

## **Gabriele Masera**

Building Engineer, MEng PhD

Born on November 27<sup>th</sup>, 1973 in Busto Arsizio (Italy), Italian citizen.

Lives in Milan, Italy.

Earned a Masters degree in Building Engineering from Politecnico di Milano, Italy, in 1999.

Earned a PhD degree in Building Engineering from Politecnico di Milano, Italy, in 2003, with a dissertation on innovative construction technologies for energy-efficient residential buildings.

### **Research and teaching activity**

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From December 30<sup>th</sup>, 2002, to December 21<sup>st</sup>, 2010, he was researcher at the BEST (Built Environment Science and Technology) Department of Politecnico di Milano, School of Architectural Engineering.

From December 22<sup>nd</sup>, 2010, to April 7<sup>th</sup>, 2019, he was Associate Professor at the same institution. He is now a member of the ABC Department (Architecture, Built Environment and Construction Engineering) of Politecnico di Milano, School of Architecture Urban Planning Construction Engineering.

Since April 8<sup>th</sup>, 2019, he is Full Professor at the same institution.

His research and teaching activities focus on innovation of construction techniques and on their relationship with sustainable architecture and users comfort. The outcome of researches is tested on real, experimental buildings when possible.

From 2005 to 2015, he was the Dean's deputy for the international activities of the School of Architectural Engineering for the European area.

Since 2005, he is a member of the Admissions Committee for the international students applying to the Master programme in Building and Architectural Engineering of the same school (taught in English).

From 2006 to 2016, he was a member of the Board of teachers of the PhD programme in Building Engineering, ABC Department.

From 2013 to 2016, he was a member of the Board of teachers of the PhD in Architecture, Built Environment and Construction Engineering, ABC Department.

From 2013 to 2016, he was an elected member of the Scientific Commission of the ABC Department.

Since 2016, he is a member of the Educational Commission of the ABC Department.

From 2014 to 2016, he was Vice-Head of the PhD programme in Building Engineering (ABC Department).

In 2015, he was Vice-Head of the Master programme in Building and Architectural Engineering (taught in English), School of Architectural Engineering.

From 1<sup>st</sup> January 2016 to 29<sup>th</sup> May 2019, he was Head of the Master programme in Building and Architectural Engineering (taught in English), School of Architecture Urban Planning Construction Engineering (terms 2016-18 and 2019-21).

Since 2016, he is a member of the Board of the School of Architecture Urban Planning Construction Engineering.

Since 6<sup>th</sup> September 2017, he is Delegate Deputy Dean of the School of Architecture Urban Planning Construction Engineering for the international activities of the Engineering programmes.

Since 7<sup>th</sup> June 2019, he is Deputy Dean of the School of Architecture Urban Planning Construction Engineering.

## RECENT TEACHING ACTIVITY

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He teaches at Politecnico di Milano since 2002.

- From Academic Year 2004-2005 to Academic Year 2014-2015, he taught "*Building components design*" in the 5-year Master in Building Engineering - Architecture in Lecco (2<sup>nd</sup> year, 9 ECTS credits).
- Since Academic Year 2008-2009, he is one of the teachers of the "*Architectural technology studio*" in the 5-year Master in Building Engineering - Architecture in Lecco (3<sup>rd</sup> year, 3 ECTS credits).
- From Academic Year 2009-2010 to Academic Year 2015-2016, he is one of the teachers of the "*Final studio lab*" for the development of final thesis works in the 5-year Master in Building Engineering - Architecture in Lecco (5<sup>th</sup> year).
- From Academic Year 2005-2006 to Academic Year 2011-2012, he taught "*Technological Design*" in the 2-year Master in Architectural Engineering in Lecco (1<sup>st</sup> year, in English). From Academic Year 2012-2013 to Academic Year 2013-2014, he taught "*Sustainable Construction Technologies*" in the same programme (6 ECTS credits).
- From Academic Year 2012-2013 to Academic Year 2013-2014, he was one of the teachers of the "*Design studio lab B*" for the development of final thesis works in the 2-year Master in Architectural Engineering in Lecco (2<sup>nd</sup> year, in English).
- In Academic Year 2014-2015, he is one of the teachers of the "*Building components design studio*" in the 5-year Master in Building Engineering - Architecture in Lecco (2<sup>nd</sup> year, 3 ECTS credits).
- Since Academic Year 2015-2016, he teaches "*Sustainable Building Technologies*" in the 2-year Master in Building and Architectural Engineering in Lecco (2<sup>nd</sup> year, in English, 9 ECTS credits).

He was supervisor of around 170 Master thesis works at Politecnico di Milano (update: 31<sup>st</sup> December 2019).

He was supervisor of the following Doctoral dissertations in the PhD programme in Building Systems Engineering, BEST / ABC Department:

- S. S. MONNA, *Integrated approach for intelligent envelope design: the performance of building envelope design strategies and technologies during the early design stage*, 2010.
- R. PEREGO, *Convenience-assessment path in technological and energy-efficiency upgrading on existing blocks of flats*, 2012.
- N. DOUST, *Design strategies for net zero energy buildings*, 2013.
- M. SAUCHELLI, *Shape Morphing Solar Skins: a methodology for generative performance based design of innovative solar shading devices. Application in a prototype of a smart shading*, 2014.
- C. BONACINA, *Investment grade energy audit – Le ESCo quali strumento per la diffusione dell'efficienza energetica nel settore residenziale: valutazioni tecnico/economiche*, 2015.
- A. A. A. ELESAWY, *INNvelope: approach to inner envelope retrofitting of multistory residential buildings*, 2015.

- M. PESENTI, *KUMORlgami: a kinetic shading device modelled by daylight*, 2016.

He was supervisor of the following Doctoral dissertations in the PhD programme in Architecture, Built Environment and Construction Engineering, ABC Department:

- E. SEGHEZZI, *A decision support framework for technology-related choices in façade retrofit*, 2018.

He was tutor of the following Doctoral dissertations in the PhD programme in Building Systems Engineering, BEST / ABC Department:

- G. SALVALAI, *Passive devices for summer climate control in buildings design tools and technological issues for Mediterranean climate*, 2009 (supervisor: E. ZAMBELLI).
- M. M. SESANA, *Net Zero Energy houses in temperate climate. A toolbox for an integrated design approach*, 2010 (supervisor: M. GRECCHI).
- S. CARLUCCI, *An automated optimization process to support the design of comfortable net zero energy buildings*, 2012 (supervisor: L. PAGLIANO).
- G. LOBACCARO, *Solar potential and microscale climate interactions in urban areas. Design strategies and use of dynamic simulation tools for solar planning*, 2013 (supervisor: T. POLI).
- C. GARGIULO, *A multi-scale method to optimize the sustainability in construction works*, 2014 (supervisor: B. DANIOTTI).
- A. BRAMBILLA, *Mediterranean Active House: analysis of climate and users impact on energy and indoor comfort in the new efficiency standard for sustainable buildings*, 2015 (supervisor: M. IMPERADORI).

He was tutor of the following Doctoral dissertations in the PhD programme in Architecture, Built Environment and Construction Engineering, ABC Department:

- A. PASSERA, *Developing a tool to assess the business concept of solar thermal façades*, 2017 (supervisor: R. LOLLINI).

## SELECTED RESEARCH ACTIVITY

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### 2000-2004

- 2000 – 2001: takes part in the State-funded research “*SsRrC – Strategies and design tools for the refurbishment and upgrade of residential buildings*”. Topic: technological solutions for energy-efficient refurbishment. Scientific director: prof. Sergio Croce.
- 2000: takes part in the research “*Diffusion of technologies with low environmental impact and high use of renewable energy sources integrated in commercial architecture and open spaces*”. Topic: innovative solutions for the exploitation of renewable energy in office buildings. Scientific director: prof. Sergio Croce.
- 2002 – 2004: takes part in the EU-CRAFT research “*C-TIDE*” (“*Changeable Thermal Inertia Dry Envelopes*”) for the development of small-medium enterprises. Scientific coordinator: Centro Interuniversitario “Progetto Costruzione Qualità” (PCQ); scientific partners: Politecnico di Milano – BEST, Università di Ancona – IDAU, Centre for Built Environment (BMG) Gävle (S). Topic: use of Phase Change Materials (PCM) in lightweight building components, in order to confer thermal inertia to Structure / Envelope construction. Scientific director for PCQ: prof. Mario De Grassi.
- 2002 – 2003: takes part, with a team of Politecnico di Milano, in the European competition EAA – Alubuild “*The Aluminium Window of the 21<sup>st</sup> century*” of the European Aluminium Association. Topic: sustainable innovation for aluminium window frames. Team coordinated by prof. Sergio Croce and prof. Ettore Zambelli. Third prize.
- 2004: takes part in the research for the design of a multi-functional school complex in Monzambano, Italy. The building is very energy-efficient and is carefully inserted in the hilly landscape. Innovative, Structure / Envelope construction are used. Scientific director: prof. Giuseppe Turchini; client: Municipality of Monzambano.
- 2004 – 2006: takes part in the State-funded research PRIN 2004 “*Procedures for design and experimentation of innovative technologies for new and refurbished residential buildings with low environmental impact*”. Topic: design strategies and innovative techniques for low-energy residential buildings in temperate climates. Scientific director: prof. Ettore Zambelli. Partners: Politecnico di Milano – BEST, Università di Genova and Università di Padova.

### 2005-2009

- 2005: takes part in the research for the design of a primary school in Solaro, Italy. The school is very energy-efficient, has low environmental impact and a flexible lay-out. Scientific director: prof. Ettore Zambelli; client: Municipality of Solaro.
- 2005 – 2006: takes part in the research for the design of a day-care centre and nursery school in Milan, Italy. The building has high performances from the point of view of flexibility, indoor comfort and energy saving. Scientific director: prof. Ettore Zambelli; client: Municipality of Milano.
- 2005 – 2006: takes part in the research “*CantiereClima – KlimaBaustelle*”. Topic: evaluation and reduction of environmental impact of building sites. Scientific director: prof. Marco Imperadori; client: Municipality of Bolzano.

- 2006 – 2008: scientific director of three different researches for the development of local energy codes for some towns in the area of Lombardy, Italy. Clients: Municipality of Selvino, Municipalities of Valle Imagna, Municipalities of Valle di Scalve.
- 2007: takes part in the research *“Ricerca e consulenza scientifica per la stesura di un capitolo del nuovo Regolamento Edilizio per il miglioramento della qualità ambientale e per il contenimento dei consumi energetici e delle emissioni inquinanti”* for the City of Milan. Topic: development of a systems of incentives for the improvement of energy efficiency and building quality in new and refurbished buildings. Scientific director: prof. Giuseppe Turchini; client: Municipality of Milano.
- 2007: takes part in the research for the design of the new headquarters of G.R. Informatica S.r.l., Lecco, Italy. The building has an innovative approach to the integration of envelope and services, with high energy efficiency and low emissions. Scientific director: prof. Ettore Zambelli; client: G.R. Informatica S.r.l.
- 2007 – 2010: takes part in the EU FP6 research *“Sustainable Smart-ECO buildings in the EU”*, coordinated by Centre for Built Environment (BMG) Gävle (S) and including 12 partners. Topic: identification of the vision for a sustainable building in the next 15 years, developing a concept shared by a large group of stakeholders and disseminating the results to the market. Scientific director for Politecnico di Milano: prof. Marco Imperadori; client: European Commission.
- 2008 – 2009: together with prof. Massimo Tadi, he is scientific director of the research *“Definizione di un manuale meta-progettuale per la definizione di linee guida, strategie aggregative e soluzioni tecnologiche per la progettazione e la costruzione di edilizia residenziale cooperativa sostenibile”*. Topic: analysis of the correlations among construction technologies, morphology of shell and energy efficiency in both winter and summer, through dynamic simulations of comfort and energy consumption on standard housing blocks. Client: FILCA Cooperative.
- 2008 – 2009: scientific director of two more works for the update of local energy codes in the towns of Albavilla and Zogno (Lombardy, Italy). Clients: Municipality of Albavilla, Municipality of Zogno.
- 2009-2010: scientific director of the research work *“Boffalora d'Adda emissioni zero”*. Topic: support to the technological and energy design of a demonstrative, carbon neutral building in line with the European energy requirements of 2020. Client: Municipality of Boffalora d'Adda.

#### **2010-2014**

- 2010 – 2012: takes part into the research and consultancy work *“999”*. Topic: design and engineering of an integrated construction system for subsidised housing. Scientific director: prof. Angelo Lucchini; client: AMAC Calligione S.r.l. (leader of a group of companies).
- 2010 – 2011: scientific director of the research work *“Definizione delle misure comunali per il miglioramento dell'efficienza energetica e della sostenibilità ambientale delle costruzioni in vista dell'obiettivo 20-20-20 dell'Unione Europea”*. Topic: definition of practical measures for the implementation of the Covenant of Mayors for 27 municipalities in the area of Val Cavallina (Lombardy, Italy). Client: Val Cavallina Servizi S.r.l.

- 2010 – 2011: takes part in the research and consultancy work *“Predisposizione degli studi per la redazione del Piano di Governo del Territorio”*. Topic: analysis of the current situation about energy use and carbon emissions in the city, and elaboration of strategies for the energy efficiency of the built environment, to be included in the land management plan for the city of Bellagio, Italy. Scientific director: prof. Danilo Palazzo; client: Municipality of Bellagio.
- 2011 – 2012: takes part in the research and consultancy work *“Revisione del manuale dei particolari costruttivi e definizione di linee guida e schemi tipologici per la flessibilità, adattabilità e versatilità spaziale”*. Topic: improvement of the standard practice of an Italian construction company and the development of a management and assessment tool for energy efficiency, serviceability and indoor air quality. Scientific director: prof. Laura Malighetti; client: Bertelli Costruzioni S.p.A.
- 2011 – 2012: together with prof. Marco Imperadori, he is scientific director of the research and consultancy work *“Definizione delle misure per il miglioramento dell'efficienza energetica e della sostenibilità ambientale delle costruzioni in area alpina vista dell'obiettivo 20-20-20 dell'Unione europea”*. Topic: analysis of the existing practice of small construction companies in Valtellina (Lombardy, Italy) and the development of a “best practice” protocol towards the 2020 targets. Client: Unione Artigiani della Provincia di Sondrio.
- 2011 – 2017: together with Dr. Alessandro Dama, he is scientific director of the research work *“Analysis of in situ test measurements for the evaluation of the performance of thin, multi-foil insulation products”*. Client: Actis SA (France).
- 2011 – 2012: takes part in the research and consultancy work *“Valutazione congiunta, in sede di studio di fattibilità, della realizzabilità dei lavori di riqualificazione dell'ISIS Facchinetti di Castellanza: zero energy building”*. Topic: preliminary design and scenario analysis for the refurbishment of an educational building dating from the 1960's and its retrofitting into a zero energy building. Scientific director: prof. Gabriele D'Antona; client: Provincia di Varese.
- 2011 – 2012: together with prof. Enrico De Angelis and prof. Tiziana Poli, he is scientific director of the research and consultancy work *“Analisi del microclima lungo il grande Boulevard e i camminamenti secondari dell'area expo 2015. Valutazione preliminare”*. Topic: study of the micro-climatic conditions under the canopies of EXPO 2015 in Milan and proposals about the improvement of comfort in outdoor spaces. Client: EXPO 2015 S.p.A.
- 2012 – 2016: takes part in the EU FP7 research *“EASEE – Envelope Approach to improve Sustainability and Energy efficiency in Existing multi-storey multi-owner residential buildings”*, coordinated by D'Appolonia (I) and including 18 partners. Topic: development of methodologies and technological solutions for the energy retrofit of multi-storey housing built after between the 1950s and the 1970s; in particular, through the improvement of performances of the walls. He is leader of Workpackage 4 *“Retrofitting solution for the inner envelope”*, dealing with solutions for the indoor retrofit of the opaque building envelope through nanotechnologies. Scientific director for Politecnico di Milano: prof. Emilio Pizzi; client: European Commission.
- 2013 – 2014: together with prof. Marco Imperadori, he is scientific director of the research and consultancy work *“Definizione delle strategie generali di un protocollo volontario per il miglioramento dell'efficienza energetica e della sostenibilità ambientale delle costruzioni in area alpina”*. Topic: development of a voluntary protocol for the quality control of the design and

construction process of energy-efficient buildings, with the involvement of stakeholders and the subsequent monitoring of its application in practice. Client: Politec Valtellina, Sondrio.

- 2013: takes part in the research and consultancy work "*Soluzioni sostenibili per il recupero edilizio caratterizzate da un alto contenuto di riciclato e utilizzabili dalle cooperative sociali di tipo B*". Topic: design and technical development of an innovative envelope component based on recycled contents and with limited environmental impact. Scientific director: prof. Laura Malighetti; client: Consorzio Consolida Società Cooperativa Sociale.
- 2014 – 2015: together with prof. Marco Imperadori and dr. Graziano Salvalai, he is scientific director of the consultancy work "*Sviluppo di azioni di coordinamento e supporto per l'applicazione del protocollo volontario di certificazione provinciale Valtellina Ecoenergy*" (work in two parts). Topic: support to education and dissemination activities related to the application of the voluntary protocol "Valtellina Ecoenergy" about the sustainability and energy efficiency of constructions in the Valtellina area, formerly developed for the same client. Client: Politec Valtellina, Sondrio.
- 2014 – 2015: member of the research and design team of Politecnico di Milano taking part in the 5<sup>th</sup> edition of the LIXIL International University Architecture Competition "*Next generation sustainable house in Taiki-cho: House for enjoying the harsh cold*", organised by the LIXIL JS Foundation with the support of the LIXIL Corporation Research Institute and the Shinkenchiku-sha review. Project shortlisted for the final stage of the competition. Team leader: prof. Marco Imperadori.

## **2015-2019**

- 2015 – 2016: member of the research and design team of Politecnico di Milano taking part in the 6<sup>th</sup> edition of the LIXIL International University Architecture Competition "*Next generation sustainable house in Taiki-cho: Comfort and lightness*", organised by the LIXIL JS Foundation with the support of the LIXIL Corporation Research Institute and the Shinkenchiku-sha review. Project shortlisted for the final stage of the competition. Team leader: prof. Marco Imperadori.
- 2016 – 2018: project manager and member of the research team of the project "*PolimiparaRocinha – Environmental performances and social inclusion: a project for the Rocinha favela in Rio, based on IMM Methodology*", for the identification of systemic actions for the improvement of the environmental conditions in the Rocinha favela in Rio de Janeiro. The multidisciplinary team includes researchers from the ABC, DASTU, DICA and Energy Departments of Politecnico di Milano. The project is financed by Politecnico di Milano with one of the Polisocial Award 2015-16 grants, and it is one of the social responsibility activities of Polisocial. Project partners: Universidade Federal do Rio de Janeiro (UFRJ), Il Sorriso dei Mieì Bimbi ONLUS, Associazione Piccole e Medie Industrie (A.P.I.), RESILIENCELAB.
- 2017: member of the research and design team of Politecnico di Milano for the "*Miracoli a Milano*" proposal, conceived and coordinated by EMBT Miralles Tagliabue. The project is one of the proposals for the urban regeneration of the disused railway yards in Milan. Activities included the definition of the general sustainability strategies, both for buildings and open spaces, and the analyses about solar radiation and air movement in the areas. Client: FS Sistemi Urbani (the real estate company of the National Railways Group).

- 2017 – 2018: scientific director of the research work “*Elaborazione di Linee Guida per la riqualificazione e nuova costruzione di biblioteche rionali*”, whose goal was the elaboration of guidelines for public neighbourhood libraries in the City of Milan, with a specific focus on user comfort, energy efficiency and low environmental impact materials. Client: Alterstudio Partners S.r.l.
- 2018: member of the research and design team of Politecnico di Milano - ABC Department taking part in the 16<sup>th</sup> edition (2018) of the *Piranesi Prix de Rome - International call for the Grand Villa Adriana*. The object of the competition was to redesign the UNESCO buffer zone, protecting the archaeological site and, more specifically, the design of a new venue for the Canopo Antiquarium. Team leaders: profs. Piero Poggioli, Claudio Fazzini, Luis Paolo Ribeiro (Universidade de Lisboa).
- 2018 – 2020: takes part in the “*Trespassing*” research group, one of the transdisciplinary units recognised by the Academic Senate of Politecnico di Milano. The project focuses on the subject of network infrastructures (particularly those related to electric mobility) and aims to build an integrated system of competences to understand and analyse their characteristics, performance and impact in terms of technology, environment, society and management. In particular, the ABC Department works on the interface between buildings (new and renovated) and electric vehicles, in terms of functional models and energy performance to enable local recharging. Scientific director: prof. Giovanni Azzone.
- 2019 – 2022: takes part in the H2020 research “*BIM4EEB – BIM-based toolkit for efficient renovation in buildings*”, coordinated by Fondazione Politecnico di Milano (I) and including 15 partners including research institutes, local authorities and private companies. The purpose of the research project is to propose a BIM-based operative platform that enables an efficient energy retrofit process, overcoming the existing barriers. Scientific director: prof. Bruno Daniotti.

## PATENTS

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Co-inventor of the patent “*Functional upholstery system, method for installation of such upholstery, installation kit of such upholstery*”. European patent no. 16794056.8 - 1002 (filed on 19.10.2016); Italian patent no. 102015000071514 (filed on 11.11.2015). The patent is based on the results of the applied work developed within the “*EASEE – Envelope Approach to improve Sustainability and Energy efficiency in Existing multi-storey multi-owner residential buildings*” EU-funded research project.

## **CONTRIBUTIONS TO CONFERENCES, MASTERS, ETC.**

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Since 2002, he contributed to around 105 conferences, courses and masters in Italy and abroad, on the topic of innovative building technologies, energy efficiency and the retrofit of existing buildings (update: 31<sup>st</sup> December 2019).

## Publications

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ORCID: 0000-0002-0704-4052 <http://orcid.org/0000-0002-0704-4052>

Scopus ID: 7101854272

Web of Science ResearcherID: K-7795-2015 - <https://publons.com/researcher/1382561/gabriele-masera-professor-meng-phd/>

Please find the complete list of publications at [www.re.public.polimi.it](http://www.re.public.polimi.it).

### SELECTED BOOKS AND CONTRIBUTIONS TO BOOKS

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#### 2000-2004

- G. MASERA, D. NEZOSI, M. RUTA, chapter *Repertorio delle strategie di intervento di ristrutturazione e trasformazione* and chapter *Studio di casi di intervento trasformativo su quartieri residenziali*, in E. ZAMBELLI (ed.), *Ristrutturazione e trasformazione del costruito – Tecnologie per la rifunzionalizzazione e la riorganizzazione architettonica degli spazi*, Il Sole 24 Ore, Milan 2004. Topic: energy-efficient technologies for refurbishment.
- G. MASERA, *Residenze e risparmio energetico – Tecnologie applicative e linee guida progettuali per la costruzione di abitazioni sostenibili*, Il Sole 24 Ore, Milan 2004. Topic: design strategies and innovative technologies for low-energy houses.

#### 2005-2009

- G. MASERA, chapter *Tecnologie costruttive ecosostenibili*, in P. GALLO (ed.), *Progettazione sostenibile*, Alinea Editrice, Florence 2005.
- G. MASERA, chapter *Breaking the seal: climate sensitive buildings*, in J.L. DE SALES MARQUES, M. IMPERADORI, C. MARREIROS (eds.), *ACE Macau – Architecture Culture Environment*, PoliPress – IEEM (Istituto de Estudos Europeus de Macau), Milan – Macau 2007, DOI: 10.13140/RG.2.1.2078.1928.
- G. MASERA, chapter *Tecnologie costruttive per edifici low energy: sistemi costruttivi in acciaio*, in S. CROCE, T. POLI (eds.), *Case a basso consumo energetico – Strategie progettuali per edifici a climatizzazione spontanea*, Il Sole 24 Ore, Milan 2007.
- G. MASERA, chapter *Progettare il ciclo di vita*, in C. MONTI, M. R. RONZONI, R. RODA, A. BARATTA, G. BIONDO, A. LUCCHINI, G. TRIPPA (eds.), *Low cost, low energy, quality architecture – Una nuova stagione per l'housing*, BE-MA Editrice, Milan 2009.
- G. MASERA, M. RUTA (eds.), *Sostenibilità e innovazione in edilizia – proceedings of the 7<sup>th</sup> national IStEA conference*, Aracne Editrice, Rome 2009.

#### 2010-2014

- G. MASERA, chapter *Smart-ECO Buildings: a European funded research towards 2010-2030 architectures*, in M. IMPERADORI, G. IANNACCONE (eds.), *ACE3 – Architecture Culture Environment*, Maggioli Editore, Santarcangelo di Romagna 2010.

- G. MASERA, M. RUTA, *Politecnico di Milano: Facoltà di Ingegneria Edile-Architettura e Polo regionale di Lecco*, in A. COPPA, F. D'AMICO, *culture\_nature: green ethics - habitat - environment*, Skira Editore, Milan 2010.
- M. IMPERADORI, G. IANNACCONE, G. MASERA, *The ecology of architecture - Smart-ECO: architecture towards 2030*, in *The international gateway - Projects and partnerships Politecnico di Milano*, Edizioni Olivares, Milan 2010.
- M. IMPERADORI, G. R. DELL'OSSO, M. A. ESPOSITO, G. MASERA, A. PIERUCCI, M. RUTA, *Dal progetto al prodotto di qualità per l'industria delle costruzioni*, in G. ALAIMO, A. CARBONARI, A. CIRIBINI, B. DANIOTTI, G. R. DELL'OSSO, M. A. ESPOSITO (eds.), *The missing brick: towards a 21<sup>st</sup>-century Built Environment Industry / Il mattone mancante: verso l'Industria dell'Ambiente Costruito del 21° secolo*, Maggioli Editore, Santarcangelo di Romagna 2012 (in Italian and English).
- G. MASERA, *Gioco di contrasti - Masdar Institute, Abu Dhabi (UAE)*, in S. CROCE, T. POLI (eds.), *Transparency - Facciate in vetro tra architettura e sperimentazione*, Il Sole 24 Ore, Milano 2013. Topic: review of the Masdar Institute case study.
- G. IANNACCONE, M. IMPERADORI, G. MASERA, *Smart-ECO Buildings towards 2020/2030 - Innovative technologies for resource efficient buildings*, Springer International Publishing, Cham Heidelberg New York Dordrecht London 2014, Scopus: codes for each chapter, DOI: 10.1007/978-3-319-00269-9.

## 2015-2019

- E. SEGHEZZI, G. MASERA, *Retrofit attraverso pannelli prefabbricati: lo stato dell'arte*, in G. ALAIMO, P. CAPONE, A. CIRIBINI, B. DANIOTTI, G. R. DELL'OSSO, M. NICOLELLA, *Sostenibilità ambientale, economia circolare e produzione edilizia - La ricerca scientifica nel Settore delle Costruzioni nell'era delle nuove sfide ambientali e digitali*, Maggioli Editore, Santarcangelo di Romagna 2015 (in Italian and English).
- E. SEGHEZZI, G. MASERA, *A process map for the management of façade retrofit*, in A. CIRIBINI, G. ALAIMO, P. CAPONE, B. DANIOTTI, G. R. DELL'OSSO, M. NICOLELLA, *Back to 4.0: rethinking the digital construction industry*, Maggioli Editore, Santarcangelo di Romagna 2016.
- G. MASERA, M. MUSCOGIURI, A. BONGIOVANNI, M. COLOMBO, *Towards a new digital craft. Potential and limitations of 3D printing in architecture and construction*, in A. CIRIBINI, G. ALAIMO, P. CAPONE, B. DANIOTTI, G. DELL'OSSO, M. NICOLELLA, *Re-shaping the construction industry*, Maggioli Editore, Santarcangelo di Romagna 2017.

## SELECTED PAPERS

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### 2000-2004

- E. ZAMBELLI, G. MASERA, *Sustainable settlement in Mondovi – New standards for Italian housing*, in Proceedings of the 19<sup>th</sup> international conference “PLEA 2002 – Design with the environment”, Toulouse 2002.
- M. IMPERADORI, G. MASERA, M. LEMMA, *Super-efficient energy buildings*, in Proceedings of the 31<sup>st</sup> IAHS World Congress on Housing, Montreal 2003.
- E. ZAMBELLI, M. IMPERADORI, G. MASERA, M. LEMMA, *High energy-efficiency buildings*, in Proceedings of the 4<sup>th</sup> International Symposium on heating, ventilating and air conditioning – ISHVAC 2003, Tsinghua University Press, Beijing 2003, Scopus: 2-s2.0-4444309474, DOI: 10.13140/RG.2.1.4437.4889.
- E. ZAMBELLI, M. IMPERADORI, G. MASERA, *Artificial programmable inertia for low-energy buildings: integrating phase change materials in building components*, in Proceedings of the 32<sup>nd</sup> IAHS World Congress on Housing, Trento 2004.

### 2005-2009

- G. MASERA, [E]STRO: *un serramento innovativo in alluminio*, in Proceedings of the 4<sup>th</sup> national conference ISTeA – Società Italiana di Scienze, Tecnologia e Ingegneria dell’Architettura “Innovazione tecnologica in edilizia: modelli e strategie di intervento”, Barletta 2005.
- M. IMPERADORI, G. MASERA, G. IANNACCONE, D. DELL’ORO, *Improving energy efficiency through artificial inertia: the use of Phase Change Materials in light internal components*, in Proceedings of the 23<sup>rd</sup> international conference “PLEA 2006 – Clever design, affordable comfort”, Geneva 2006, Scopus: 2-s2.0-84865778115, DOI: 10.13140/RG.2.1.1307.3689.
- S. FERRARI, G. MASERA, D. DELL’ORO, *Improving comfort and energy efficiency in a nursery school design process*, in Proceedings of the 23<sup>rd</sup> international conference “PLEA 2006 – Clever design, affordable comfort”, Geneva 2006, Scopus: 2-s2.0-84865798220, DOI: 10.13140/RG.2.1.5075.6888.
- M. IMPERADORI, G. MASERA, G. IANNACCONE, *High energy efficient buildings: sustainable strategies based on Structure / Envelope techniques with artificial thermal inertia*, in Proceedings of the 34<sup>th</sup> IAHS World Congress on Housing, Naples 2006.
- D. DELL’ORO, G. MASERA, *Influence of Envelope Design on Energy Performance of a Low-Rise Residential Building in Temperate Climate: Theoretical Analysis and Application to a Case Study Building*, in Proceedings of the conference “CLIMAMED 2007 – Energy, climate and indoor comfort in Mediterranean countries”, Genoa 2007.
- G. MASERA, S. FERRARI, D. DELL’ORO, F. FRONTINI, *A passive school in Milan: exemplary for temperate climates*, in Proceedings of the 11<sup>th</sup> International Conference on Passive Houses, Bregenz 2007.
- E. ZAMBELLI, S. FERRARI, G. MASERA, *Day-care centre and nursery school in Milano: a low energy design in temperate climate*, in 8<sup>th</sup> workshop of the CIB W108 Climate change and the built environment, Milan 2009, Maggioli Editore, Rimini 2009.

- G. MASERA, *Il controllo della sostenibilità ambientale: i regolamenti 3E per l'efficienza energetica degli edifici*, in *Sostenibilità e innovazione in edilizia – atti del VII convegno nazionale ISTEa*, Lerici, 10-12 July 2008, Aracne Editrice, Rome 2009.

## 2010-2014

- G. SALVALAI, E. ZAMBELLI, G. MASERA, F. FRONTINI, G. GHILARDI, *Integrated Design of low-energy houses in Selvino, Italy*, in *Proceedings of the Portugal SB10 International Conference “Sustainable building affordable to all”*, Vilamoura (P), 17-19 March 2010, DOI: 10.13140/RG.2.1.3782.1286.
- E. ZAMBELLI, F. FRONTINI, G. MASERA, G. SALVALAI, *Sustainable Smart-ECO Buildings: an integrated energy and architecture design (IEAD) process to optimize the design of the new Politecnico di Milano campus in Lecco, Italy*, in *Proceedings of the 10<sup>th</sup> REHVA World Congress “Sustainable energy use in buildings”*, Antalya (TUR), 9-12 May 2010, DOI: 10.13140/RG.2.1.2143.7280.
- S. MONNA, G. MASERA, *Intelligent tall building envelope technologies and design alternatives for comfort and energy efficiency in hot, arid climate*, in *Proceedings of the CIB World Congress 2010 “Building a better world”*, Salford, 10-13 May 2010, The University of Salford, Salford 2010, DOI: 10.13140/RG.2.1.4847.0888. Also published in *W098 & W111 - Special Track; 18<sup>th</sup> CIB World Building Congress – May 2010 Salford, United Kingdom*, CIB publication 358, CIB General Secretariat, Rotterdam 2010.
- S. MONNA, G. MASERA, *Effects of tall office building envelope technologies and design strategies on comfort and energy consumption in hot, arid climate*, in *Proceedings of the CIB World Congress 2010 “Building a better world”*, Salford, 10-13 May 2010, The University of Salford, Salford 2010, DOI: 10.13140/RG.2.1.2749.9367. Also published in *TG66 - Special Track; 18<sup>th</sup> CIB World Building Congress – May 2010 Salford, United Kingdom*, CIB publication 355, CIB General Secretariat, Rotterdam 2010.
- M. IMPERADORI, G. MASERA, M. BRASCA, *Innovative fibre-cement solutions for Smart-ECO buildings of 2020-30*, in *Proceedings of the 12<sup>th</sup> International Inorganic-Bonded Fiber Composites Conference (IIBCC 2010)*, Aalborg (DK), 22-23 September 2010.
- M. M. SESANA, M. GRECCHI, G. MASERA, *Net Zero Energy revolution: criteria, strategies and tools to design a NZE house in temperate climate. An integrated approach to residential case studies*, in *Proceedings of the 37<sup>th</sup> IAHS World Congress on Housing “Design, technology, refurbishment and management of buildings”*, Santander (E), 26-29 October 2010.
- F. PITTAU, E. DE ANGELIS, G. MASERA, G. DOTELLI, *LCA based comparative evaluation of building envelope systems*, in *Proceedings of CISBAT 2011 international conference – Cleantech for sustainable buildings – from nano to urban scale*, Lausanne (CH), 14-16 September 2011, DOI: 10.13140/RG.2.1.3323.3760.
- L. MALIGHETTI, G. MASERA, E. DE ANGELIS, T. POLI, G. LOBACCARO, *User-centred design and construction: a multi-disciplinary approach to the improvement of a SME's current practice*, in *Proceedings of the 10<sup>th</sup> international detail design in architecture conference*, Istanbul (TUR), 27-28 October 2011.

- L. MALIGHETTI, G. MASERA, M. RUTA, S. RAVASIO, G. TURCHINI, *The communication of technological design*, in *Proceedings of the 10<sup>th</sup> international detail design in architecture conference*, Istanbul (TUR), 27-28 October 2011, DOI: 10.13140/RG.2.1.3585.5209.
- M. IMPERADORI, G. MASERA, G. IANNACCONE, *Innovative technologies for sustainable buildings in 2030*, in *Proceedings of the international conference "Innovation and sustainable construction in developing countries"*, Hanoi (VN), 1-3 November 2011.
- L. MALIGHETTI, G. MASERA, E. DE ANGELIS, T. POLI, G. LOBACCARO, *A lean management tool for housing design*, in *Proceedings of the 38<sup>th</sup> IAHS World Congress on Housing "Visions for the future of housing – Mega Cities"*, Istanbul (TUR), 16-19 April 2012, DOI: 10.13140/RG.2.1.3159.5365/1.
- A. LUCCHINI, G. MASERA, E. S. MAZZUCHELLI, T. POLI, *Flexibility in typology, technology, construction and performances: an innovative approach for an open construction kit*, in *Proceedings of the 38<sup>th</sup> IAHS World Congress on Housing "Visions for the future of housing – Mega Cities"*, Istanbul (TUR), 16-19 April 2012, DOI: 10.13140/RG.2.1.2045.4246/1.
- N. DOUST, G. MASERA, M. IMPERADORI, *A study on design optimization of a near Net-Zero Energy house*, in *Proceedings of the 38<sup>th</sup> IAHS World Congress on Housing "Visions for the future of housing – Mega Cities"*, Istanbul (TUR), 16-19 April 2012.
- G. LOBACCARO, G. MASERA, T. POLI, *Solar districts: design strategies to exploit the solar potential of urban areas*, in *Proceedings of the 38<sup>th</sup> IAHS World Congress on Housing "Visions for the future of housing – Mega Cities"*, Istanbul (TUR), 16-19 April 2012.
- N. DOUST, M. IMPERADORI, G. MASERA, F. FRONTINI, *Cost optimization of a Nearly Net Zero Energy Building: a case study*, in *Proceedings of SIMUL 2012, the Fourth International Conference on Advances in System Simulation*, IARIA, Lisbon (P), 18-23 November 2012.
- G. LOBACCARO, F. FIORITO, G. MASERA, D. PRASAD, *Urban solar district: a case study of geometric optimization of solar façades for a residential building in Milan*, in *Proceedings of the 50<sup>th</sup> Annual Conference, Australian Solar Energy Society (Australian Solar Council), Melbourne (AUS)*, 6-7 December 2012, doi: 10.13140/RG.2.1.3536.3683.
- A. A. ELESAWY, G. MASERA, *The influence of internal insulation on the thermal inertia of existing residential building envelopes in hot arid climates*, in *BSCairo2013 Conference Proceedings - Towards Sustainable & Green Built Environment*, Cairo (ET), 23-24 June 2013.
- M. GIANI, C. BELFIORE, G. LOBACCARO, G. MASERA, M. IMPERADORI, F. FRONTINI, *A design approach for the solar optimization of built volumes*, in *Proceedings of CISBAT 2013 International Conference – Cleantech for Smart Cities & Buildings; from nano to urban scale*, Lausanne (CH), 4-6 September 2013, EPFL, Lausanne 2013, pp. 1035-1040, DOI: 10.13140/RG.2.1.1691.1207.
- A. A. ELESAWY, S. ALIPRANDI, C. MONTICELLI, G. MASERA, A. ZANELLI, *Thermal performance of retrofitted envelopes with internal insulation*, in W. LANG (ed.), *Proceedings of PLEA 2013 - 29<sup>th</sup> Conference – Sustainable Architecture for a Renewable Future*, Munich (D), 10-12 September 2013, Fraunhofer IRB, Munich 2014, DOI: 10.13140/RG.2.1.4060.6560.
- M. GRECCHI, M. M. SESANA, G. SALVALAI, G. MASERA, *Guidelines for residential zero energy buildings by an integrated design approach with a support toolbox*, in W. LANG (ed.), *Proceedings of PLEA 2013 - 29<sup>th</sup> Conference – Sustainable Architecture for a Renewable Future*,

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- T. POLI, R. PAOLINI, A. G. MAININI, G. MASERA, A. VALLATI, *Light temporary textile structures for the mitigation of thermal comfort. Dynamic Modelling of microclimate and thermal comfort in the urban environment*, in O. URAL, E. PIZZI, S. CROCE (eds.), *Proceedings of the 39<sup>th</sup> World Congress on Housing Science – Changing Needs, Adaptive Buildings, Smart Cities – Volume 1*, Milan (I), 17-20 September 2013, PoliScript, Milan 2013, pp. 1357-1364.
- M. SAUCHELLI, G. LOBACCARO, G. MASERA, F. FIORITO, *Smart solutions for solar adaptive façade. Preliminary studies for an innovative shading device*, in O. URAL, E. PIZZI, S. CROCE (eds.), *Proceedings of the 39<sup>th</sup> World Congress on Housing Science – Changing Needs, Adaptive Buildings, Smart Cities – Volume 1*, Milan (I), 17-20 September 2013, PoliScript, Milan 2013, pp. 163-172, DOI: 10.13140/RG.2.1.1953.2647.
- A. A. ELESAWY, G. MASERA, *The influence of insulation on the thermal inertia of existing residential building envelopes*, in O. URAL, E. PIZZI, S. CROCE (eds.), *Proceedings of the 39<sup>th</sup> World Congress on Housing Science – Changing Needs, Adaptive Buildings, Smart Cities – Volume 1*, Milan (I), 17-20 September 2013, PoliScript, Milan 2013, pp. 985-992.
- G. LOBACCARO, G. MASERA, A. SENATORE, *Solar potential in urban areas: a new approach to solar and sustainable urban planning*, in *Advanced Building Skins - Conference Proceedings of the 8<sup>th</sup> Energy Forum*, Bressanone (I), 5-6 November 2013, Economic Forum, Munich, pp. 281-285.
- G. LOBACCARO, G. MASERA, *A digital language for a new sustainable urban planning: design and simulation tools for solar architecture*, in L. MALKI-EPSTHEIN, C. SPATARU, L. MARJANOVIC HALBURD, D. MUMOVIC (eds.), *Proceedings of the 2014 Building Simulation and Optimization Conference*, London (UK), 23-24 June 2014, The Bartlett, UCL Faculty of the Built Environment, Institute for Environmental Design and Engineering, London 2014.
- A. DAMA, E. DE LENA, G. MASERA, L. PAGLIANO, M. RUTA, P. ZANGHERI, *Design and passive strategies optimisation towards zero energy target: the case study of an experimental office building in Milan*, in L. MALKI-EPSTHEIN, C. SPATARU, L. MARJANOVIC HALBURD, D. MUMOVIC (eds.), *Proceedings of the 2014 Building Simulation and Optimization Conference*, London (UK), 23-24 June 2014, The Bartlett, UCL Faculty of the Built Environment, Institute for Environmental Design and Engineering, London 2014, DOI: 10.13140/RG.2.1.3591.6643.
- G. MASERA, G. IANNACCONE, G. SALVALAI, *Retrofitting the existing envelope of residential buildings: innovative technologies, performance assessment and design methods*, in *Advanced Building Skins - Conference Proceedings of the 9<sup>th</sup> Energy Forum*, Bressanone (I), 28-29 October 2014, Economic Forum, Munich, pp. 987-994, DOI: 10.13140/RG.2.1.2543.0887.
- F. PITTAU, L. E. MALIGHETTI, G. MASERA, G. IANNACCONE, *Preassembled timber panels for roof retrofit: a method for the selection of sustainable and recycled materials*, in A. TADEU, D. URAL, O. URAL, V. ABRANTES (eds.), *Proceedings of the 40<sup>th</sup> IAHS World Congress on Housing – “Sustainable Housing Construction”*, Funchal (P), 16-19 December 2014, ITeCons – Institute for Research and Technological Development in Construction Sciences, Coimbra 2014.

**2015-2019**

- G. MASERA, M. IMPERADORI, A. VANOSI, S.-J. LIOTTA, Y. ITO, *Modular, adaptable shelters for environmentally sensible archaeological sites*, in *Proceedings of the International Association for Shell and Spatial Structures IASS WG12+WG18 Joint International Colloquium on Bio-based and Bio-inspired environmentally compatible structures*, Tokyo (JPN), 11-12 April 2015, Tokyo Denki University, DOI: 10.13140/RG.2.1.2018.8008.
- F. PITTAU, L. E. MALIGHETTI, G. MASERA, *How to select the most sustainable materials for the roof retrofit? A semi-quantitative method applied to a preassembled timber panel*, in *Proceedings of the 3<sup>rd</sup> International Congress on Construction and Building Research COINVEDI*, Madrid (E), 14-16 December 2015, Escuela Técnica Superior de Edificación, Universidad Politécnica de Madrid, ISBN 9788493356767, pp. 129-130 (extended abstract).
- E. SEGHEZZI, G. MASERA, *Building retrofit through prefabricated panels: an overview on the state of the art*, in *Proceedings of the 3<sup>rd</sup> International Congress on Construction and Building Research COINVEDI*, Madrid (E), 14-16 December 2015, Escuela Técnica Superior de Edificación, Universidad Politécnica de Madrid, ISBN 9788493356767, pp. 241-242 (extended abstract).
- F. PITTAU, L. E. MALIGHETTI, G. MASERA, G. IANNACONE, *A new modular preassembled timber panel for the energy retrofit of the housing stock*, in *Proceedings of the World Conference on Timber Engineering - WTCE 2016*, Vienna (A), 22-25 August 2016, Vienna University of Technology, ISBN 9783903039001, pp. 1-10, Scopus: 2-s2.0-85010993623.
- G. MASERA, M. MUSCOGIURI, M. COLOMBO, P. RUTTICO, A. BONGIOVANNI, D. CUCCHI, E. GAMBA, M. F. SANGIORGIO, M. LEGRAMANDI, *Applications of 3D printing in architecture: from shape optimisation to practical challenges*, in *Proceedings of the International Conference on Smart, Sustainable and Sensuous Settlements Transformation (3SSettlements)*, Munich (D), 7-8 March 2018, Technische Universität München, pp. 184-192.
- G. M. DI GIUDA, P. E. GIANA, G. MASERA, E. SEGHEZZI, V. VILLA, *A BIM-based approach to façade cladding optimization: geometrical, economic, and production-control in a DfMA perspective*, in J. O'DONNELL, A. CHASSIAKOS, D. ROVAS, D. HALL (eds.), *Volume I – Proceedings of the 2019 European Conference on Computing in Construction*, Chania, Crete (GR), 10-12 July 2019, European Council on Computing in Construction, University College Dublin, Dublin 2019, ISBN 978-1-910963-37-1, DOI: 10.35490/EC3.2019.

## SELECTED ARTICLES

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Since 2001, he has been contributing to several Italian reviews, with more than 50 articles, on the topics of energy efficient architecture and the integration of innovative technologies in current buildings, including reviews of case studies in these fields.

The following are selected contributions to international reviews and journals.

### 2005-2009

- M. IMPERADORI, G. MASERA, M. LEMMA, *Super-efficient energy buildings*, in “*International Journal for Housing Science and its applications*”, vol. 28, n. 1 (2004), pp. 33-43, Scopus: 2-s2.0-0347568204.

### 2010-2014

- D. PALAZZO, G. MASERA, M. GRECCHI, L. MALIGHETTI, M. M. SESANA, *Multidisciplinary design process: urban, architectural and technological analyses for energy-efficient residential buildings in Northern Italy*, in “*International Journal for Housing Science and its applications*”, vol. 35, n. 1 (2011), pp. 11-21, Scopus: 2-s2.0-80955140362.
- G. LOBACCARO, F. FIORITO, G. MASERA, T. POLI, *District geometry simulation: a study for the optimization of solar façades in urban canopy layers*, in “*Energy Procedia*”, vol. 30 (2012), pp. 1163-1172, Elsevier, Scopus: 2-s2.0-84897042933, DOI: 10.1016/j.egypro.2012.11.129.
- G. LOBACCARO, F. FRONTINI, G. MASERA, T. POLI, *SolarPW: a new solar design tool to exploit solar potential in existing urban areas*, in “*Energy Procedia*”, vol. 30 (2012), pp. 1173-1183, Elsevier, Scopus: 2-s2.0-84897042933, DOI: 10.1016/j.egypro.2012.11.130.
- N. DOUST, G. MASERA, M. IMPERADORI, *A study in design optimization of a Near-Net Zero Energy house*, in “*International Journal for Housing Science and its applications*”, vol. 37, n. 1 (2013), pp. 23-31, Scopus: 2-s2.0-84871757598.
- M. SAUCHELLI, G. MASERA, G. D'ANTONA, G. MANZOLINI, *ISIS Facchinetti: a Nearly Zero Energy retrofit in Italy*, in “*Energy Procedia*”, vol. 48 (2014), pp. 1326-1335, Elsevier, Scopus: 2-s2.0-84898980958, DOI: 10.1016/j.egypro.2014.02.150.

### 2015-2019

- G. SALVALAI, G. MASERA, M. M. SESANA, *Italian local codes for energy efficiency of buildings: theoretical definition and experimental application to a residential case study*, in “*Renewable and Sustainable Energy Reviews*”, vol. 42 (2015), pp. 1245-1259, Elsevier, Scopus: 2-s2.0-84911162802, DOI:10.1016/j.rser.2014.10.038.
- M. PESENTI, G. MASERA, F. FIORITO, M. SAUCHELLI, *Kinetic solar skin: a responsive folding technique*, in “*Energy Procedia*”, vol. 70 (2015), pp. 661-672, Elsevier, Scopus: 2-s2.0-84994787800, DOI: 10.1016/j.egypro.2015.02.174.
- C. F. BONACINA, G. MASERA, A. PAVAN, *Investment Grade Energy Audit: a financial tool for the cost-effective renovation of residential buildings*, in “*Energy Procedia*”, vol. 70 (2015), pp. 709-718, Elsevier, Scopus: 2-s2.0-84994731776, DOI: 10.1016/j.egypro.2015.02.180.

- M. PESENTI, G. MASERA, F. FIORITO, *Shaping an Origami shading device through visual and thermal simulations*, in “*Energy Procedia*”, vol. 78 (2015), pp. 346-351, Elsevier, Scopus: 2-s2.0-84962522336, DOI: 10.1016/j.egypro.2015.11.663.
- R. GALLIANO, T. STAHL, S. BRUNNER, S. ZHAO, G. MASERA, S. ALIPRANDI, *Hygrothermal Behaviour of Three Internal Retrofit Prototype Solutions*, in “*Energy Procedia*”, vol. 78 (2015), pp. 1413-1418, Elsevier, Scopus: 2-s2.0-84962485174, DOI: 10.1016/j.egypro.2015.11.163.
- E. SEGHEZZI, G. MASERA, *Retrofit de la construcción mediante paneles prefabricados: una reseña del estado del arte – Building Retrofit through prefabricated panels: an overview on the state of the art*, in “*Anales de Edificación*”, vol. 1 (2015), no. 3, pp. 41-48, Departamento de Tecnología de la Edificación - E.T.S. de Edificación - Universidad Politécnica de Madrid, DOI: 10.20868/ade.2015.3136.
- F. FIORITO, M. SAUCHELLI, D. ARROYO, M. PESENTI, M. IMPERADORI, G. MASERA, G. RANZI, *Shape morphing solar shadings: a review*, in “*Renewable and Sustainable Energy Reviews*”, vol. 55 (2016), pp. 863-884, Elsevier, Scopus: 2-s2.0-84948134987, DOI: 10.1016/j.rser.2015.10.086.
- G. MASERA, chapter *Sustainability*, pp. 38-63, and chapter *Safety*, pp. 64-75, in D. BOLLANI, G. MASERA (eds.), *Behind the curtain wall*, supplement to “*Domus*”, no. 1003, June 2016, Editoriale Domus, Milan.
- G. MASERA, K. G. WAKILI, T. STAHL, S. BRUNNER, R. GALLIANO, C. MONTICELLI, S. ALIPRANDI, A. ZANELLI, A. ELESAWY, *Development of a super-insulating, aerogel-based textile wallpaper for the indoor energy retrofit of existing residential buildings*, in “*Procedia Engineering*”, vol. 180 (2017), pp. 1139-1149, Elsevier, ISSN 1877-7058, Scopus: 2-s2.0-85020524255, DOI: 10.1016/j.proeng.2017.04.274.
- E. SEGHEZZI, G. MASERA, *Identification of technological and installation-related parameters for a multi-criteria approach to building retrofit*, in “*Procedia Engineering*”, vol. 180 (2017), pp. 1056-1064, Elsevier, ISSN 1877-7058, Scopus: 2-s2.0-85020537383, DOI: 10.1016/j.proeng.2017.04.265.
- F. PITTAU, L. MALIGHETTI, G. IANNACCONE, G. MASERA, *Prefabrication as large-scale efficient strategy for the energy retrofit of the housing stock: an Italian case study*, in “*Procedia Engineering*”, vol. 180 (2017), pp. 1160-1169, Elsevier, ISSN 1877-7058, Scopus: 2-s2.0-85020537533, DOI: 10.1016/j.proeng.2017.04.276.
- A. ARCIDIACONO, F. CAUSONE, M. GROSSO, G. MASERA, M. TADI, M. H. MOHAMMAD ZADEH, *Environmental performance and social inclusion: a project for the Rocinha favela in Rio de Janeiro*, in “*Energy Procedia*”, vol. 134 (2017), pp. 356-365, Elsevier, ISSN 1876-6102, Scopus: 2-s2.0-85032656426, DOI: 10.1016/j.egypro.2017.09.546.
- M. PESENTI, G. MASERA, F. FIORITO, *Exploration of adaptive origami shading concepts through integrated dynamic simulations*, in “*Journal of Architectural Engineering*”, vol. 24, no. 4 (2018), pp. 04018022/1-04018022/14, American Society of Civil Engineers (ASCE), ISSN 1076-0431, Scopus: 2-s2.0-85050405261, DOI: 10.1061/(ASCE)AE.1943-5568.0000323.
- E. SEGHEZZI, G. MASERA, F. RE CECCONI, *Decision Support for existing buildings: an LCC-based proposal for facade retrofitting technological choices*, in “*IOP Conference Series: Earth and Environmental Science*”, vol. 296 (2019) 012032, IOP Publishing, ISSN 1755-1307, Scopus: 2-s2.0-85070629058, DOI: 10.1088/1755-1315/296/1/012032.

- S. GIOSTRA, G. MASERA, F. RE CECCONI, *Use of 3D tessellation in curtain wall facades to improve visual comfort and energy production in buildings*, in "IOP Conference Series: Earth and Environmental Science", vol. 296 (2019) 012044, IOP Publishing, ISSN 1755-1307, Scopus: 2-s2.0-85070580544, DOI: 10.1088/1755-1315/296/1/012044.
- T. PAGNACCO, G. MASERA, A. WEILANDT, N. BALDASSINI, *A framework for the optimisation of glazed gridshells in the early design stage under structural and energy-based criteria*, in "IOP Conference Series: Earth and Environmental Science", vol. 296 (2019) 012057, IOP Publishing, ISSN 1755-1307, Scopus: 2-s2.0-85070610499, DOI: 10.1088/1755-1315/296/1/012057.

#### **2020-2024**

- G. BECCIU, S. MAMBRETTI, G. MASERA, U. SANFILIPPO, M. TADI, *Management of water and wastewater under the framework of the IMM: the case of the favela Rocinha*, in "International Journal of Sustainable Development and Planning", vol. 15, no. 1 (2020), pp. 81-94, WIT Press, ISSN 1743-7601, Scopus: ..., DOI: 10.2495/SDP-V15-N1-81-94.

## Other activities

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- In 1990, selected for the final stage of the Italian section of the 23<sup>rd</sup> Philips Contest for Young Scientists, with a work about the Pascal programming language.
- From 2004 to 2013, teacher of the ATHENS course "*Sustainable low energy houses: basics of design*", held at Polo Territoriale di Lecco of Politecnico di Milano, with the participation of students coming from several European universities. From 2008 to 2013, Head of the same course.
- Visiting professor at the Escuela Universitaria de Arquitectura Técnica, Universidad Politécnica de Madrid, in 2010, 2011 and 2012.
- Visiting professor at the Keio University in Tokyo, Faculty of Science and Technology, Department of System Design Engineering, in 2015 and 2018.
- Participant to an Erasmus+ KA107 project (staff mobility for teaching) with Drexel University Philadelphia, College of Engineering, Department of Civil, Architectural and Environmental Engineering, 18-29 April 2019.
- Member of the ISTeA Scientific Society (*Italian Society of Science, Technology and Engineering of Architecture*).
- Member of the Scientific Committee of the international conference "*COINVEDI - 2<sup>nd</sup> International Conference on Construction and Building Research*", organised by the School of Building Engineering of the Universitat Politècnica de València, Valencia (E), 14-16 November 2012.
- Member of the Steering Board and of the Scientific Committee of the international conference "*IAHS 39<sup>th</sup> World Congress on Housing Science - Changing needs, Adaptive Buildings, Smart cities*", organised by the ABC Department of Politecnico di Milano, Milan (I), 17-20 September 2013.
- Member of the Scientific Committee of the international conference "*COINVEDI - 3<sup>rd</sup> International Conference on Construction and Building Research*", organised by the School of Building Engineering of the Universidad Politécnica de Madrid, Madrid (E), 14-16 December 2015.
- Member of the Scientific Committee of *MI/Arch 2016 - "40 constructions"*, organised by Politecnico di Milano, 12-15 October 2016.
- Member of the International Scientific Committee of the international conference "*International High-Performance Built Environments Conference (iHBE)*", organised by the University of New South Wales, Sydney (AUS), 17-18 November 2016.
- Member of the Scientific Committee of the international conference "*Resilient Built Environment for Sustainable Mediterranean Countries (SBE19)*", organised by Politecnico di Milano, Milan, Italy, 4-5 September 2019.
- From 2006 to 2015, member of the editorial board and scientific consultant for the review of architecture and technology "*Arketipo*", Milan, New Business Media - Tecniche Nuove.
- From 2005 to 2008, member of the editorial board of "*@BEST*", review of the Department of Built Environment Science and Technology of Politecnico di Milano.
- Juror in several competitions and awards about sustainable architecture and technology.