109: 109–119.

Fenu L, Forni D, Cadoni E (2016), Dynamic behaviour of cement mortars reinforced with glass and basalt fibres, *Composites Part B: Engineering*, 92: 142-150.

Briseghella B, Fenu L, Feng Y, Lan C, Mazzarolo E, Zordan T (2016). Optimization Indexes to identify the optimal design solution of shell-supported bridges. *Journal of Bridge Engineering (ASCE)* 21 (3), March 2016, Art. N. 04015067..

Parisi F, Asprone D, Fenu L, Prota A (2015) Experimental characterization of Italian composite adobe bricks reinforced with straw fibers. *Composite Structures*, Vol.122, April 2015, 300-307.

Huang W, Fenu L, Chen B, Briseghella B (2015) Experimental study on K-joints of concrete-filled steel tubular truss structures. *Journal of Constructional Steel Research*, Vol. 107, April 2015, 182-193

Briseghella B, Fenu L, Feng Y, Mazzarolo E, Zordan T (2013). Topology optimization of bridges supported by a concrete shell. *Structural Engineering International*, Vol. 23, Issue 3, 285-294. ISSN:1016-8664 doi:10.2749/101686613X13363929988214

Briseghella B, Fenu L, Lan C, Mazzarolo E, Zordan T (2013). An Application of Topological Optimization to Bridge Design . *Journal of Bridge Engineering (ASCE)*, Vol. 18, Issue 8 , 790-800, ISSN: 1084-0702, doi:10.1061/(ASCE)BE.1943-5592.0000416

Aymerich F, Fenu L, Meloni P (2012). Effect of reinforcing wool fibres on fracture and energy absorption properties of an earthen material. *Construction and Building Materials*, vol. 27, p. 66-72, ISSN: 0950-0618, doi:10.1016/j.conbuildmat.2011.08.008

Cadoni E, Fenu L, Forni D (2012). Strain rate behaviour in tension of austenitic stainless steel used for reinforcing bars. *Construction and Building Materials*, vol. 35, p. 399-407, ISSN: 0950-0618, doi: 10.1016/j.conbuildmat.2012.04.081.

Fenu L (2009). Notched columns made of quasi-brittle materials: stability analysis by means of R-curves. *Studi e Ricerche, Studies and Researches, Milan Technical University*, vol. 29, p. 193-216, ISSN: 1121-6069

Alcuni altri articoli sul *conceptual design* dei ponti

Fenu L, Congiu E, Briseghella B, Marano GC (2017) Ponte in curva sorretto da gusci anticlastici speculari in cemento armato progettati con l'uso del metodo TNA (Thrust Network Analysis). *Structural – Speciale Ponti*, N. 209 (1).

Fenu L, Siviero E, Briseghella B, Zordan T (2009). *Funzione, struttura e architettura nell'arte di fare i ponti. Le Strade*, vol. 6, p. 92-101, ISSN: 0373-2916

Cossu GP, Fenu L (2007). *Architettura e struttura - Le "light structures" di Jörg Schlaich. Le Strade*, vol. 3, p. 123-139, ISSN: 0373-2916

Fenu L, Madama G, Tattoni S (2006). *On the conceptual design of R/C footbridges with the deck supported by shells of minimal surface. Studi e Ricerche, Studies and Researches, Politecnico di Milano*, vol. 26, p. 103-126, ISSN: 1121-6069

Fenu L, Madama G (2005). *A method of shaping R/C shells with heuristic algorithms and with reference to Musmeci's work. Studi e Ricerche, Studies and Researches, Politecnico di Milano*, vol. 25, p. 199-238, ISSN: 1121-6069.

Lista di alcuni articoli pubblicati in Atti di Congressi Nazionali e Internazionali negli ultimi dieci anni

Cassese P, Fenu L, Asprone D, Occhiuzzi A, Parisi F (2021). *Experimental in-plane lateral response of a full-scale adobe masonry wall with opening. In: (a cura di): M. Papadrakakis M. Fragiadakis, Proceedings of the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering. vol. I, p. 2157-2169, Athens:School of Civil Engineering National Technical University of Athens (NTUA) Greece, ISBN: 978-618-85072-5-8, Athens, June 28-30, 2021, doi: 10.7712/120121.8628.18996*

Cassese P, Fenu L, Asprone D, Occhiuzzi A, Parisi F (2021). *Experimental study on the in-plane response of adobe masonry wallets strengthened with textile reinforced matrix systems. In: (a cura di): M. Papadrakakis M. Fragiadakis, Proceedings of the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering. vol. I, p. 1322-1332, Athens:Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA) Greece, ISBN: 978-618-85072-5-8, Athens, June 28-30, 2021, doi: 10.7712/120121.8563.18997*

Giaccu GF, Fenu L, Briseghella B, Nuti C (2021). *Optimum damping of slender monopole towers by gyroscopic stabilizer. In: (a cura di): M. Papadrakakis M. Fragiadakis, Proceedings of the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering. vol. I, p. 1803-1811, ISBN: 978-618-85072-5-8, Athens, June 28-30, 2021, doi: 10.7712/120121.8600.19218*

Fenu L, Marano GC, Congiu E, Briseghella B (2019). *Steel truss-type arches optimization under multi-load cases. In: 20th Congress of IABSE, New York City 2019: The Evolving Metropolis - Report. p. 1339-1345, Zurigo: International Association for Bridge and Structural Engineering (IABSE), ISBN: 978-385748165-9, usa, 201*

Fenu L, Marano GC, Congiu E, Briseghella B (2019). *Optimum design of an arched truss under vertical and horizontal multi-load cases. In: (a cura di): C. Lázaro K.-U. Bletzinger E. Oñate, Form and Force. p. 2081-2088, IASS, Barcelona (Spain), October 7-10, 2019*

Briseghella B, Colasanti V, Fenu L, Huang K, Nuti C, Spacone E, Varum H (2019). *Seismic analysis of Fujian Hakka Tulous. In: Vernacular & Earthen Architecture towards Local Development. Pingyao (China), September 6 – 8*

Briseghella B, Colasanti V, Fenu L, Nuti C, Spacone E, Varum H (2019). *Nonlinear static analysis by finite elements of a Fujian Hakka Tulous. In: IABSE Symposium, Guimaraes 2019: Towards a Resilient Built Environment Risk and*

Asset Management - Report. p. 1140-1147, Zurigo:International Association for Bridge and Structural Engineering (IABSE), Guimaraes (Portogallo), 2019

Aymerich, Fenu L, Loi G (2018). FE analysis of the flexural behavior of cementitious composites using the Concrete Damage Plasticity model. In: (a cura di): Marco Menegotto Marco di Prisco, Il calcestruzzo strutturale oggi: Teoria-Impieghi-Materiali-Tecniche. Roma-Milano:aicap-CTE, ISBN: 978-88-99916-11-4, Lecco, 13-16 Giugno 2018

Fenu L, Congiu E, Huang W, Briseghella B, Chen B (2017). Modi di rottura dei giunti di travi reticolari con aste tubolari. In: CTA 2017 - Le XXVI Giornate italiane della costruzione in acciaio. Salerno; Mediglia (MI):Gechi Edizioni, ISBN: 9788885522008, Venezia, 28-30 Settembre 2017

Briseghella B, Colasanti V, Fenu L, Nuti C, Spacone E, Varum H (2017). Seismic analysis by macro-elements of circular earth constructions: the Chinese Fujian Tulou. In: (a cura di): G. Monti C. Nuti G. Valente, Dynamic Interaction of Soil and Structure (DISS_17) The 5th International Workshop. Rome: DISS_Edition, ISBN: 978-88-940114-2-5, Rome, 19-20 October 2017.

Fenu L, Briseghella B, Congiu E (2016). Curved footbridges supported by a shell obtained as an envelope of thrust-lines. . In: Arch'16 - 6th International Conference on Arch Bridges . Wroclaw University of Technology. Wroclaw (Poland), October 5-7, 2016.

Fenu L, Congiu E., Briseghella B (2016) Curved deck arch bridges supported by an inclined arch. In: Proceedings of the 19th Congress of IABSE Stockholm 2016. Challenges in design and construction of an innovative and sustainable built environment,. Stockholm (Sweden), 21-23 September 2016. International Association for Bridge and Structural Engineering - IABSE, Zurich Switzerland.

Asprone D, Colasanti V, Fenu L, Parisi F, Prota A (2016). Adobe in Sardinia. Static and dynamic behaviour of the earthen material and of adobe constructions. In:Proceedings of the 16-th International Brick and Block Masonry Conference "Masonry in a World of Challenges". London: CRC Press. Taylor & Francis Group, ISBN: 978-1-138-02999-6, Padua (Italy), June 26-30, 2016.

Fa G, He L, Fenu L, Mazzarolo E, Briseghella B, Zordan T (2016). Comparison of direct and iterative methods for model updating of a curved cable-stayed bridge using experimental modal data. In: IABSE Conference, Guangzhou 2016: Bridges and Structures Sustainability - Seeking Intelligent Solutions - Report. p. 538-545, International Association for Bridge and Structural Engineering (IABSE), ISBN: 9783857481420, Guanzhou (China), 2016

Fenu L, Forni D, Cadoni E (2015). Energy absorption at high strain rate of glass fiber reinforced mortars. Proceedings of the 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2011. In: EPJ Web of Conferences. EPJ WEB OF CONFERENCES, vol. 94, EDP Sciences, ISBN: 9782759818174, ISSN: 2101-6275. Lugano (CH), September 7-11, 2015.

Aymerich F, Fenu L, Francesconi L, Meloni P (2015). Mechanical response of a fibre reinforced earthen material under static and impact loadings. Proceedings of the 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2011. In: EPJ Web of Conferences. EPJ WEB OF CONFERENCES, vol. 94, EDP Sciences, ISBN: 9782759818174, ISSN: 2101-6275. Lugano (CH), September 7-11, 2015.

Kruszka L, Moćko W, Fenu L, Cadoni E (2015). Comparative experimental study of dynamic compressive strength of mortar with glass and basalt fibres. Proceedings of the 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2011. In: EPJ Web of Conferences. EPJ Web of Conferences, vol. 94, EDP Sciences, ISBN: 9782759818174, ISSN: 2101-6275. Lugano (CH), September 7-11, 2015.

Fenu L; Huang W; Briseghella B; Chen B (2015) Failure Modes and Resistance of K-Joints of Concrete-Filled Steel Tubular Truss Structures. Atti del XXV Congresso C.T.A. "Giornate Italiane delle Costruzioni in Acciaio". pp 8. Salerno 1-3 Ottobre 2015. dal 01-10-2015 al 03-10-2015

Fenu L, Briseghella B, Zordan T (2015). *Curved shell-supported footbridges*. In: *Proceedings of the 10th International Conference IABSE 2015. Structural Engineering—Providing Solutions to Global Challenges*. Geneva (Switzerland), 21-22 September 2015. pp. 394-401, International Association for Bridge and Structural Engineering - IABSE, Zurich Switzerland. ISBN: 978-3-85748-140-6.

Fenu L, Serra C, Briseghella B, Zordan T (2014). *Shell supported curved footbridges*. In: *Proceedings of the 10th International Conference Footbridges 2014. Past, present and future*. London:Hemming Information Services, ISBN: 978-0-7079-7139-1, London, July, 16-18 2014

Zordan T, Mazzarolo E, Briseghella B, Chen B-C, Feng Y, Fenu L (2014). *Optimization of Calatrava Bridge in Venice*. In: (a cura di): Chen, A; Frangopol, DM; Ruan, X, *Bridge Maintenance, Safety, Management and Life Extension - Proceedings of the 7th International Conference of Bridge Maintenance, Safety and Management, IABMAS 2014*. p. 1863-1869, Boca Raton:CRC Press-Taylor & Francis Group, ISBN: 978-113800103-9, Shanghai, July, 7-11 2014

Huang W, Fenu L, Chen B, Liu J, Briseghella B (2012). *Resistance of Welded Joints of Concrete Filled Steel Tubular Truss Girders*. In: *Proceedings of the 10th International Conference on Advances in Steel Concrete Composite and Hybrid Structures (ASCCS 2012)*. Singapore, 2-4 Luglio 2012, Singapore:Research Publishing, ISBN: 978-981-07-2616-4, doi: 10.3850/978-981-07-2615-7_067

Briseghella B, Feng Y, Fenu L, Siviero E, Zordan T, Chen B (2012). *Topology optimization with eigenfrequency of concrete shell bridges*. In: *5th International Conference on New Dimensions in Bridges, Flyovers, Overpasses & Elevated Structures*. Wuyishan (China), 28-29 July 2012, Singapore:CI-Premier Pte Ltd.

Huang W, Fenu L, Briseghella B, Chen B, Zordan T (2012). *Static behaviour of a prestressed stone arch footbridge*. In: *5th International Conference on New Dimensions in Bridges, Flyovers, Overpasses & Elevated Structures*. Wuyishan (China), 28-29 July 2012, Singapore:CI-Premier Pte Ltd.

Briseghella B, Fenu L, Huang W, Zordan T (2011). *Tensegrity Footbridges with Arch and Straight Deck: Comparison of their Structural Behaviour*. In: *Proceedings of the 4th International Conference "Footbridge 2011" - Attractive structures at reasonable costs*. Wroctlaw, Poland, 6-8 July 2011, Wroctlaw:Dolnoslaskie Wydawnictwo Edukacyjne, ISBN: 978-83-7125-204-4

Briseghella B, Fenu L, Huang W, Zordan T (2011). *Innovative Stone Arch Footbridges*. In: *IABSE-IASS Symposium 2011 - Taller, Longer, Lighter*. London:Hemming Group Ltd, 2011, ISBN: 978-0-7079-7122-3, London, September 20-23, 2011

Programmi di ricerca acquisiti attraverso bandi competitivi negli ultimi dieci anni

2020-2023: Programma di ricerca di dottorato "Costruzione efficiente e intelligente di gusci in cemento armato". Borsa di ricerca del XXXV Ciclo di dottorato finanziato dal MIUR attraverso il Programma Operativo Nazionale in Ricerca e Innovazione (PON RI) 2014-2020. Presentazione del progetto e responsabilità scientifica del programma di ricerca dottorale.

2017-2020: Programma di ricerca di dottorato "Composite steel-concrete constructional truss systems". Borsa di ricerca del XXXIII Ciclo di dottorato finanziato dal MIUR attraverso il Programma Operativo Nazionale in Ricerca e Innovazione (PON RI) 2014-2020. Presentazione del progetto e responsabilità scientifica (col Prof. Giuseppe Carlo Marano) del programma di ricerca dottorale.

2019-2021: Programma di ricerca "Ottimizzazione strutturale ed energetica di edifici in contesti urbani: un approccio integrato", finanziato dalla Regione Sardegna, LR n.7/2007, "Fondo di Sviluppo e Coesione 2014-2020", Anno 2017. Proponente del Programma di Ricerca e membro dell'Unità di ricerca.

2015-2018: Programma di ricerca "Tecniche murarie tradizionali: conoscenza per la conservazione e il miglioramento prestazionale", finanziato dalla Regione Sardegna, LR n.7/2007, Anno 2013. Responsabile dell'Unità di Ricerca di Tecnica delle costruzioni.

2014-2016: Responsabile scientifico del Programma di ricerca coordinato dall'Università di Cagliari e effettuato in collaborazione con le unità di ricerca dell'Università di Napoli Federico II (Proff. Domenico Asprone, Fulvio Parisi e Andrea Prota), e dell'Università SUPSI di Lugano, Svizzera (Prof Ezio Cadoni) sulla Resistenza Sismica di edifici in terra cruda, finanziato dalla Regione Sardegna, LR n.7/2007, anno 2011, tender N. 3.

2010-2012: Programma di ricerca MIUR/PRIN 2008 "Vetro strutturale monolitico; strutture di vetro stratificato e di vetro armato. Procedure sperimentali e teoriche per la quantificazione della sicurezza ai sensi delle normative di ultima generazione". Membro dell'Unità di ricerca dell'Università IUAV di Venezia.

Attività in Corsi di Dottorato di Ricerca dell'Università di Cagliari

- 2007-2015: Membro del Collegio di dottorato del Corso di dottorato in Architettura.

- 2017- : Membro del Collegio di dottorato del Corso di dottorato in.

Corso dottorale tenuto nel Corso di dottorato in Ingegneria Civile e Architettura.

-2021: Basis of Structural Design (con Eleonora Congiu)

2012-: Membro fondatore e *Research Fellow* del SIBERC, Sustainable and Innovative Bridge Engineering Research Center, Fuzhou University, Fuzhou (Cina).

Membro del Comitato Scientifico di varie conferenze internazionali e di comitati editoriali di riviste scientifiche internazionali.

Attività didattica nei seguenti Corsi di Laurea triennale e Master nell' Università di Cagliari:

- Tecnica delle Costruzioni (10 crediti e 5 crediti) in Corsi di Laurea triennale e Magistrale di Architettura e Ingegneria edile-Architettura.

- Strutture di fondazione (5 crediti) nel Corso di Laurea Magistrale in Ingegneria Civile.

- Costruzioni in acciaio (6 crediti) nel Corso di Laurea Magistrale in Ingegneria Civile.

- Architettura Strutturale (4 crediti), nel Corso di Laurea Magistrale in Architettura.

Principali progetti strutturali

2013-2021 – Progetto preliminare, definitivo ed esecutivo per il consolidamento e riuso del Presidio delle Cliniche Pediatriche e "Macciotta" come Nuovo Polo Dipartimentale e Didattico dell'Università di Cagliari. Committente: Università di Cagliari. Progetto pubblicato negli atti dei Colloqui.AT.e 2017. Demolition or Reconstruction?. Ancona, Ottobre 2017.

2011 – Progetto strutturale per il restauro architettonico (con C. Giannattasio) e il consolidamento strutturale del Castello di Villasor. Committente: Comune di Villasor.

2006 - Progetto strutturale (con S. Tattoni) del centro intermodale (stazione ferroviaria e bus) di Carbonia. Progetto architettonico: Luigi Snozzi. Progetto pubblicato nella rivista di architettura Domus e sulla rivista L'Industria Italiana delle Costruzioni. Committente: Comune di Carbonia.

2005 - Progetto strutturale e di consolidamento (con S. Tattoni, F. Mistretta e L. Pani) per il riuso dell'edificio delle exTornerie e Forge della miniera di Serbariu a Carbonia. Committente: Comune di Carbonia.

Principali lavori di consulenza

2017 – Piano delle indagini in situ e analisi dei dati delle strutture murarie e in cemento armato delle ex-cliniche pediatrica e “Macciotta” in Cagliari. Committente: Università di Cagliari.

2009 – Verifica della stabilità strutturale degli edifici multipiano “Del Favero” nel quartiere di S.Elia a Cagliari. Committente: Azienda Regionale per l'Edilizia Abitativa (AREA, ex IACP), Cagliari.

2006 - Verifica della stabilità strutturale e controllo delle giunzioni saldate delle strutture in acciaio del Palazzetto dello Sport di Pula, presso Cagliari. Committente: Comune di Pula.

2004 - Verifica della stabilità strutturale delle strutture in acciaio ed in cemento armato del Palazzetto dello Sport di Elmas, presso Cagliari. Committente: Comune di Elmas.

Principali mostre organizzate e curate nel campo dell'Architettura Strutturale

“Ponteggiando” sull’opera di Enzo Siviero, mostra tenutasi a Cagliari nella Galleria Nazionale di Cagliari della “Cittadella dei Musei”, 28 Maggio – 18 Giugno, 2010.

“Light Structures - Jorg Schlaich, Rudolf Bergermann.” da DAM, Deutsche Architektur Museum, mostra tenutasi a Cagliari, nello “Spazio San Pancrazio” della “Cittadella dei Musei”, 13 Ottobre - 4 Novembre, 2006.

SHORT CURRICULUM VITAE

Luigi Fenu

SURNAME Fenu

NAME Luigi

Actual position: Associate Professor of Structural Design

Affiliation and official address: University of Cagliari

Department of Civil Engineering, Environment Engineering, and Architecture.

Via Marengo 2, 09123 Cagliari, Italy.

Telefono: (+39) 070 6755638

Fax: (+39) 070 6755418

Email: lfenu@unica.it

Place of birth: Cagliari

Nationality: Italian

Educational qualification: Master Degree in Civil Engineering, University of Cagliari, 110/110 with high distinction.

Career

2019-: Associate Professor of the University of Cagliari, Faculty of Engineering and Architecture

2012-: Member and Research Fellow of the Research Center SIBERC on Innovative and Sustainable Bridges of Fujian Province, Fuzhou University, Fuzhou (Popular Republic of China).

2010-2019: Aggregate Professor of the University of Cagliari, Faculty of Engineering and Architecture

2001-2019: Assistant Professor of the University of Cagliari, Faculty of Engineering and Architecture

1996-2000: Coordinator of the Laboratory of the Department of Structural Engineering of the University of Cagliari;

1988-1996: Technical Engineer of the Department of Structural Engineering of the University of Cagliari

1984-: Consultant Structural Engineer

Research fields

(i) Present research fields - Main

- Conceptual design and structural optimization (with particular reference to bridges); bridges with innovative structures (shell-supported bridges, curved bridges);
- Structural behaviour of structures in quasi-brittle materials with particular reference to earth masonry structures. Modelling of masonry stone and adobe structures;
- Earthquake response of earth buildings;
- Failure modes of joints of tubular steel structures, Circular Hollow Steel Structures (CHSS) and Concrete Filled Steel Tubular (CFST) structures;
- Analysis of the seismic response of steel structures with pre-tensioned braces;
- Modelling shear lag effects in concrete slabs of steel-concrete composite decks of cable-stayed bridges;
- Experimental and analytical study of timber composite floors and of their joints.

(ii) Present research fields - Collateral:

- Long-term behaviour of concrete bridges;
- Optimization of foundation piles subjected to lateral loads, in particular in integral abutment bridges;
- Dynamic behaviour of construction materials;

- Detail optimization of concrete structures;
- Experimental and numerical study on cementitious composites

- Papers on indexed Peer Review Journals (Scopus and WoS):

more than 30

- Papers published in the Proceedings of International Conferences:

more than 50

List of articles published in international journals in the last ten years

Fenu L, Congiu E, Deligia M, Giaccu GF, Hosseini A, Serra M. (2021) Buckling analysis of piles in multi-layered soils. Applied Sciences, vol. 11(22), 10624. ISSN: 2076-3417.

Briseghella B, Fa G, Aloisio A, Pasca D, He L, Fenu L, Gentile C (2021). Dynamic behaviour of the Curved Cable-Stayed Bridge in Venice under different design choices. Structures, vol. 34, p. 4669–4681. ISSN: 2352-0124, doi: 10.1016/j.istruc.2021.10.060

Fenu L, Colasanti V, Briseghella B, Nuti C, Varum H (in press) Analisi non lineare con macroelementi della risposta alle azioni orizzontali di edifici in muratura di forma circolare. ArcHistoR, Special Issue. ISSN: 2384-889, doi: 10.3390/app112210624.

Congiu E, Fenu L, Briseghella B (2021). Comparison of form-finding methods to shape concrete shells for curved footbridges. Structural Engineering International, vol. 31(4), p. 527-535, ISSN: 1016-8664, doi: 10.1080/10168664.2021.1878974

Cassese P, Balestrieri C, Fenu L, Asprone D, Parisi F (2021). In-plane shear behaviour of adobe masonry wallets strengthened with textile reinforced mortar. Construction and Building Materials, vol. 306, 124832, ISSN: 0950-0618, doi: 10.1016/j.conbuildmat.2021.124832

Fenu L, Colasanti V, Parisi F (2021). Numerical simulation of shaking table test on an adobe masonry building through nonlinear macro-element analysis. International Journal of Masonry Research and Innovation, vol. 1, ISSN: 2056-9459, doi: 10.1504/IJMRI.2021.10040995

Giaccu GF, Solinas D, Briseghella B, Fenu L (2021). Time-dependent analysis of precast segmental bridges. International Journal of Concrete Structures and Materials, vol. 15, p. 1-21, ISSN: 1976-0485, doi: 10.1186/s40069-020-00445-6

Feng Y, Lan C, Briseghella B, Fenu L, Zordan T (2022). Cable Optimization of a Cable-Stayed Bridge Based on Genetic Algorithm and Influence Matrix Method. Engineering Optimization, vol 54(1), p. 20-39, ISSN: 0305215X, 10290273. doi: 10.1080/0305215X.2020.1850709

Fenu L, Congiu E, Marano GC, Briseghella B (2020). Shell-supported footbridges. Curved and Layered Structures, vol. 7, ISSN: 2353-7396

Feng Y., Wang C., Briseghella B., Fenu L., Zordan T. (2020). Structural Optimization of a Steel Arch Bridge with Genetic Algorithm. Structural Engineering International, p. 1-10, ISSN: 1016-8664, doi: 10.1080/10168664.2020.1773373

Fenu L, Colasanti V, Congiu E, Giaccu GF, Trentadue F, Briseghella B (2019). A Heuristic Approach to Identify the Steel Grid Direction of R/C Slabs Using the Yield-Line Method for Analysis. Advances in Civil Engineering, vol. 2019, p. 1-15, ISSN: 1687-8086, doi: 10.1155/2019/6017146

Fenu L, Congiu E, Lavorato D, Briseghella B, Marano GC (2019). Curved footbridges supported by a shell obtained through thrust network analysis. *Journal of Traffic and Transportation Engineering*, vol. 6, p. 65-75, ISSN: 2095-7564, doi: 10.1016/j.jtte.2018.10.007

Briseghella B, Colasanti V, Fenu L, Nuti C, Spacone E, Varum H (2020). Seismic Analysis by Macroelements of Fujian Hakka Tulous, Chinese Circular Earth Constructions Listed in the UNESCO World Heritage List. *International Journal of Architectural Heritage*. Vol. 14(10) p. 1551-1566, ISSN: 1558-3058, doi: 10.1080/15583058.2019.1618973

Fenu L, Briseghella B, Marano GC (2019). Simplified method to design laterally loaded piles with optimum shape and length. *Structural Engineering and Mechanics*, vol. 71, p. 119-129, ISSN: 1225-4568, doi: 10.12989/sem.2019.71.2.119

Huang W, Fenu L, Chen B, Briseghella B. (2018). Experimental study on joint resistance and failure modes of concrete filled steel tubular (CFST) truss girders. *Journal of Constructional Steel Research*, vol. 141, p. 241-250, ISSN: 0143-974X, doi: 10.1016/j.jcsr.2017.10.020

Fenu L, Briseghella B, Marano GC (2018). Optimum shape and length of laterally loaded piles. *Structural Engineering and Mechanics*, vol. 68, p. 121-130, ISSN: 1225-4568, doi: 10.12989/sem.2018.68.1.121

Briseghella B, Fenu L, Feng Y, Lan C, Mazzarolo E, Zordan T (2017). Piles of optimal shapes in integral abutment bridges. *Journal of Traffic and Transportation Engineering* vol. 4, p. 576-593, ISSN: 2095-7564, doi: 10.1016/j.jtte.2017.11.001

Aymerich F, Fenu L, Francesconi L, Meloni P (2016), Fracture behaviour of a fibre reinforced earthen material under static and impact flexural loading. *Construction and Building Materials*, 109: 109–119.

Fenu L, Forni D, Cadoni E (2016), Dynamic behaviour of cement mortars reinforced with glass and basalt fibres, *Composites Part B: Engineering*, 92: 142-150.

Briseghella B, Fenu L, Feng Y, Lan C, Mazzarolo E, Zordan T (2016). Optimization Indexes to identify the optimal design solution of shell-supported bridges. *Journal of Bridge Engineering (ASCE)* 21 (3), March 2016, Art. N. 04015067..

Parisi F, Asprone D, Fenu L, Prota A (2015) Experimental characterization of Italian composite adobe bricks reinforced with straw fibers. *Composite Structures*, Vol.122, April 2015, 300-307.

Huang W, Fenu L, Chen B, Briseghella B (2015) Experimental study on K-joints of concrete-filled steel tubular truss structures. *Journal of Constructional Steel Research*, Vol. 107, April 2015, 182-193

Briseghella B, Fenu L, Feng Y, Mazzarolo E, Zordan T (2013). Topology optimization of bridges supported by a concrete shell. *Structural Engineering International*, Vol. 23, Issue 3, 285-294. ISSN:1016-8664 doi:10.2749/101686613X13363929988214

Briseghella B, Fenu L, Lan C, Mazzarolo E, Zordan T (2013). An Application of Topological Optimization to Bridge Design . *Journal of Bridge Engineering (ASCE)*, Vol. 18, Issue 8 , 790-800, ISSN: 1084-0702, doi:10.1061/(ASCE)BE.1943-5592.0000416

Aymerich F, Fenu L, Meloni P (2012). Effect of reinforcing wool fibres on fracture and energy absorption properties of an earthen material. *Construction and Building Materials*, vol. 27, p. 66-72, ISSN: 0950-0618, doi:10.1016/j.conbuildmat.2011.08.008

Cadoni E, Fenu L, Forni D (2012). Strain rate behaviour in tension of austenitic stainless steel used for reinforcing bars. *Construction and Building Materials*, vol. 35, p. 399-407, ISSN: 0950-0618, doi: 10.1016/j.conbuildmat.2012.04.081.

Fenu L (2009). Notched columns made of quasi-brittle materials: stability analysis by means of R-curves. *Studi e Ricerche, Studies and Researches, Milan Technical University*, vol. 29, p. 193-216, ISSN: 1121-6069

Some other journal articles on conceptual design

Fenu L, Congiu E, Briseghella B, Marano GC (2017) Ponte in curva sorretto da gusci anticlastici speculari in cemento armato progettati con l'uso del metodo TNA (Thrust Network Analysis). *Structural – Speciale Ponti*, N. 209 (1).

Fenu L, Siviero E, Briseghella B, Zordan T (2009). *Funzione, struttura e architettura nell'arte di fare i ponti. Le Strade*, vol. 6, p. 92-101, ISSN: 0373-2916

Cossu GP, Fenu L (2007). *Architettura e struttura - Le "light structures" di Jörg Schlaich. Le Strade*, vol. 3, p. 123-139, ISSN: 0373-2916

Fenu L, Madama G, Tattoni S (2006). *On the conceptual design of R/C footbridges with the deck supported by shells of minimal surface. Studi e Ricerche, Studies and Researches, Politecnico di Milano*, vol. 26, p. 103-126, ISSN: 1121-6069

Fenu L, Madama G (2005). *A method of shaping R/C shells with heuristic algorithms and with reference to Musmeci's work. Studi e Ricerche, Studies and Researches, Politecnico di Milano*, vol. 25, p. 199-238, ISSN: 1121-6069.

List of some articles published in Conference Proceedings in the last ten years

Cassese P, Fenu L, Asprone D, Occhiuzzi A, Parisi F (2021). *Experimental in-plane lateral response of a full-scale adobe masonry wall with opening. In: (a cura di): M. Papadrakakis M. Fragiadakis, Proceedings of the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering. vol. I, p. 2157-2169, Athens:School of Civil Engineering National Technical University of Athens (NTUA) Greece, ISBN: 978-618-85072-5-8, Athens, June 28-30, 2021, doi: 10.7712/120121.8628.18996*

Cassese P, Fenu L, Asprone D, Occhiuzzi A, Parisi F (2021). *Experimental study on the in-plane response of adobe masonry wallets strengthened with textile reinforced matrix systems. In: (a cura di): M. Papadrakakis M. Fragiadakis, Proceedings of the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering. vol. I, p. 1322-1332, Athens:Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA) Greece, ISBN: 978-618-85072-5-8, Athens, June 28-30, 2021, doi: 10.7712/120121.8563.18997*

Giaccu GF, Fenu L, Briseghella B, Nuti C (2021). *Optimum damping of slender monopole towers by gyroscopic stabilizer. In: (a cura di): M. Papadrakakis M. Fragiadakis, Proceedings of the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering. vol. I, p. 1803-1811, ISBN: 978-618-85072-5-8, Athens, June 28-30, 2021, doi: 10.7712/120121.8600.19218*

Fenu L, Marano GC, Congiu E, Briseghella B (2019). *Steel truss-type arches optimization under multi-load cases. In: 20th Congress of IABSE, New York City 2019: The Evolving Metropolis - Report. p. 1339-1345, Zurigo: International Association for Bridge and Structural Engineering (IABSE), ISBN: 978-385748165-9, usa, 201*

Fenu L, Marano GC, Congiu E, Briseghella B (2019). *Optimum design of an arched truss under vertical and horizontal multi-load cases. In: (a cura di): C. Lázaro K.-U. Bletzinger E. Oñate, Form and Force. p. 2081-2088, IASS, Barcelona (Spain), October 7-10, 2019*

Briseghella B, Colasanti V, Fenu L, Huang K, Nuti C, Spacone E, Varum H (2019). *Seismic analysis of Fujian Hakka Tulous. In: Vernacular & Earthen Architecture towards Local Development. Pingyao (China), September 6 – 8*

Briseghella B, Colasanti V, Fenu L, Nuti C, Spacone E, Varum H (2019). *Nonlinear static analysis by finite elements of a Fujian Hakka Tulous. In: IABSE Symposium, Guimaraes 2019: Towards a Resilient Built Environment Risk and*

Asset Management - Report. p. 1140-1147, Zurigo:International Association for Bridge and Structural Engineering (IABSE), Guimaraes (Portogallo), 2019

Aymerich, Fenu L, Loi G (2018). FE analysis of the flexural behavior of cementitious composites using the Concrete Damage Plasticity model. In: (a cura di): Marco Menegotto Marco di Prisco, Il calcestruzzo strutturale oggi: Teoria-Impieghi-Materiali-Tecniche. Roma-Milano:aicap-CTE, ISBN: 978-88-99916-11-4, Lecco, 13-16 Giugno 2018

Fenu L, Congiu E, Huang W, Briseghella B, Chen B (2017). Modi di rottura dei giunti di travi reticolari con aste tubolari. In: CTA 2017 - Le XXVI Giornate italiane della costruzione in acciaio. Salerno; Mediglia (MI):Gechi Edizioni, ISBN: 9788885522008, Venezia, 28-30 Settembre 2017

Briseghella B, Colasanti V, Fenu L, Nuti C, Spacone E, Varum H (2017). Seismic analysis by macro-elements of circular earth constructions: the Chinese Fujian Tulou. In: (a cura di): G. Monti C. Nuti G. Valente, Dynamic Interaction of Soil and Structure (DISS_17) The 5th International Workshop. Rome: DISS_Edition, ISBN: 978-88-940114-2-5, Rome, 19-20 October 2017.

Fenu L, Briseghella B, Congiu E (2016). Curved footbridges supported by a shell obtained as an envelope of thrust-lines. . In: Arch'16 - 6th International Conference on Arch Bridges . Wroclaw University of Technology. Wroclaw (Poland), October 5-7, 2016.

Fenu L, Congiu E., Briseghella B (2016) Curved deck arch bridges supported by an inclined arch. In: Proceedings of the 19th Congress of IABSE Stockholm 2016. Challenges in design and construction of an innovative and sustainable built environment,. Stockholm (Sweden), 21-23 September 2016. International Association for Bridge and Structural Engineering - IABSE, Zurich Switzerland.

Asprone D, Colasanti V, Fenu L, Parisi F, Prota A (2016). Adobe in Sardinia. Static and dynamic behaviour of the earthen material and of adobe constructions. In:Proceedings of the 16-th International Brick and Block Masonry Conference "Masonry in a World of Challenges". London: CRC Press. Taylor & Francis Group, ISBN: 978-1-138-02999-6, Padua (Italy), June 26-30, 2016.

Fa G, He L, Fenu L, Mazzarolo E, Briseghella B, Zordan T (2016). Comparison of direct and iterative methods for model updating of a curved cable-stayed bridge using experimental modal data. In: IABSE Conference, Guangzhou 2016: Bridges and Structures Sustainability - Seeking Intelligent Solutions - Report. p. 538-545, International Association for Bridge and Structural Engineering (IABSE), ISBN: 9783857481420, Guanzhou (China), 2016

Fenu L, Forni D, Cadoni E (2015). Energy absorption at high strain rate of glass fiber reinforced mortars. Proceedings of the 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2011. In: EPJ Web of Conferences. EPJ WEB OF CONFERENCES, vol. 94, EDP Sciences, ISBN: 9782759818174, ISSN: 2101-6275. Lugano (CH), September 7-11, 2015.

Aymerich F, Fenu L, Francesconi L, Meloni P (2015). Mechanical response of a fibre reinforced earthen material under static and impact loadings. Proceedings of the 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2011. In: EPJ Web of Conferences. EPJ WEB OF CONFERENCES, vol. 94, EDP Sciences, ISBN: 9782759818174, ISSN: 2101-6275. Lugano (CH), September 7-11, 2015.

Kruszka L, Moćko W, Fenu L, Cadoni E (2015). Comparative experimental study of dynamic compressive strength of mortar with glass and basalt fibres. Proceedings of the 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2011. In: EPJ Web of Conferences. EPJ Web of Conferences, vol. 94, EDP Sciences, ISBN: 9782759818174, ISSN: 2101-6275. Lugano (CH), September 7-11, 2015.

Fenu L; Huang W; Briseghella B; Chen B (2015) Failure Modes and Resistance of K-Joints of Concrete-Filled Steel Tubular Truss Structures. Atti del XXV Congresso C.T.A. "Giornate Italiane delle Costruzioni in Acciaio". pp 8. Salerno 1-3 Ottobre 2015. dal 01-10-2015 al 03-10-2015

Fenu L, Briseghella B, Zordan T (2015). *Curved shell-supported footbridges*. In: *Proceedings of the 10th International Conference IABSE 2015. Structural Engineering—Providing Solutions to Global Challenges*. Geneva (Switzerland), 21-22 September 2015. pp. 394-401, International Association for Bridge and Structural Engineering - IABSE, Zurich Switzerland. ISBN: 978-3-85748-140-6.

Fenu L, Serra C, Briseghella B, Zordan T (2014). *Shell supported curved footbridges*. In: *Proceedings of the 10th International Conference Footbridges 2014. Past, present and future*. London:Hemming Information Services, ISBN: 978-0-7079-7139-1, London, July, 16-18 2014

Zordan T, Mazzarolo E, Briseghella B, Chen B-C, Feng Y, Fenu L (2014). *Optimization of Calatrava Bridge in Venice*. In: (a cura di): Chen, A; Frangopol, DM; Ruan, X, *Bridge Maintenance, Safety, Management and Life Extension - Proceedings of the 7th International Conference of Bridge Maintenance, Safety and Management, IABMAS 2014*. p. 1863-1869, Boca Raton:CRC Press-Taylor & Francis Group, ISBN: 978-113800103-9, Shanghai, July, 7-11 2014

Huang W, Fenu L, Chen B, Liu J, Briseghella B (2012). *Resistance of Welded Joints of Concrete Filled Steel Tubular Truss Girders*. In: *Proceedings of the 10th International Conference on Advances in Steel Concrete Composite and Hybrid Structures (ASCCS 2012)*. Singapore, 2-4 Luglio 2012, Singapore:Research Publishing, ISBN: 978-981-07-2616-4, doi: 10.3850/978-981-07-2615-7_067

Briseghella B, Feng Y, Fenu L, Siviero E, Zordan T, Chen B (2012). *Topology optimization with eigenfrequency of concrete shell bridges*. In: *5th International Conference on New Dimensions in Bridges, Flyovers, Overpasses & Elevated Structures*. Wuyishan (China), 28-29 July 2012, Singapore:CI-Premier Pte Ltd.

Huang W, Fenu L, Briseghella B, Chen B, Zordan T (2012). *Static behaviour of a prestressed stone arch footbridge*. In: *5th International Conference on New Dimensions in Bridges, Flyovers, Overpasses & Elevated Structures*. Wuyishan (China), 28-29 July 2012, Singapore:CI-Premier Pte Ltd.

Briseghella B, Fenu L, Huang W, Zordan T (2011). *Tensegrity Footbridges with Arch and Straight Deck: Comparison of their Structural Behaviour*. In: *Proceedings of the 4th International Conference "Footbridge 2011" - Attractive structures at reasonable costs*. Wroctlaw, Poland, 6-8 July 2011, Wroctlaw:Dolnoslaskie Wydawnictwo Edukacyjne, ISBN: 978-83-7125-204-4

Briseghella B, Fenu L, Huang W, Zordan T (2011). *Innovative Stone Arch Footbridges*. In: *IABSE-IASS Symposium 2011 - Taller, Longer, Lighter*. London:Hemming Group Ltd, 2011, ISBN: 978-0-7079-7122-3, London, September 20-23, 2011

Research Programs achieved through competitive tenders in the last ten years

2020-2023: PhD Research Program "Efficient and intelligent construction of reinforced concrete shells". PhD grant of the XXXV Italian PhD Cycle funded by the Italian Ministry of University and Research (MIUR) through the National Operational Program in Research and Innovation (PON RI) 2014-2020. Design and Scientific coordination of the PhD Research Program.

2017-2020: PhD Research Program "Composite steel-concrete constructional truss systems". PhD grant of the XXXIII Italian PhD Cycle funded by the Italian Ministry of University and Research (MIUR) through the National Operational Program in Research and Innovation (PON RI) 2014-2020. Design and Scientific coordination (with Prof. Giuseppe Carlo Marano) of the PhD Research Program.

2019-2021: Research Program "Structural and energetic optimization of buildings in urban contexts: an integrated approach", funded by the Sardinian Region, LR n.7/2007, "Fondo di Sviluppo e Coesione 2014-2020", Year 2017. Proposer of the Research Program and member of the Research Unit.

2015-2018: Research Program "Traditional masonry technics: knowledge for conservation and performance improving", funded by the Sardinian Region, LR n.7/2007, Year 2013. Head of the Research Unit on Structural Design.

2014-2016: Head of the Research Program coordinated by the University of Cagliari and carried out in collaboration with the research units of the University of Naples Federico II (Proff. Domenico Asprone, Fulvio Parisi and Andrea Prota), and the SUPSI University of Lugano, Switzerland (Prof Ezio Cadoni) on the Seismic resistance of earth buildings, funded by the Sardinian Region, LR n.7/2007, year 2011, tender N. 3.

2010-2012: Research Program MIUR/PRIN 2008 "Structural glass; structures in layered glass and in reinforced glass. Experimental and theoretical procedures for safety assessment on the basis of the last generation codes". Member of the Research Unit of the IUAV University of Venice.

Activity in PhD Courses in the University of Cagliari

- 2007-2015: Committee Member of the Ph.D. Course in Architecture
- 2017- : Committee Member of the Ph.D. Course in Civil Engineering and Architecture

Doctoral Course held in the Ph.D. Course in Civil Engineering and Architecture
-2021: Basis of Structural Design (with Eleonora Congiu)

2012-: Foreign Founder and Research Fellow of the SIBERC, Sustainable and Innovative Bridge Engineering Research Center, Fuzhou University, Fuzhou (China).

Member of Scientific Committees of International Conferences and of the Editorial Board of International Scientific Journals

Teaching activity in the following Bachelor and Master Courses in the University of Cagliari:

- Structural Design (10 credits and 5 credits) in Master and in Bachelor Courses of Architecture and Building Architecture
- Foundation structures (5 credits) in the Master Course of Civil Engineering
- Design of Steel Structures (6 credits) in the Master Course of Civil Engineering
- Structural Architecture (4 credits), in the Master Course of Architecture.

Main structural projects

2013-2021 –Structural design to retrofit and upgrade to comply with Italian Building Code the masonry building of the Children’s Hospital “Macciotta” in Cagliari. Project published on the architectural journal TEMA. Client: University of Cagliari

2011 – Structural design and working plan for architectural restoration (with C. Giannattasio) and structural retrofitting of Villasor Castle near Cagliari. Client: Villasor Municipality.

2006 - Structural design and working plan (with S. Tattoni) of the Railway Station of Carbonia. Architectural design: Luigi Snozzi. Project published on the architectural journal Domus. Client: Carbonia Municipality.

2005 - Structural design and working plan (with S. Tattoni, F. Mistretta e L. Pani) for the reuse of the building exTornerie e Forge of Serbariu mine in Carbonia. Client: Carbonia Municipality.

Main works as Structural Engineering Consultant

2017 – Planning the in-situ investigation and analysis of the in situ survey data of the masonry and R/C structures of the Children’s Hospital “Macciotta” in Cagliari. Client: University of Cagliari

2009 – Checking structural stability of the Multistore Buildings “Del Favero” in S.Elia area in Cagliari. Client: Azienda Regionale per l’Edilizia Abitativa (AREA, ex IACP), Cagliari.

2006 - Checking structural stability of the steel structures (and non-destructive controls of the welded joints) of Pula Sports Arena near Cagliari. Client: Pula Municipality.

2004 - Checking structural stability of concrete and steel structures of Elmas Sports Arena near Cagliari. Client: Elmas Municipality.

Main works as organizer and curator of exhibitions on Structural Architecture

“Light Structures - Jorg Schlaich, Rudolf Bergermann.” from DAM, Deutsche Architektur Museum, held in Cagliari, in “Spazio San Pancrazio” of the “Cittadella dei Musei”, October 13 - November 4, 2006.

“Ponteggiando” on Enzo Siviero’s work, held in the National Gallery of Cagliari of the “Cittadella dei Musei”, May 28 - June 18, 2010.